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ABSTRACTS OF
The Milroy Lectures
ON THE
HYGIENIC ASPECT OF THE COAL-MINING INDUSTRY IN THE UNITED KINGDOM.

Delivered before the Royal College of Physicians of London

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MEDICAL REFEREE UNDER THE WORKMEN'S COMPENSATION ACT FOR THE NORTH STAFFORDSHIRE DISTRICT.

LECTURE IV.

MINERS' NYSTAGMUS.

MR. PRESIDENT AND GENTLEMEN,—Miners' nystagmus must be regarded as the commonest of all occupational diseases. This disease was first recognised by Gillett, of Sheffield, about 1854, although no case was mentioned in medical literature until 1861, when the symptoms were first described by De Conde. In 1907 it was felt necessary to schedule miners' nystagmus as an occupational disease under the Workmen's Compensation Act, in order to entitle sufferers to compensation when disabled by it. Dr. J. Court has stated as a result of examination of several thousands of workmen that 35 per cent. of coal getters are subject to this disease to some extent.

Symptoms of nystagmus are most commonly found among miners engaged in holing, a process which consists of cutting the coal seam so as to get out the coal in pieces as large as possible, the holer being on his side with his knees drawn up and his head thrown backwards, and he strikes the coal with a horizontal swing, the lamp being placed near his feet. He may undercut the seam or "top cut" it, but in either case the muscles of the eyeballs are in a continually strained position, and as a result the elevator muscles suffer from strain and cramp. The hewers and the loaders who are working at the face come next in liability to the disease. All observers agree that the workmen who work hardest and who earn the best wages are more likely to be affected than those whose weekly output of coal is smaller.

Miners' nystagmus seldom occurs before the age of 25, and not usually before a miner has worked for ten years underground.

McMurray found that of 120 consecutive cases of miners' nystagmus, 39, or practically one-third, were between 40 and 50 years of age, and 33 between 30 and 40. Between 50 and 60 there were 22 cases. There were two patients under the age of 20, one of whom was suffering from congenital nystagmus, and the symptoms in the second case came on after a severe injury to the head; between the ages of 60 and 70 he had six cases.

Libert, in an analysis of 262 cases, found that 37 per cent. occurred between the ages of 30 and 40, and 31 per cent. between the ages of 40 and 50; 22 per cent. occurred between 20 and 30.

Llewellyn analysed 600 cases, and found that 33 per cent. occurred between the ages of 30 and 40, 29 per cent. between 40 and 50, and 16 per cent. between 20 and 30. The same observer recorded that only 7 per cent. of his cases had worked underground less than ten years, while 33 per cent. had worked between 20 and 30 years.

It would seem that the longer a man has worked in the pit the more likely is he to develop nystagmus. This may be regarded as a general rule which may be applied to all workers up to the time when they have worked 30 years in the pit, after which they do not appear to be so susceptible. The youngest case that has come under Llewellyn's notice was a boy aged 15, and 47 of his cases developed the disease before the age of 25. In McMurray's series of 120 cases 9 of the patients were 25 years and under. The shortest time in which the disease has been known to develop after underground work is five months.

Symptoms.

We must realise at the outset that we are not dealing with a disease localised to the eyes, but with a general disease, one symptom of which is oscillation of the eyeballs. The term "miners' nystagmus" is an unfortunate one, as it simply relates to one symptom, and the nomenclature of this disease has certainly given rise to a great deal of confusion, even among medical men who practise in colliery districts, and who are constantly coming in contact with patients suffering from it. Nystagmus is a symptom which is common to a large number of diseases, among which may be mentioned Friedreich's ataxia, disseminated sclerosis, and some congenital diseases of the eye, and the term was first used by physicians who noticed symptoms of nystagmus commonly associated with children who had nodding heads, hence the derivation of the word from νύσταζω, meaning "I nod." The symptoms of this disease, however, are not confined to oscillation of the eyeballs and any effects which may result from this phenomenon. There may be, and generally are, symptoms such as headache, nausea, attacks of giddiness, muscular tremors, twitching of the muscles in different parts of the body, especially the muscles of the eyelids and the face and neck; neurasthenia may be a prominent symptom, with its associated conditions, such as a quickened pulse, exaggerated reflexes, increased vasomotor irritability, sleeplessness, and nervous depression. All these symptoms may be present in any given case of miners' nystagmus, but in many cases some only of the symptoms are present, and at given times the prominent symptom, the oscillation of the eyeballs, may actually be absent, although the patient is undoubtedly suffering from the disease which we know as miners' nystagmus.

The commonest complaint associated with miners' nystagmus is the jumping about or flickering of the lights in the pit or the gas lights on the surface. Those who know what a St. Catharine's wheel is generally compare the sensation to the lights moving round like those wheels. Photophobia is a common symptom of miners' nystagmus, and a large majority of the cases complain that they cannot see at night, and others that the symptoms are worse at twilight. The symptom of night blindness is one of the earliest to be perceived by the sufferer. This is undoubtedly one of the most characteristic symptoms of miners' nystagmus, and it is regarded by Court and Llewellyn as being present in about 75 per cent. of all cases. Among the rarer subjective symptoms are double vision and photopsia. Patients suffering from miners' nystagmus very often complain of nervousness, sleeplessness, and of mental depression. There may be a general facial expression which is common to the neurasthenic, and the patient may also complain of vague shifting aches and pains in different parts of the body. In some cases mental symptoms of a very serious nature occur, and the nervous depression is so great occasionally that the patients have suicidal tendencies.

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[1] Abstracts of the previous lectures were published in THE LANCET of June 20th (p. 1731) and 27th (p. 1799), 1914.

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Physical Signs.

The most prominent and the most important physical sign is oscillation of the eyeballs. In a typical case the movement of the eyeball is rotatory, rhythmic, and involuntary, but may vary in different patients in direction of movement as well as in frequency; in exceptional cases to-and-fro movements are found as well. All observers are agreed that vertical nystagmus is very rare. While the disease usually affects both eyes, unilateral nystagmus has been observed. I have seen nystagmic movements of the muscular stump after the eye has been removed, and rhythmic oscillations of a shrunken and blind eye. The movements may be different in direction in each eye, and the rate may vary in different patients and in the same patient at different times. In the majority of cases both eyes move at the same rate.

The frequency in ordinary cases is from 100 to 300 oscillations per minute, but occasionally the movements are so rapid that it is impossible to count them. The range of movement varies from 1 millimetre to 1 centimetre, and sometimes the movements are so rapid and the excursion so short that it is impossible to detect the oscillation of the eyeball without the use of an ophthalmoscope. Llewellyn has pointed out that the fine rapid movements are much more constant in rhythm than the coarser movements, which are slower and more irregular. The oscillations are increased by exertion, by excitement, by looking upwards, by rapid movements of the head, by bending the head and raising it quickly, or during the fixation of some distant object; and in cases in which no oscillations are obvious at first on medical examination they may be induced by the same means. Where the miner has been absent from work for a considerable time this procedure may not be sufficient to induce the oscillations, and they can only be made evident by placing the miner in a position similar to that in which he works in the mine, and by asking him to go through the same movements of his arms in a darkened room as he would perform in the pit while at work. The oscillations may be arrested by looking down and resting the eyes, and entirely stopped on strong convergence of the eyes, and they cease during sleep.

Clonic spasm of the eyelids is a common, and in some cases the main prominent, objective symptom. Sometimes it is an early, sometimes a late symptom, and very often it may remain after the oscillation of the eyeball has ceased. Llewellyn has pointed out that the movements of the eyelids associated with nystagmus are of two kinds—the coarse blinking movement and the fine tremor or clonic spasm; and in the former, although the movements may be quick, they are tonic and not clonic. These movements may be exaggerated and made more obvious by adopting the means I have described in discussing oscillation of the eyeballs. The frequency of the clonic spasm and the oscillation of the eyeballs are independent of each other.

In addition to the above two signs we may often find tremors of the facial muscles, of the eyebrows and even of the whole head. Llewellyn found tremor of the head in 27 per cent. of his cases, McMurray found it after exertion to be an almost invariable symptom, and my own experience coincides with that of the latter observer. The muscles of the neck and shoulder may also be affected, and in some cases the spasm of the muscles of the neck may be so pronounced that the head is held backwards and wry-neck produced.

The gait in a typical case of miners' nystagmus is characteristic. The patient endeavours to compensate for his visual defect by throwing the head backwards and keeping the eyes down and walking stiffly. In severe cases the gait may be ataxic and Romberg's sign may be observed.

Vision.

Many observers are of the opinion that some optic defect is one of the principal factors in the production of miners' nystagmus. We may find evidence of old injury to the eye, but a large percentage of cases show errors of refraction. Brown and Mackenzie found such errors present in 90 per cent., astigmatism accounting for 48 per cent., hypermetropia for 27 per cent., and myopia for 15 per cent. From McMurray's series of cases of miners' nystagmus it appears that two-thirds of them have some refractive error, and Folker found 75 per cent. and Llewellyn 83 per cent. in the cases which have come under their observation. Astigmatism of various kinds is the commonest form of refractive error, and hypermetropic cases are more frequent than myopic ones.

Visual acuity is nearly always diminished, even in convalescent cases where there is no oscillation of the eyeballs. Cridland has investigated the field of vision in a series of cases of miners' nystagmus, in nearly all of which the men had been compelled to give up their work on account of the severity of the symptoms. The result of his examination of these cases showed:—

> 1. That contraction existed for blue, white, and red in practically all the cases examined. 2. The contraction was of the concentric type and symmetrical in shape, although not always in depth. 3. In the majority of cases the colours were in their correct order, but occasionally interlacing of the red and blue occurred, the correct order being recovered as the case improved. 4. The contractions for red and blue were generally greater than those for white, and rather greater for red than blue. 5. By grouping the cases into mild, moderate, and severe types the fields broadly showed corresponding contractions. 6. Speaking generally, as the disease improved the fields of vision improved, but contraction persisted as long as any subjective symptoms were present, and although oscillatory movements could not be elicited by any test. 7. Most of the cases showed more or less marked signs of such symptoms as clonic spasm of the eyelid, twitching of the neck, &c., but there seems to be no direct relationship between the presence and degree of these signs.

Cridland points out that there is a great similarity between the fields in miners' nystagmus and in traumatic neurasthenia, and throws out the suggestion that the alteration in the field of vision in nystagmus cases is of the same nature as that found in traumatic neurasthenia. If we keep in mind the possibility of miners' nystagmus being a neurosis of the same nature as neurasthenia, and that neurasthenia and miners' nystagmus are so often associated in the same subject, and that each may be induced by an injury in many cases, I think we may infer that nystagmus itself should be regarded as a local symptom of neurasthenia.

I have noticed in many cases of miners' nystagmus that when the patient is sitting down and has put his head between his legs for a short time, say a minute or so, on raising his head the eyes not only have the oscillations and clonic spasm, the oscillations being more marked, but there has been a prominent bulging of the eyes, almost bordering on exophthalmos, accompanied by marked injection. I have found this symptom sometimes of the greatest value in doubtful cases.

Onset of the Disease.

In some cases the onset is gradual, and on the average we may say that 12 months may elapse between the appearance of the first symptoms and the time when the patient consults his doctor. On the other hand, in some cases the onset is strikingly sudden, and when it is so it is generally the result of some debilitating illness, such as influenza, or the result of an accident either to the eye or to other parts of the body. The disease may develop in a few months after a miner has worked regularly for 20 or 30 years in the mine without any apparent trouble. When the patient first consults his doctor he may be unconscious of the oscillation of the eyeballs, and he may have no suspicion that he is suffering from miners' nystagmus. He may complain of some of the objective symptoms already described. In another group of cases we may find that the symptoms complained of are purely nervous; the man may tell his doctor that he is simply run down or fearing a nervous breakdown, and symptoms of neurasthenia preponderate to such an extent that miners' nystagmus may be overlooked.

The progress of the disease may depend upon many conditions. Just as illness or an accident may be the cause of the sudden onset of the disease, we find that they may aggravate any form of miners' nystagmus and convert a mild or a latent case into a serious one. If the accident sets up a neurasthenic condition which previously did not exist, the symptoms associated with nystagmus will be still more serious. Excessive drinking or smoking may intensify the condition.

If a miner suffering from this complaint continues in the occupation at which he contracted it the symptoms will in the course of time increase and assume a more serious form. On the other hand, for the disease to be arrested the sufferer must entirely give up work in the pit. The period of recovery will depend largely upon the severity of the symptoms and upon the manner in which the treatment is carried out. Even after recovery relapse is very common, and sometimes under conditions favourable to the aggravation of the disease the patient may have several relapses.

Diagnosis.

It is first of all necessary to decide whether the prominent objective symptoms are due to the nature of the man's employment or not. Nystagmus, or oscillation of the eyeballs, is associated with several diseases of the brain and spinal cord, such as Friedreich's ataxia, syringomyelia, disseminated sclerosis, and tumour of the cerebellum, as well as some congenital diseases of the eye, but the history of the case and the presence of other symptoms should be sufficient to make a differential diagnosis from miners' nystagmus. In all these conditions the movements of the eyeballs or the actual nystagmus are different from those found in miners' nystagmus, in which the movements are much more forcible and rapid, and can be exaggerated much more easily by the methods described.

Clonic spasm of the eyelid is found in many other conditions besides miners' nystagmus; but by systematic examination it is easy, if the other symptoms are considered, to decide in the case of a miner whether the twitching of the eyelids is due to nystagmus. If associated with nystagmus and clonic spasm of the eyelids there are some of the other symptoms to which I have referred, there should be no difficulty in making a diagnosis of miners' nystagmus. It is both important and interesting to know that although nystagmus may be found in the diseases of the brain and spinal cord to which I have referred—Friedreich's ataxia, &c.—in these conditions clonic spasm of the eyelids is never found. In a miner, therefore, who shows the two objective symptoms of nystagmus and clonic spasm one can be certain of the diagnosis of miners' nystagmus.

If no oscillation of the eyeball is observed care is necessary in order to come to a reliable conclusion. Not only may the oscillations be present at some times and not at others, but undoubtedly in some cases of miners' nystagmus no oscillation of the eyeballs is observed at all. In such cases clonic spasm of the eyelids may be the most prominent objective symptom, and if with it headaches, giddiness, muscular tremors, and neurasthenia are found, unaccompanied by any of those conditions which may produce clonic spasm by itself, I think that, apart from the subjective symptoms, the diagnosis of miners' nystagmus is justifiable. Llewellyn points out that it is necessary to exclude cases of high myopia, of which he has seen two examples, as well as such congenital conditions as hereditary nystagmus or albinism.

Causation.

The four most important factors which we have to consider are: (1) defective illumination in the mine caused by the low candle power of the safety lamp; (2) the peculiar cramped position in which miners work, especially the holers and other workers employed at the coal face; (3) the refractive errors found among the miners themselves; and (4) the frequent injuries which miners sustain during their employment, and more especially injuries to the eye itself; but it cannot be said in any case that miners' nystagmus can be caused by any one of these conditions alone, and the real truth probably lies in the fact that the onset of the disease is due to a combination of circumstances. Except at the pit bottom we always find defective illumination in the coal mines of this country; further, in perhaps the majority of cases the men work in a cramped position; refractive errors are at least as common among miners as among other sections of the community, and there is no doubt that miners are by the nature of their employment specially liable to small injuries to the eye, such as abrasions of the cornea. On the surface a worker can see when danger is coming and protect his eyes by means of his eyelids, but in the defectively lighted pit this is impossible. The general feeling at the present time, however, is that the principal factor in the disease is the deficient illumination of the mine, and at the Ophthalmological Congress at Oxford in 1912 it was the unanimous opinion of the members that the principal cause of miners' nystagmus was the poor lighting of the pit.

In the collieries in the Forest of Dean where open lights are entirely used, according to the experience of Sir Frank Brain, only one case of nystagmus has come within the scope of the Workmen's Compensation Act since it became a scheduled disease seven years ago, and in the Black Country where open lights are used to a large extent miners' nystagmus is comparatively rare. In Scotland again, where candles are used to a very large extent instead of safety lamps, nystagmus is much less frequent than in England and Wales. In the metalliferous mines of this country (not including ironstone mines) where naked lights are universally used miners' nystagmus is an unknown disease, and in the ironstone mines it is very rare.

The candle power of a tallow candle will vary according to the number of candles to the pound, but, roughly speaking, we may say that the candle power of an ordinary naked light varies from 0·75 to 1·5. The candle power of a new Davy safety lamp is 0·2 and of a Clanny 0·68, but these figures are materially reduced when the lamp is in use in the pit. The illuminating power begins to be reduced as soon as the miner commences to work, and slowly and progressively diminishes on account of the dusty atmosphere, and also from the fact that no attention can be paid to the condition of the wick and the inside of the glasses. The candle power of the safety lamp may be materially diminished on account of defective ventilation in the workings, and the difference of candle power between the readings measured in the main intake and the main return may vary to the extent of from 25 to 35 per cent.

The second factor in the production of this disease—the cramped position of the miner while at work—is one to which the late Simeon Snell paid special importance. He believed that nystagmus in miners was a myopathy dependent on the peculiar position assumed by a certain class of men in the mine, and that the position of the miner at his work was the prime and essential cause of miners' nystagmus irrespective of the deficient illumination in the pit. He was under the impression that the disease was practically confined to holers and deputies, and to workers who might be subjected to the strain of the elevator muscles, but observations from every coalfield in England now go to prove that the disease is found to a large extent among other workers in the pit—timberers and datallers, roadmen, as well as those employed in other occupations. In the Forest of Dean and in Somerset, owing to the thin seams of coal, the collier is obliged to assume a more or less reclining position, and if Snell's theory be correct one would imagine nystagmus to be very common in these coalfields, but, as I have already stated, it practically does not exist. On the other hand, according to Elworthy the great majority of the colliers in Ebbw Vale work in the upright position, and nystagmus exists in a considerable percentage of the men employed in this district.

There is no doubt that errors of refraction play a most important part in the causation of miners' nystagmus, and injuries to the eye or general injuries to other parts of the body may be the determining factor in the onset of the symptoms. The personal factor in this as well as in all other industrial diseases must be taken into consideration. Certain workers seem to be specially prone to the complaint, and in some instances an undoubted hereditary tendency to the disease has prevailed.

Prognosis.

Speaking generally, if treatment is conscientiously carried out the outlook is quite favourable. Mild cases recover in the course of a few months if the patient be removed from his work underground, but the symptoms in severe cases may not abate for many years, even when the miner has been properly treated and has not worked under adverse conditions. If the symptoms result from an injury to the eye, or if they are associated with an error of refraction or such a condition as cataract or glaucoma, the prognosis is not favourable, and while the correction of refractive errors does a great deal to shorten the course of the disease, still, when the refractive error is of a high degree, even the correction for this defect may not cause speedy recovery.

When neurasthenia is present to any extent the prognosis is less favourable than under any other conditions. There is a great tendency for patients suffering from this neurasthenic type to look on their future in the gloomiest way, and many believe their working days are over. This frame of mind not only keeps alight the general nervous symptoms, but retards the cure of the eye trouble. Marked interference with the visual acuity, the presence of nystagmus in a plane below the horizontal, muscular tremors of the neck and shoulders, ataxic gait, and Romberg's sign must all be regarded as most serious symptoms, and just as a drinking bout or excessive smoking may hasten the onset of symptoms which will prevent the man from working, so over-indulgence will in these respects cause exacerbation of the severity of the complaint.

When a young miner contracts this disease it may be taken that there is some predisposition to it, and a tendency to relapse should he return to work in the mine; in the case of old men the difficulty lies in the slowness of the recovery on account of age and lessened powers of resistance. In all uncomplicated cases, by which I mean those in which there is no permanent injury to the eye such as a corneal opacity or traumatic cataract, the chances of recovery are greater the sooner the man gives up underground work, and some of the worst cases in Llewellyn's experience have occurred in men who have struggled on with their work in spite of the disease.

Mild cases which have apparently recovered may frequently be followed by a relapse if the patients return to their old employment underground, especially when they are employed at the coal face. Even in miners suffering from this disease who do not go back to their work, and when apparently their symptoms have cleared up under treatment, there may be a relapse after influenza or an injury, or, as has already been indicated, after excessive drinking, and in one case I have known a relapse has occurred after going to a kinematograph performance.

Treatment.

The treatment of miners' nystagmus must be considered under two headings: (1) the treatment to be applied to the sufferer, and (2) the preventive measures which may be employed for the purpose of either diminishing the number of cases or eliminating the disease altogether.

With regard to the personal treatment, this will depend entirely upon the severity of the case. In severe cases it is necessary for the man to give up work entirely and to have complete rest. If the examination of the eye shows any refractive error this should be corrected by means of glasses, and in many cases after the patient has become accustomed to the altered conditions under which the muscles of the eye work he obtains some relief, at all events from such subjective symptoms as headaches, giddiness, and nausea, while in some cases these symptoms disappear altogether. Ernest Clarke has pointed out that in neurasthenic cases the correction of small ocular defects is of the greatest importance, and he believes that in many cases the greatest amount of eyestrain results from the smallest error of refraction.

Neurasthenic symptoms must be treated in the ordinary way, and if the patient be suffering from neurasthenia of a marked degree Weir Mitchell treatment should be advised for a period of from four to six weeks. Sufficient attention has not been paid to the application of Weir Mitchell treatment in cases of nystagmus, and the association of miners' nystagmus with neurasthenia has not been sufficiently recognised. As far as I know Weir Mitchell treatment is only properly carried out in England in nursing institutions, or in perhaps one or two hospitals in London devoted exclusively to the treatment of nervous diseases; but in view of the fact that there are many hundreds of coal miners in the different colliery districts of this country incapacitated for work on account of miners' nystagmus associated with neurasthenia, from an economic point of view it is most desirable that arrangements should be made in the hospital centres of colliery districts to provide the best possible treatment in order to bring about speedy recovery. Convalescent cases derive great benefit from change of air, especially at bracing seaside resorts.

In mild cases and in cases which are convalescent a change of employment on the surface may result in great benefit, because the mind is occupied and the patient is not worrying about himself, and, further, the exercise which ordinary manual work necessitates will do a great deal towards improving the nervous condition. Some writers consider that on recovery the miner may be allowed to work in the pit again, and this practice is prevalent to a large extent in all mining districts, but I think to reduce the risk of recurrence it is advisable to place the man at such work that he is less liable to contract the disease than at his previous employment, but if there be any recurrence after this return to different work then the man should never be allowed to work in the pit again.

During illness it is important that the man should lead a well-regulated life. He should keep good hours and should be abstemious with regard to alcohol and tobacco. With regard to medicinal treatment in cases where the nervous symptoms are pronounced, where the appetite is poor and there is sleeplessness, glycerophosphates and bromides may be given with good results, and among the other drugs which have been found to be successful are strychnine and quinine. Romiée has advised the local application to the eye of eserine drops in a 3 per cent. solution three times a day. Atropine has been tried without success. Operative treatment in the form of tenotomy has been recommended in cases of miners' nystagmus, but in every case, as far as I know, in which an operation has been performed, disappointing results have ensued.

Preventive Measures.

Preventive measures may be considered under three headings: (1) Improvement in illumination of the mine; (2) the extension of the use of coal-cutting machines; and (3) efficient ventilation of the workings.

It has been most conclusively proved that defective illumination of the mine is the most important factor in the production of miners' nystagmus, and if the number of cases of this, the most frequently found of all the industrial diseases, is to be reduced we must look to improved illumination and increased candle power of the miners' safety lamp. Every man on his way to and from the face should be compelled to use a shade at the back of his lamp. In many districts where this has been the custom any man omitting the precaution is at once assailed by his fellow workmen. The dancing of the lamps in front is very trying to all, but it is most serious to a man with nystagmus. The number of coal-cutting machines extends considerably every year, and it is to be hoped that this will have its effect in reducing the number of cases of this disease. It is the general opinion of working miners themselves that bad air in the mine is the exciting cause of this disease; whether this be so or not, there is no doubt that bad air has a deleterious effect upon the general condition of the miner, and as we have seen that impaired general health is a predisposing cause of the onset of the disease, efficient ventilation in the mine is an important factor in its prevention.

McMurray has suggested that all miners should be subjected to a systematic examination of the eyes, so that cases with any refractive error or with any other ocular defect can be prevented from commencing or continuing this kind of work. Undoubtedly such a procedure would greatly diminish the incidence of nystagmic cases, but I question whether the Miners' Federation would consent to the institution of such an examination, as it would mean at the present time dismissal of thousands of miners who have worked in the pit all their lives, and who are continuing to do regular and efficient work, and further, it would mean the constant elimination at each periodic examination of numbers of workers who would be deprived of their means of livelihood, and with little chance of gaining employment elsewhere unless it were in the ranks of the casual labourer. If, however, a periodic examination were made, and the power of dismissal were prohibited in case of any ocular defects other than miners' nystagmus being discovered, then it has been suggested that the workers be induced to wear spectacles when on the surface in the hope that by the correction of the refractive error the symptoms of the disease will be decreased in severity.

Incapacity for Work.

Miners' nystagmus is essentially an industrial disease. In spite of the various theories for the explanation of the symptoms it cannot be denied that the complaint is one which is a direct result of the conditions under which the miner works, and in view of the fact that it is a disease to which the Workmen's Compensation Act applies, it is important to consider to what extent incapacity for work may result from it.

In the first place, I would point out that there is no necessary relation between the objective and subjective symptoms. Cases where the movements are very slight may be accompanied by distressing headaches, attacks of giddiness, and other subjective symptoms, while well-marked oscillations sometimes may cause no trouble. It is difficult to tell whether a miner suffering from nystagmus is incapacitated from work or not, and Dr. A. R. Moody, of Stoke-on-Trent, when giving evidence before the Departmental Committee on Industrial Diseases in 1907 said that it was almost impossible to distinguish between a coal miner who had oscillation of the eyeballs, but who was able to work, and the miner who had the same symptoms and was incapacitated by it, and the only way that he was able to judge was by the past history of the man; and Professor Murray, in his evidence before the same committee, admitted that it was very difficult to disprove the assertions of a coal miner with the characteristic nystagmic movements of the eyeballs who stated that he was unable to work.

The objective symptoms by themselves may not cause any discomfort or incapacity for work, but when associated with subjective symptoms we may have a case of total incapacity for work. A great deal, however, depends upon the subjective symptoms, for the existence and severity of which we are compelled to trust to the patient's honesty. Meighan has classified the degrees of incapacity for work under three headings:—

1. Those slightly affected—men who suffer to a slight extent from the characteristic oscillations of the eyeballs—especially when they assume positions that strain the muscles of the eye. These men continue work and never become incapacitated. He believes that 5 per cent. of all miners are affected slightly. 2. Those who suffer from the oscillations and feel giddy at times. These should be obliged to leave off the work in which they are engaged. They may require a rest for six months, but should not return to their old employment. 3. Those who suffer badly from oscillations, headaches, giddiness, and other symptoms mentioned previously. These should give up underground work entirely and never return to it.

When the large proportion of underground workers in whom nystagmic movements of the eye can be observed is remembered it cannot be doubted that the disease may cause little inconvenience, but cases of a severe and distressing nature cause total incapacity for work for a considerable period of time. In some instances patients have been unable to do any kind of work, even light work on the surface of the mine, for several years.

It is most important that firemen and deputies who have suffered from this disease should be able to detect the warning blue cap over the flame of the safety lamp before they are allowed to return to their own employment, and it has been suggested that, considering the great responsibility that rests upon them for the safety of the pit, if they have once had the disease and been incapacitated on account of it, they should have their eyes tested once in every three months.

Complete incapacity for work undoubtedly may occur in cases in which nystagmus is absent or has disappeared, but in which clonic spasm and other subjective symptoms of miners' nystagmus are complained of. Giddiness is the most troublesome subjective symptom from the point of view of capacity for work, and even when the other symptoms, whether they be subjective or objective, are only slight, if attacks of giddiness are at all frequent, and come on without any warning, then the patient must be regarded as totally incapable of work, and it is not safe to give him light work, even on the surface of the mine. The capacity for work after a proper course of treatment will undoubtedly depend upon the actual condition of the eye, and one-eyed men who suffer to any pronounced extent from this disease must be regarded as totally and permanently incapacitated for work underground.

Cases of miners' nystagmus in which neurasthenia is a prominent symptom must be regarded as of a severe type, and although the eye symptoms may be not of a pronounced character the nervous symptoms are such as to cause total disability for work. Like all other neurasthenic conditions, this may last for years, unless the patient undergoes a suitable course of treatment, such as prescribed by Weir Mitchell.

Malingering.

All observers are agreed that it is impossible to imitate the nystagmic movements of the eye, so that there can be no malingering with regard to this, the most prominent objective symptom. There is a difference of opinion as to whether clonic spasm of the eyelids can be simulated or not, but careful observation in any given case will easily detect malingering, as it is impossible for the patient to sustain, but for a minute or so, the twitching of the eyelids, and further, the voluntary movements which are induced by a malingerer are altogether different from those which are seen in true cases of clonic spasm of the eyelids. Dr. Moody has pointed out that the movements in the latter case are quicker and finer, and if a miner attempts voluntarily to blink his eyelids quickly he must bring other muscles into play apart from those which actually blink the eyes, and in Dr. Moody's opinion the man will be easily found out. It should be clearly and widely known among all miners who may imagine that the simulation of this symptom is an easy matter that they are entirely mistaken, and that if they try it on before a skilled observer they will be almost immediately found out. We may therefore say that the two principal objective symptoms cannot be simulated, and if a man be known to have attacks of giddiness and to fall about, to be suffering from night-blindness, and, when tested by Cridland's method, from a diminished field of vision, there can be no question as to the genuineness of the case.

The only difficulty may arise in mild cases, where patients are capable of following some kind of employment, such as light work on the surface or in an occupation independent of coal-mining. In many cases miners with a definite oscillation of the eyeballs are able to do their work without any complaint for years in the absence of headache, dizziness, and other subjective symptoms; but if a miner suffering from such a mild degree of the disease suddenly becomes aware of the presence of nystagmus should he, for the purpose of claiming compensation under the Workmen's Compensation Act, desire to make complaints of headache, giddiness, feelings of sickness, and other symptoms for the existence of which they had to trust to his honesty, it would be most difficult to disprove the statements. The examining doctor would have to take into consideration the man's record for work and his demeanour while under observation, and assistance might be given by friends and neighbours who could testify one way or another as to the man's general state of health. In dealing with such cases it is absolutely necessary to make a complete examination of the man and a special examination of his eyes. I believe that a great deal of help can be obtained by paying special attention to the extent to which the field of vision is limited.

There are undoubtedly many cases of miners who know that they are suffering from miners' nystagmus, but who go on working in spite of the complaint, and it is only when they give up work, either on account of bad trade, or a strike, or because of some quarrel with an official or their employer, that they make a claim for compensation. During the coal strike of 1912 many such cases were recorded in different coal districts of this country. In all disputed cases I would suggest that the medical referee under the Workmen's Compensation Act should rely, not only upon his own examination and the reports submitted to him by the medical advisers of the workmen and the employers, but that he also take into consideration either verbal or written statements of workpeople or other persons who can speak as to the man's previous history and his general condition of health.

LECTURE V.

[The fifth and last Milroy lecture dealt particularly with the conditions found among miners, and known as beat hand, beat knee, beat elbow, and beat buttock, and with the relationship between these industrial affections and the Workmen's Compensation Act. After referring to tenosynovitis about the wrist and miners' itch or rash, the lecturer brought his task to a close with a survey of the effect upon the health of miners which has been produced by changes in the laws affecting their industry.]

THE INFLUENCE OF LEGISLATION UPON THE HEALTH OF MINERS.

From the time that coal-mining came to be recognised as an industry in this country laws were passed to regulate it, but they had special reference to the possession of mining property and for the protection of owners against the violence of their workpeople, and it was not until the year 1842 that any legislation was passed that had a direct bearing upon the health of those employed. In this year the employment of female labour underground was forbidden, and regulations were made to improve the conditions of the boys who were engaged in underground workings. From this time onwards many Acts of Parliament have been passed with the object of improving the conditions of labour and in this way bettering the health of the workers. In 1850 the law provided for the inspection of coal mines; inspectors were appointed by the Home Secretary, and were given power to enter and inspect the works of any colliery, both above and below ground, and to inquire into all matters relating to the safety of the persons employed. For the first time it was made necessary that notices of accident causing loss of life should be sent within 24 hours to the Home Office, and it was made incumbent upon the owners of pits to provide proper plans of the workings and to maintain them in an accurate condition. Subsequent legislation provided for improved ventilation of the workings and that all pits should have two exits.

The laws with regard to the regulation of coal mines were revised and consolidated in the Coal Mines Regulation Act, 1911, which makes special provisions for increased protection for the workmen by a more systematic method of timbering, by regulations which control the use of electricity in the mines, the use of explosives and the methods of firing shots, and mitigate the risk of haulage and shaft accidents. Provision is also made for improved ventilation in the mine; working places where firedamp is present to a greater extent than 2·5 per cent. are deemed to be dangerous, and it is not permissible for men to be employed in an atmosphere charged with firedamp to this extent. Steps have to be taken for the prevention of coal dust. It is now necessary for all colliery owners to provide a sufficient supply of ambulance requisites at convenient places in the mine, and the organisation of rescue brigades is compulsory in all the colliery districts, not only for the purpose of saving life in cases of explosions, but in recovering the bodies and helping to put into proper order working places that have been destroyed by the explosion. Facilities have been increased for investigating a mine after an explosion owing to the fact that it is now incumbent upon colliery proprietors to be able to reverse the ventilating current by means of their machinery on the surface. It is now also necessary for coal-owners to provide proper sanitary conveniences for the use of the men near the pit bottom and at central places along the roadways, and a clause in the Act enables the workpeople to be provided with baths and washing accommodation on the surface, the cost being defrayed jointly by the employers and the workmen.

The time has yet been too short to appraise the benefits of this Act of Parliament, but as far as legislation goes it is certainly a great step in the right direction. But the occurrence of accidents and the prevalence of disease peculiar to the coal miner do not depend altogether on conditions legislation can effect. The long death roll year by year and the tremendous number of non-fatal accidents are in some instances, perhaps a large number, due to the fact that the human factor enters into these occurrences. Just as it is impossible to free a nation from drunkenness by Act of Parliament, so it is, and will be, impossible to free the collier's life from risk of injury. Carelessness or callousness on the part of either the workman or his employer may result in the greatest disasters, and it is a significant fact that if the number of deaths and non-fatal accidents be estimated, not as a percentage of the total number employed, but in relation to each million tons of coal brought to the surface, we find that in the last 10 or 12 years no improvement has taken place in this respect.

Suggested Measures.

Time will show what effect the Act will have upon the health of the miners, but even if the results are as disappointing in the future as they have been in the past, we should not regard ourselves as at the end of our resources. Something must still be done to reduce the yearly death roll and the large number of non-fatal injuries. It might be necessary to have a more thorough and systematic inspection of mines in order that all the provisions which have been made with the object of diminishing these accidents should be strictly observed so as to reduce the number of falls of roof, haulage accidents, and the various other accidents which at the present time are regarded as incidental to the miner's daily work, and to see that the law is carried out to the very letter.

It may be necessary to consider whether the modern mining engineer, who has the sole management and control of any given pit, is sufficiently trained in modern scientific methods to deal with all the problems with which he may be brought into daily contact. Medical men are inclined to believe that their own profession covers as much ground in the realms of knowledge as any of the other learned professions, if not more; but the mining engineer is daily brought in contact with problems of geology, of chemistry, of physics, of engineering, of electricity, as well as of the commercial side of his business. Perhaps the time has come for the heads of the mining profession to realise that specialisation in mining may be the means, not only of working the pits to a greater financial benefit, but also of diminishing to a very large extent the number of injuries which daily take place. Greater advantages should be taken of the facilities for special training given at such Universities as Birmingham and Sheffield, and it seems incredible that, in view of the importance of the profession of mining engineering, comparatively so few students pass through these institutions for the purposes of graduation, although I am happy to say that the numbers now increase year by year.

We have seen that the only hope of diminishing the number of cases of miners' nystagmus is by improving the illumination of the mines, and in my opinion it should be obligatory on colliery owners to supply better illumination along the roadways and at the working face so that the incidence of this disease in the future shall be materially diminished. Expense will be undoubtedly incurred by the inauguration, say, of electrical lamps in addition to the ordinary safety lamp, but I am confident that the owner will be well repaid for his money, not only by the improved health conditions of the workers, but also because the men will be able to see what they are doing, and it is obvious that they can do their work very much better in a good light than in the wretched light to which they are subject at the present time.

Great Britain is the only European country in which there is no legislation to regulate the temperature at which men work in coal mines, and I think that this country should be brought into line with the other principal European countries, and employment forbidden in workings where the wet-bulb thermometer reading is so high as to be injurious to health. I am not going to lay down what the limit shall be. That should be a matter for full consideration, but when we realise that the Lancashire weaver, the Staffordshire potter, and the colliers in France, Germany, and Belgium are protected against working in temperatures recognised to be injurious to the health, I do not think it is unreasonable to suggest that legislation should do at least as much for the coal miner in this country.

I believe that the law should provide for a compulsory medical examination of all applicants for work in mines who have been in the tropics or in the colonies, or who have worked in European mines, or even in the tin mines of Cornwall, where ankylostomiasis may prevail. It is only from such sources that the coal mines of this country can be infected, and every means should be taken to prevent any infection ever occurring.

CONCLUSION.

So much for legislation. Something further can be done, and that by the medical profession. It seems strange that industrial diseases should have been neglected in the medical schools of this country and by the vast majority of the leaders of the profession, and that the researches in this branch of medical science have been left to individual effort. There are thousands of medical men working in the industrial districts of England who have never received any training in the medical schools on the diseases which they may be called upon at a moment's notice to diagnose and to treat. Young medical men who go straight from the hospitals to practise in these districts undoubtedly fail in many instances to realise what these industrial diseases are, and their experience, the experience of all medical men in those districts, is gained at the expense of the patient. I think that a great deal could be done to improve the health conditions of coal miners, and other workers too, if instruction were given at the universities and medical schools in this important branch of medical science. When we think of the tens of thousands of pounds that have been expended in this country upon tropical diseases (with very good results) we cannot but realise how industrial diseases have been neglected, and feel how imperative it is that this matter should have greater attention, and that young men who know that they are going to practise in these industrial districts should have opportunities of making themselves conversant with those diseases and conditions with which they will be brought into daily contact.

MEDITATIONS ON 1000 CONSECUTIVE ABDOMINAL OPERATIONS AT THE PRINCE OF WALES'S GENERAL HOSPITAL, TOTTENHAM.[1]

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IN October, 1913, I did my 1000th abdominal operation at the Prince of Wales's General Hospital; and it has seemed to me that some useful and interesting information might be derived from a study of these cases. To present an exhaustive report upon them would carry me far beyond the limits suitable for this paper, and I have therefore chosen to offer you some reflections or meditations on certain practical matters and to place before you a few figures derived from an analysis of the cases. The following is an analytical table showing the nature and number of the various operations:—

TABLE I.

Nature of operation.	1st 500.			2nd 500.			Total.		
	Number of cases.	Number of deaths.	Per cent. mortality.	Number of cases.	Number of deaths.	Per cent. mortality.	Number of cases.	Number of deaths.	Per cent. mortality.
Ovariotomy	82	3	3·6	83	3	3·6	165	6	3·6
Salpingo-oöphorectomy for tubal disease	94	6	6·4	60	6	10·0	154	12	7·8
Salpingo-oöphorectomy for extra-uterine pregnancy ...	39	1	2·5	26	0	0	65	1	1·5
Hysterectomy for fibroids ...	92	4	4·3	116	3	2·5	208	7	3·3
,, ,, carcinoma	11	1	9·1	26	0	0	37	1	2·7
Myomectomy	18	0	0	12	0	0	30	0	0
Hysteropexy for displacements	99	2	2·0	123	1	0·8	222	3	1·6
Total gynæcological operations	435	17	3·9	446	13	2·9	881	30	3·4
Exploratory cœliotomy (carcinoma)	16	2	12·5	10	1	10·0	26	3	11·5
Exploratory cœliotomy (inflammatory)	15	3	20·0	9	0	0	24	3	12·5
Bowel operations	15	1	6·6	9	1	11·1	24	2	8·3
Kidney operations	2	0	0	0	0	0	2	0	0
Radical cure of scar hernia ...	14	0	0	19	0	0	33	0	0
Miscellaneous operations ...	3	3	100	7	2	28·5	10	5	50·0
Total non-gynæcological operations	65	9	13·8	54	4	7·4	119	13	10·9
Total operations	500	26	5·2	500	17	3·4	1000	43	4.3

To show the way in which the work has steadily increased and the results have steadily improved I will give the figures for successive two-yearly periods from the time when the department was founded to the end of 1913.

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[1] A paper read at the North-East London Clinical Society on March 5th, 1914.

	Cases.	Deaths.	Percentage mortality.
1900–1	38	2	5·2
1902–3	100	8	8 0
1904–5	122	9	7·3
1906–7	107	3	2·8
1908–9	207	8	3·8
1910–11	232	9	3 8
1912–13	219	4	1·8

Chart I. shows these figures in a graphic fashion. In the first seven years there were 305 cases with 20 deaths, a mortality of 6·5 per cent. In the last seven years there were 720 cases with 23 deaths, a mortality of 3·2 per cent.

Mortality of Abdominal Operations.

Our first meditation may very well be on this important subject. The table of cases shows that there was a marked drop in the mortality of the last 500 as compared with the first 500, the percentage being 3·4 in the later series and 5·2 in the earlier. The improvement may be attributed to three principal causes:—

1. The personal factor of experience. It is not necessary to emphasise this because it is self-evident; nor can any credit be claimed for it because the irreducible minimum required of a man is that his work should improve with increasing experience.

2. A higher standard of asepsis. With succeeding years we have come nearer to the ideal standard; and when I say "we" I include not only the operator and assistant but also the nursing staff in the theatre and in the wards. I venture to say that the better results of late years are in some measure due to the scrupulous care exercised by the theatre sister in carrying out the sterilising work of the hospital and to the devoted care of the sisters of my ward. Another factor in the improvement of asepsis has undoubtedly been the building of the present operating theatre with its more adequate sterilising equipment. Some of you may remember the old theatre with its dust-collecting rafters and its unhygienic walls. The first operation in the new theatre was performed by Dr. Hooper May on June 1st, 1906. If we divide the operations under consideration into two groups, the first from 1900 to June, 1906, and the second from the latter date to the end of 1913, we have these rather significant figures. Before June 1st, 1906, 282 cases, 20 deaths; mortality, 7·1 per cent. After June 1st, 1906, 743 cases, 23 deaths; mortality, 3·1 per cent. I do not claim, of course, that the new theatre alone brought about a saving of 4 per cent. in the mortality, but I feel certain that it contributed to this good result.

3. Improved technique. Year by year sees some improvement in this direction, and the sum of small improvements would make a striking total if it could be appraised. I will mention only two, which have, in my opinion, had a very beneficial effect. The first is the systematic use of gloves during operations. There is no doubt that formerly the presence of a septic case, either in the course of a day's operating or even in the wards, was a source of grave danger to other cases; infection was probably carried by the hands in spite of careful washing and disinfecting. Even now I should put off an operation of election following a case that had unexpectedly proved septic; but an operation of urgency could be undertaken in these circumstances with little fear of bad results. The second point of technique is the introduction of the iodine method for the preparation of the skin in the area of the operation. If this has not directly affected the mortality I feel sure that it has lessened the tendency to post-operative febrile conditions. I may add that the expense of gloves has been amply justified, not only from the point of view of humanity but also from that of economy, because cases do not suppurate as they did formerly, and therefore there has been a great saving in the cost of dressings.

A few words as to the mortality of individual groups of cases. In the table I have divided the operations into two main classes, the gynæcological and the non-gynæcological, the latter coming partly into the domain of general surgery. Here one cannot expect such good results, because the cases include dangerous acute conditions and inoperable carcinoma, and it will be seen that the mortality of this class is 10·9 per cent. for 119 cases. In the gynæcological class the mortality is 3·4 per cent. for 881 cases, and here it will be observed that the group of cases with the highest mortality is that of tubal disease, where it is 7·8 per cent. Many of these cases are, of course, septic to start with. Ovariotomy and hysterectomy for fibroids both show a mortality of something over 3 per cent.; 20 years ago hysterectomy had a much higher mortality than ovariotomy; now its mortality is rather less, and in the later series of 116 cases it was 2·5 per cent. We may expect the mortality of hysterectomy to improve still further, and in support of this view I may mention that there has been only one death in the last 100 cases at the hospital. It is likely that the mortality of ovariotomy will not diminish to the same extent, because the complications of ovarian tumours are liable to be even more inherently dangerous than those of fibroids; moreover, the group of ovariotomy includes some cases of ovarian carcinoma where the operation proves to be of a desperate character, and is only carried through because the removal of the growth offers at least a small chance of life, whilst the alternative to removal means certain death. Extra-uterine pregnancy shows one fatal case out of 65, a result that is very gratifying when we reflect that without operation a large number of these unfortunate women would be doomed to speedy and certain death. Hysterectomy for carcinoma shows a mortality which is perhaps as low as one can expect in view of the formidable character of some of these operations. All the cases of Wertheim's operation of carcinoma of the cervix recovered. Myomectomy had, happily, no mortality. With hysteropexy the mortality should certainly be *nil;* two cases succumbed to pneumonia, and one to an acute oral sepsis. I shall refer to the mortality again in speaking of individual groups.

Age-Incidence.

A study of the ages of patients in different groups brings out some points of interest. I have analysed the ages in 847 cases where the data were available, and the results are shown in Table II.

The graphic method of expressing figures is always more striking and convincing than the tabular method, and I have constructed Chart II. to bring out the facts in the above table. In each group the cases were divided into five equal sections according to their age, and the average age in each

TABLE II.—*Showing the Ages of Patients in Different Operation Groups.*

—	Ovariotomy.		Tubal disease.		Tubal pregnancy.		Myomectomy.		Hysterectomy, fibroids.		Carcinoma cervix.		Carcinoma body.		Hysteropexy, retroversion		Hysteropexy, procidentia.	
	Cases.	Per cent.	Cases.	Per cent.	Cases.	Per cent.	Cases.	Per cent.	Cases.	Per cent.	Cases.	Per cent.	Cases.	Per cent.	Cases.	Per cent.	Cases.	Per cent.
Under 20	5	3·0	5	3·9	—	—	—	—	—	—	—	—	—	—	2	2·0	1	0·8
20–29	32	19·4	46	36 0	33	50·8	2	6·7	2	1·0	1	6 0	—	—	42	42·0	12	9·8
30–39	60	36·3	58	45·3	28	43·1	13	43·3	48	24·0	4	23·5	—	—	42	42·0	44	36·1
40–49	38	23·0	19	14·8	4	6·1	12	40	113	56·5	4	23·5	5	25·0	14	14·0	34	28·0
50–59	21	12·8	—	—	—	—	1	3·3	32	16·0	5	29·4	8	40·0	—	—	18	14·7
60 and over	9	5·5	—	—	—	—	2	6·7	5	2·5	3	17·6	7	35·0	—	—	13	10·6
Total	165	100·0	128	100·0	65	100·0	30	100·0	200	100·0	17	100·0	20	100·0	100	100·0	122	100·0
Average age	39		32		30		40		44		48		55		32		42	

section was ascertained. Thus in the ovariotomy group, with 165 cases, the average age of the 35 youngest is given in Section 1; the average age of the next 35 youngest is given in Section 2; and so for each section. In the group of hysterectomy for fibroids each section has 40 cases; in the group of carcinoma of the body of the uterus each section has only 4 cases.

It will be seen that there is a good deal of variation in the range of ages; thus ovariotomy and hysteropexy for procidentia show a difference of 31 years between the youngest average and the oldest. The actual range of ovariotomy was from 9 years, the youngest, to 68 the oldest—that is, a range of 59 years. That of hysteropexy for procidentia was from 19 to 69, a range of 50 years. The range of carcinoma of the cervix is 31 years on the averages; actually it was 53 years, the youngest being 28 and the oldest 81. Carcinoma of the body has a definitely smaller range than carcinoma of the cervix, and the age rules higher. It is a striking fact that carcinoma of the uterus commencing after the menopause is much more likely to attack the body of the uterus; but when it commences in the child-bearing period it is much more likely to attack the cervix. Incidentally I may remark that the younger the patient the worse the prognosis; and this for two reasons. The first is the fact just brought out, that cervical carcinoma occurs on the average in younger women than body carcinoma; and the chance of recurrence is much less in the latter group. The second reason is that carcinoma of the cervix is apt to run a more rapid course in younger women, and recurrence is more liable to occur in their case.

Extra-uterine pregnancy shows the youngest age-line, its incidence being necessarily within the child-bearing period. Only 4 cases out of 65 were over 40, and 60 per cent. of the cases ranged from 23 to 27. Tubal inflammatory disease is another group with a low age-incidence; this group also coincides with the child-bearing period, and 40 per cent. of the cases were under 30. This point has more than an academic interest; the significance of it is that gonorrhœa, which is responsible for about 95 per cent. of cases of tubal disease, attacks young women usually either before or just after marriage; many cases no doubt clear up, and the patient is able to become pregnant subsequently, but in many others, as shown by the 154 cases of tubal disease operated upon, the disease spreads up to the tubes and the woman's chances of child-bearing are irretrievably destroyed. Some of these women die from septic infection, and, as we have seen, this group is attended by a heavier operative mortality than any other. Nevertheless, operation restores many of them to health, but it does not bring about the fulfilment of their dreams of happy motherhood; it does not restore that married happiness which the presence of children in the home alone can bring; it does not prevent the declining birth-rate, of which gonorrhœa is so important a factor, and the consequent loss of citizens to the State. These considerations are well worthy of the careful attention of those who are earnestly endeavouring to wage an effectual fight against venereal disease; and whilst the common sense of the British race will probably save us from fantastic legislation on eugenic marriages, we may yet hope that an enlightened public opinion will bring about two important measures for the prevention of the spread of disease. The first is the proper control of those great disseminators of disease, the public prostitutes; and the second is the development of such a sense of honour that no man who has contracted any disease will contemplate marriage until he can be assured by a competent medical authority that it is safe for him to do so. Further, if the parents or guardians of girls who are about to marry were to take such a serious view of their responsibilities that they exacted from the prospective bridegroom a satisfactory assurance, backed up if necessary by authoritative medical opinion, of his freedom from venereal disease, such a precaution could not be regarded as quixotic.

The age-incidence of fibroid tumours is fairly wide, though not so wide as that of ovarian tumours. The youngest section averaged 33 years of age; the oldest averaged 56. The youngest patient in this series was 28, and the oldest 65. Retroversion of the uterus has much the same age-range as tubal disease; and unless complicated by prolapse or procidentia it does not occur after the menopause, or at least does not cause symptoms calling for operative treatment.

Observations on Individual Groups.

Ovariotomy.—165 cases, 6 deaths, mortality 3·6 per cent. Every kind of ovarian tumour was met with in these cases: multilocular cystic adenoma; papilloma; dermoid, unilateral and bilateral, and including some of the relatively rare cases of dermoid contents in multilocular tumours; parovarian cyst; blood cyst (lutein hæmatoma);

CHART I.

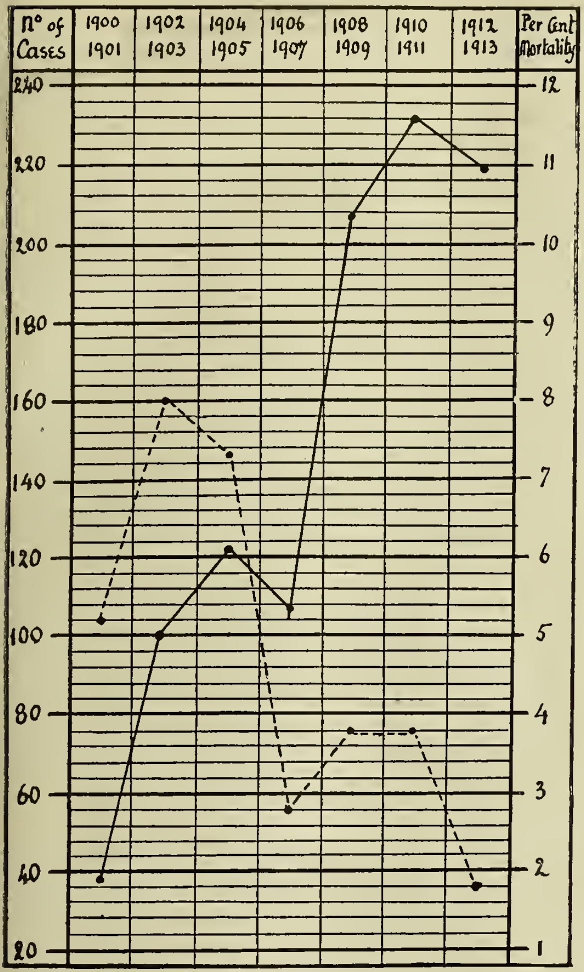


Chart showing abdominal operations (continuous line) and mortality (interrupted line) for 14 years at the Prince of Wales's Hospital, Tottenham. Cases presented in two-yearly periods.

CHART II.

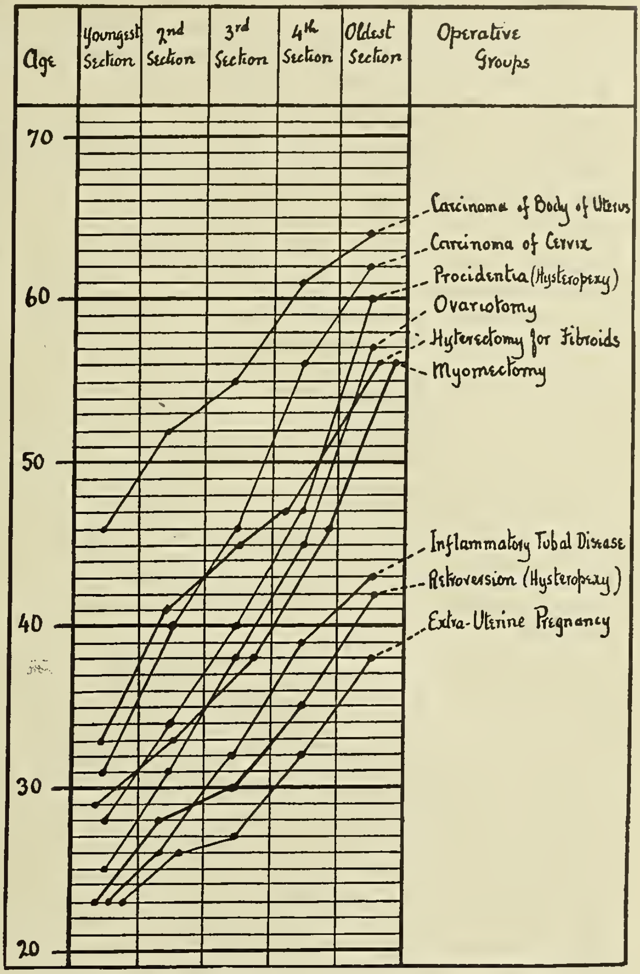
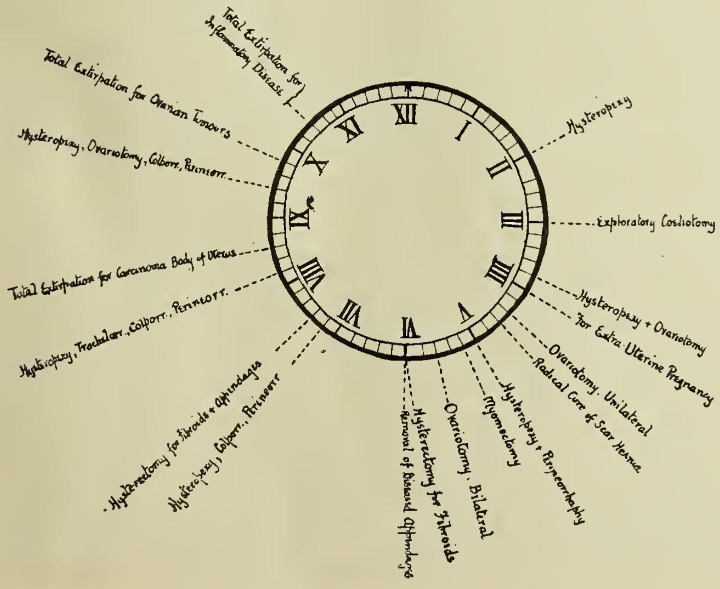


Chart showing ages of patients in various groups of operations. In each group cases are divided into five sections by age, average age in each section being shown.

CHART III.



An "operation clock" constructed on a graphic representation of the figures given in Table III. Wertheim's operation, hysterectomy for carcinoma of the cervix, is off the clock, the average time occupied being over an hour and a quarter. The two operations coming next in length are, as might be expected, total extirpation for inflammatory disease (52 minutes) and total extirpation for ovarian tumours (49 minutes). At the other end of the scale a simple hysteropexy averages 10 minutes, and exploratory cœliotomy (which often includes the swabbing out of quantities of fluid) 15 minutes. Other operations occupy an intermediate position.

fibroma; carcinoma; and sarcoma. There were a good many cases with acute symptoms due to twisted pedicle, and several with rupture of the cyst. Many large tumours were met with varying from 10 to 15 lb. and some even larger, in patients of widely varying ages; thus a woman, aged 57 years, had a tumour of 20 lb.; two women, aged 37 and 38, had tumours of 19 lb.; a girl, aged 19, had one of 16 lb.; a girl, aged 17, had a tumour of 15 lb; and another of the same age had the largest tumour of all, weighing 31 lb. Without exception, these large tumours have been removed entire. My reason is the danger entailed by puncture, either from the presence of irritating fluid in the peritoneal cavity, or from the possible dissemination of papillomatous or malignant growths. I have a melancholy recollection of a case at the Chelsea Hospital for Women where a tumour, apparently an innocent multilocular cyst, ruptured during removal, and the patient succumbed within a few months to a rapidly growing malignant papilloma in the abdomen. I do not consider that the long incision required is a serious drawback; it certainly does not predispose to hernia, for although I have had a number of cases of scar hernia, not one of them has occurred with a long incision. In 8 cases ovariotomy was undertaken during pregnancy, without disturbance of the pregnancy in any of them.

The deaths after ovariotomy were as follows: A single woman aged 41. Came in with ruptured ovarian cyst; 18 pints of viscid fluid in the peritoneal cavity. Death from peritonitis, which was already present at the time of the operation. A married woman aged 34; double ovarian dermoid. On the tenth day, which was a visiting day, she was talking to her husband, in good spirits, when she was suddenly seized with pulmonary embolism and died in half an hour. A little girl aged 9; double ovarian sarcoma. The operation was an extensive and formidable one; death from shock. A married woman aged 52; suppurating and infected dermoid; death from sepsis. A married woman aged 27, and another aged 42; both cases of extensive ovarian adeno-carcinoma; both succumbed to shock.

Tubal inflammatory disease.—These cases varied from simple salpingo-oöphoritis with occlusion of the tubal ostium, and hydrosalpinx to pyosalpinx of the most acute type. Several were cases of tuberculous pyosalpinx; one of them, who had also tuberculous disease of the spine, succumbed to a rapidly active tuberculosis. Another left the hospital apparently fairly well, but she died from rapid miliary tuberculosis shortly after. I have been led to give a guarded prognosis in cases of tuberculous pyosalpinx, because although most of them do very well and get quite cured, now and then the operation seems to light up a relatively dormant systemic tuberculosis, and the patient may die quickly. In several cases a pyosalpinx that had evidently been present during pregnancy became active as the result of anatomical disturbances during labour, and simulated puerperal septicæmia; one remarkable case of this type came in with an acute left pyosalpinx two weeks after delivery, and on opening the abdomen I found a septic thrombosis of the left ovarian vein, which I dissected up for about 4 inches. She died from sepsis some days later. Altogether, of the 12 deaths in this group of cases, eight were from sepsis; one was the case of tubercle above-mentioned, one died from syncope from a fatty heart, one died on the table at the end of a very severe operation, and one developed maniacal symptoms after the operation, and while she was swallowing a dose of paraldehyde on the eleventh day she died suddenly from getting some of it down her trachea.

Extra-uterine pregnancy.—This group is a specially satisfactory one because many of them were cases of great urgency, where free intra-peritoneal hæmorrhage was diagnosed by the patient's medical attendant, and they were sent in to the hospital without delay and operated upon with all possible speed. But for prompt recognition many of these patients would have died, and I take this opportunity of paying a well-deserved tribute to the practitioners concerned. In one such case Mr. Reginald Brown took me away from the annual garden party of this society on July 4th, 1912, to see a patient at Stamford Hill. We carried her down into my car and brought her to the hospital and took her straight up to the theatre, and the operation was finished in a little over an hour from the time of our seeing her together. The one fatal case in this group was one that made a great impression upon me, because I had diagnosed it in the out-patient department as a retroversion of the gravid uterus. I could not replace it, and as I was not satisfied about her I kept her in the hospital. Four days later she had clear signs of internal hæmorrhage and I operated; but she had already bled a great deal, and though she rallied twice after the operation she died from syncope 36 hours after. This was over 10 years ago, and I have always felt since that an early diagnosis might have saved her life.

Hysterectomy for fibroids.—In this group I have included for convenience cases of hysterectomy for fibrosis.

1. Waiting for the menopause is an exploded fallacy; it assumes, first, that hæmorrhage is the only grave symptom of fibroids, overlooking the important symptoms of pain, visceral pressure effects, disablement, and general weakness; and, secondly, that most fibroids shrink or cease to give trouble after the menopause, which is far from being the case. As a matter of fact, out of 575 abdominal operations for fibroids, up to last July, no fewer than 104, or 18 per cent., required operation after the age of 50; and as fibroids may occur in young women some of them would have to wait 10 to 30 years for the menopause.

2. Early operation in young women will often allow of a conservative myomectomy, when delay necessitates hysterectomy.

3. Fibroids are attended by many pelvic complications. No fewer than 70 per cent. had complications of some kind, and there were dangerous complications in 30 per cent.

4. Diagnosis is not infallible, and I have met with many cases where fibroids were diagnosed, and at the time of operation some serious condition such as ovarian tumours or carcinoma was discovered, either by itself or in addition to fibroids.

5. The argument for delay based on the danger of operation, which had great weight when the operative mortality was very high, falls to the ground now that the mortality has fallen to 2 or 3 per cent., and it is now permissible and even, as I think, advisable to recommend operation for the relief of suffering and disablement, whereas formerly operation was only justifiable for the saving of life.

Fibroids in certain positions, such as cervix and broad ligament fibroids, used to cause us great difficulty and anxiety; although such operations are still difficult ones they have become much simpler since we have understood the plan of incising the peritoneum over the tumour and shelling this out more or less completely. This procedure allows us to lift the tumour out of the pelvis and to reach the uterine vessels with comparative ease.

Fibrosis is a condition that was very little understood until recent years, and even now its pathology is not quite clear. It is a condition in which the normal musculature of the uterus is largely replaced by fibrous tissue; consequently the contractile power of the uterus, which is such a potent factor in arresting hæmorrhage, is practically lost, and drugs cease to have any influence in promoting such contraction. At the same time the mucosa of the uterus becomes atrophic. The typical fibrotic uterus is usually small; on section its walls are hard and fibrous and hardly any mucosa is seen. Curetting, of course, has no effect, as practically nothing comes away with the curette; and, indeed, the failure of this operation is sometimes the feature of the case that leads to a correct diagnosis. Such a uterus is quite useless, and hysterectomy gives brilliant results in the restoration of these patients to health.

Of the 7 fatal cases 2 died from sepsis, one in 1901 and 1 in 1906. I need hardly say that at the present day we should regard these as preventable deaths. Two died from heart failure, one 15 hours after operation, the other on the seventh day. This will always remain a source of anxiety with patients who have lost a great deal of blood, because with many of them one cannot delay the operation to allow them to recuperate because of the danger of a return of perhaps even severer hæmorrhage. One died from broncho-pneumonia on the fourth day. From time to time I have lost several patients from this cause; and meditation thereon has led me to a much greater caution in operating on patients with chest symptoms. When there is any tendency to bronchial trouble I always postpone the operation, even at the risk of causing the patient great disappointment; but, as I tell them, it is much better to disappoint them than to expose them to an unnecessary danger. One case died from pulmonary embolism on the twelfth day; this is one of the dangers of which at present we have no forewarning, and therefore we are not able to guard against it. Fortunately it is not very common, but I had two deaths from this cause among my 1000 cases. The last death was from secondary hæmorrhage, in a very remarkable case. At the time of operation the large fibroid uterus had an attachment, an inch in diameter, to what appeared to be an enormously enlarged liver; the secondary hæmorrhage was from this site, and at the necropsy the large mass proved to be a huge pedunculated fibroid, with intimate vascular attachments to the transverse colon.

Hysterectomy for carcinoma.—The experience of these cases has led me to the conclusion that the most favourable position in the body in which carcinoma can occur is the body of the uterus, because recurrence after hysterectomy for such a condition is exceedingly rare. On the other hand, recurrence is rather distressingly frequent in cases of carcinoma of the cervix, even when the removal is effected by the most radical means at present known—namely, the procedure called "Wertheim's operation." There are two distinct types of carcinoma of the cervix: one is the so-called epithelioma which arises on the vaginal aspect of the cervix in the squamous epithelium, and when extensive gives the appearance described as a "cauliflower growth." If the growth has not invaded the vaginal walls to any great extent, complete removal is relatively easy and the prognosis is correspondingly good. The other type is the glandular carcinoma, which arises in the cervical glands; it is a treacherous condition, because it is apt to grow extensively within the cervix before it makes its presence known, either by symptoms or by physical signs; and it is specially prone to invade the base of the bladder and the broad ligaments. Some of these cases lead to great anxiety and responsibility in deciding whether or not one should attempt the radical operation; and the difficulty is accentuated by the fact that one cannot always determine how far the bladder is involved until one opens the abdomen and attempts to strip the bladder down from the cervix. My present view is that in bad cases it is not worth while to attempt a radical operation; the operative risk is greatly increased by the danger of injuring bladder or ureters, and the chances of recurrence within a year are very great. On the other hand, thorough scraping away of the growth, followed by the packing of the cavity with gauze soaked in a saturated solution of chloride of zinc, will often lead to the prolonging of life, in relative comfort, for a year or longer. In all I have done 23 cases of Wertheim's operation, and the fact that they have all recovered [2] does not blind me to the possibility that one may at any time have a death after the operation. The one fatal case in this group was a carcinoma of the body of the uterus; the patient died 48 hours after the operation, and the cause of death, as determined by necropsy, was syncope from fatty heart.

Myomectomy.—This operation is to be regarded as the alternative to hysterectomy in certain cases. Meditation on these cases has led me to formulate the indications for myomectomy briefly as follows.

1. It depends on the position of the tumour. Pedunculated subperitoneal fibroids can usually be dealt with in this way, and some cases of pedunculated intra-uterine fibroids. An intramural fibroid can often be enucleated if desired.

2. It depends on the number of the tumours. When only one is present, and sometimes with only two or three, it may be advisable to do a myomectomy. With multiple fibroids myomectomy only leaves a maimed and useless uterus.

3. It depends on the age of the patient. In a young woman, particularly if she is married and anxious to have children, one may make very special efforts to save the uterus by doing a myomectomy; in older women, and when childbearing is practically out of the question, hysterectomy is nearly always a better operation. There were no deaths in this group.

Hysteropexy.—The best comment that I can make on this group is in the words of Scripture, "By their fruits ye shall know them." From time to time my attitude with regard to these operations has been criticised, and the main criticism has been that I operate too often. I must admit that I am unrepentant, and shall continue to be so as long as the results continue as satisfactory as they have been up to the present time. If patients can be cured of their displacements, whether retroversion, prolapse, or procidentia, by operation; if they can be saved the discomforts and drawbacks of prolonged pessary treatment; if the uterus remains permanently in good position in the vast majority of cases; if the operation in no way interferes with subsequent pregnancy and confinement (and I have now records of 66 confinements to prove this point); if the satisfactory results of operation cannot be obtained by other means; and if I continue to receive from patients and their medical attendants assurances that the patients have experienced the greatest benefit from the operation; and if, finally, I continue to be convinced, as I am at present, that all these suppositions are borne out by experience and by careful study of after-results, so long shall I continue to advocate and to practise the treatment of displacement by operative measures in suitable cases.

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[2] The last case operated upon died from pneumonia five days after the reading of this paper.

Non-gynæcological operations.—Lengthy comment on these cases is unnecessary. Twenty-six of them—namely, the operations on bowel and kidneys—belong to the domain of general surgery; some of these were operated upon with the expectation of finding other conditions; the rest were special cases in which I was interested, and in which I was allowed, by the courtesy of my surgical collegues, to overstep the usual limits of my "sphere of influence." The cases of scar hernia fell naturally to my lot, as having been responsible in most cases for the primary operation. I have already stated that the most important predisposing cause of this troublesome occurrence is long continued drainage; but in many of these cases one is glad enough to save the patient's life at the cost of such a complication. Another predisposing factor is the condition of flabby abdominal walls in very fat women. The cases of exploratory cœliotomy have caused me to meditate sufficiently to supply material for a separate paper; therefore, as I have still several points to refer to, I will not embark on the subject here.

Duration of Operations.

The duration of operations is a matter of some interest. Dr. C. F. Hadfield, who has given anæsthetics on my operation days since Nov. 26th, 1908, has kept a record, for his own use, of the time that patients have been under anæsthetic; and he has kindly allowed me to make an analysis of his notes. The figures are of special value because they represent the results, not of operating against the clock in particular cases, but of ordinary operative work. Dr. Hadfield tells me that the time from the commencement of anæsthesia to the time of the first incision averages about ten minutes; this includes placing the patient in the Trendelenburg position, painting with iodine, and arranging mackintoshes and towels. From Dr. Hadfield's data I have drawn up Table III.

This table can be represented graphically in the form of an "operative clock," which shows at a glance the average time occupied by the various operations. (Chart III.) Wertheim's operation stands out conspicuously as taking, on the average, about 25 minutes longer than any other operation; the next longest operations are total extirpation for inflammatory disease, with an average of 52 minutes, and total extirpation for ovarian tumours, with an average of 49 minutes. Compound operations such as hysteropexy, with ovariotomy or myomectomy, trachelorrhaphy, colporrhaphy, and perineorrhaphy, average from 41 to 47 minutes. Total extirpation for carcinoma of the body of the uterus averages 43 minutes. Hysterectomy for fibroids, with appendage disease, takes 37 minutes, and the ordinary "round trip" of anterior colporrhaphy, perineorrhaphy, and hysteropexy for procidentia takes 36 minutes. All the other operations range from a quarter to half an hour.

Table III.

Natnre of operation.	Number of cases.	Average duration of anæsthesia.	Average duration of operation.	Shortest anæsthesia.	Longest anæsthesia.
		min.	min.	min.	min.
Ovariotomy, single	39	32	22	15	60
,, double	21	38	28	25	90
,, ,, with hysterectomy	4	59	49	45	80
Salpingo-oöphorectomy for tubal inflammation	36	40	30	25	65
Salpingo-oöphorectomy for tubal inflammation with hysterectomy ...	12	62	52	40	90
Salpingo-oöphorectomy for extra-uterine pregnancy...	24	30	20	20	55
Hysterectomy for fibroids	33	40	30	30	55
,, with salpingo-oöphorectomy	71	47	37	30	100
,, for carcinoma of the body of the uterus	17	53	43	30	75
Hysterectomy for carcinoma of the cervix (Wertheim)...	8	86	76	60	100
Myomectomy	4	36	26	25	50
Hysteropexy...	28	20	10	15	25
,, with either ovariotomy or myomectomy	22	29	19	20	65
Hysteropexy with either curetting or perineorrhaphy	14	35	25	25	70
Hysteropexy with anterior colporrhaphy and perineorrhaphy	48	46	36	30	70
Hysteropexy with trachelorrhaphy, colporrhaphy, and perineorrhaphy	13	51	41	35	75
Hysteropexy with ovariotomy or myomectomy, colporrhaphy and perineorrhaphy	4	57	47	55	60
Radical cure of scar hernia	17	33	23	20	50
Exploratory cœliotomy for malignant disease or tuberculous peritonitis ...	12	25	15	15	30
Abdominal operations in general... ...	427	40	30	15	100

To conclude this part of the subject I give the figures for what I regard as the quickest afternoon's work that we have done at Tottenham; I need hardly say that it could not have been done without excellent system and organisation on the part of the nursing staff and highly skilled administration of anæsthetics by Dr. Hadfield. The figures are taken from his notes. April 4th, 1912: 1. Ovariotomy complicating pregnancy; total anæsthesia, 20 minutes. 2. Hysterectomy and double ovariotomy, for fibroid, left ovarian dermoid and right ovarian cyst, 30 minutes. 3. Hysterectomy and double ovariotomy, for cervix fibroid and double hydrosalpinx, 37 minutes. 4. Hysterectomy for fibroid, 30 minutes. 5. Appendicectomy; resection of cyst in ovary, 23 minutes. 6. Hysteropexy, 20 minutes. 7. For extra-uterine pregnancy, 20 minutes. Total of time occupied, 180 minutes. If we take Dr. Hadfield's estimate of an average of 10 minutes for induction of anæsthesia and preparation in each case, it leaves under two hours actual operating for seven abdominal operations.

Drainage in Abdominal Operations.

"To drain or not to drain," that is the question that often exercises the mind. My meditations on this subject, based on the experience which these cases have taught me, may be expressed as follows. It is certain that there are drawbacks in drainage: the patient has the disturbing factor of painful dressings in the early days; convalescence is often delayed by one or more weeks; when the drainage is prolonged there is a marked tendency to the development of scar hernia; last, and in this case least, from the hospital point of view, drainage means a materially increased expenditure on dressings. But there are also drawbacks in not draining in certain cases; thus, in a case with a tendency to oozing or hæmorrhage from adhesion sites there may be a considerable effusion into the peritoneal cavity which may suppurate later; or the effusion may be so great as to cause alarming signs of internal hæmorrhage; in cases of damage to bowel or bladder where there is a possibility of leakage with consequent infection, and in cases already infected at the time of operation, alarming and even rapidly fatal septic poisoning may supervene. Undoubtedly the risks entailed by not draining, when drainage is indicated, are much greater than those incurred by draining when it is not really necessary. Therefore, I would say generally of drainage that it should always be avoided if possible, but in certain cases it is essential, and because the danger in this respect of leaving undone the things that ought to be done is greater than that of doing the things that ought not to be done I would say, "When in doubt, drain." The cases in which I drain are those with a considerable tendency to oozing from adhesion sites; cases in which the peritoneal cavity has been soiled with pus from the rupture of pus-tubes or the presence of an appendix or other abscess in the peritoneal cavity; cases of peritonitis without actual pus formation, when I am doubtful about the degree of virulence of the infection; and cases in which the bowel walls have been much damaged in the process of separating adhesions.

Drainage material.—I feel sure that in some cases a fæcal fistula has resulted from the pressure of a hard drain-tube on damaged bowel; I have therefore quite discarded glass drainage-tubes, and even rubber tubing I use very rarely. I prefer to use gauze; sometimes a narrow wick, when the object is to have a warning of hæmorrhage; sometimes a thicker strip when I want to provide a definite drainage channel. It is true that gauze is not a quite efficient drain; but neither is a tube, which is apt to get blocked up. The important thing, however, is to provide a channel leading to the outside, along which pus would pass as the line of least resistance. To facilitate removal of the gauze I use a piece of split rubber tubing, through which the gauze passes in the abdominal wall. When the drain is used merely as an indicator of oozing, or as a precaution in case of infection, and is not likely to be required longer than a couple of days, I commonly pass a suture which is left long and can be tied if necessary, so as to occlude the drain-track when the gauze is left out.

Improvements in After-treatment.

This is a subject of much practical importance, and I will therefore devote it to my concluding meditations. Formerly patients who had undergone an abdominal operation were not allowed anything to drink for 24 hours; the best they could hope for was the tantalising concession of being allowed to wash out the mouth with a little hot water, some of which they would gladly have swallowed, but they might not. The practice now is to give them as much water as they want as often as they like. There is no doubt that the restriction was quite uncalled for; and though it was well enough intentioned, in effect it was inhumane, adding a superfluous torture which was often more trying than any other effect of the operation. After all, if a patient is sick, it is generally because there are some irritating contents in the stomach; and a good drink of water, even if returned, washes out such contents. Moreover, it is notoriously more distressing to retch with an empty stomach than to bring up fluid. The second improvement is that which relates to position. Formerly patients were kept flat on the back and immobile for as long as a week; now they are propped up quite early, and allowed to have their position changed with reasonable and even, if necessary, with unreasonable frequency. Which of us even in health could endure lying on the back without moving for several consecutive hours? Clearly, for patients who are weak and feeling miserable and in pain, the ordeal is much more severe; it aggravates their pain, it brings about muscular stiffness and aching, and it increases the difficulty of contending with the tendency to flatulence which is so marked after operations, and is specially incidental to the recumbent position. The improvement in the general well-being of patients who have been raised up into a sitting position and moved gently from time to time is most striking.

"Fowler's position," as it is called, means sitting a patient upright, with a bed-rest and a knee-pillow and an arrangement of straps to prevent slipping. It was introduced primarily for the treatment of peritonitis, when it was combined with drainage of the pelvis and with the more or less continuous administration of saline solution by the rectal method. I feel sure that this improvement in treatment has been the direct means of saving many lives, not only in cases of suppurative pelvic conditions in women, but also in the domain of general surgery. It is a matter of great interest to note that it was the introduction of this position for septic cases that led to its adoption after abdominal operations in general. We said: "If septic cases are so much more comfortable sitting up, why should ordinary cases not feel better also?" Ordinary cases are, of course, allowed to lie down from time to time, especially when they are settled for the night; septic cases can be kept sitting up for days together, and they sleep quite comfortably in that position. In fact, if one had to choose between persistently sitting up and persistently lying down, the sitting up entails the less discomfort.

Early attention to the bowels is another improvement. I do not say that this is a modern innovation, because 15 or even 20 years ago there were enlightened surgeons who recognised that the greatest safeguard against sepsis and obstruction was to secure early action of the bowels. But the general recognition of this truth is of more recent date. In cases of threatened sepsis or ileus, one of the most satisfactory plans is the administration of small repeated doses of calomel. A half-grain dose hourly until six doses have been given is usually sufficient; and years ago the gynæcologists of the Birmingham school used to give even smaller doses, such as 1/6th grain hourly. Few cases are apt to give one so much anxiety after abdominal operation as those of threatened obstruction, especially when it comes to the point that one has to consider seriously the question of re-opening the abdomen. There are, of course, cases of definite obstruction, where nothing short of operation will avail, and it behoves one to recognise these cases. But there are others, more on the borderland, that can be treated successfully by other means. Some years ago, in the presence of such a case, I was debating operation; my experience of re-opening for obstruction had not been encouraging, and I decided to try the effect of hot fomentations on the abdomen, gentle abdominal massage, and repeated doses of ergotinine hypodermically, the object being to get the paretic bowel to contract. The effect was most satisfactory. Since that time research has given us even more valuable agents than ergot and its derivatives; first we had adrenalin, and more lately the priceless pituitary extract. When the abdomen is blown up and the patient is suffering intense discomfort and pain, when little or no flatus is being passed and we are getting anxious, pituitary extract given hypodermically and repeated if necessary four-hourly, combined with small repeated doses of calomel and a turpentine enema will nearly always relieve both the patient's distress and our anxieties in quite a short time.

At one time no abdominal operation was considered complete unless it was followed by the wearing of a cumbersome and unwieldy surgical belt. Encased in these atrocities patients eked out a prolonged convalescence for a year, and sometimes for years. Their abdominal muscles remained flabby from disuse, and the only persons who derived a solid advantage from these belts were the makers. A parallel may be found in the ancient practice of keeping fractured limbs encased for months in plaster-of-Paris. Now we recognise that in both cases the essential thing is to get the muscles restored to their proper tone by early use and if necessary by massage. For abdominal cases, especially when the three-layer method is used for sewing up, no kind of belt is really required, particularly since the introduction of the long straight-fronted corset, which gives all the protection that is necessary; but many patients derive comfort from a woven binder, of the type of the so-called "cholera belt," which can be worn for a few months. The final improvement is in encouraging patients to a quick convalescence, instead of keeping them invalids, as can be done only too easily by an injudicious form of suggestion. I recognise, of course, the variability of the personal factor; some patients receive a much more profound mental and physical shock from even a slight abdominal operation than others do after a severe operation; but very much can be done by encouragement and by gentle stimulus along the path of convalescence.

I feel that I shall only be rendering a just tribute if, in concluding this summary of my work at the hospital, I acknowledge with sincere gratitude my indebtedness to my fellow workers who have contributed in so important a degree to such success as has attended that work. The governors of the hospital have always given the most sympathetic help to me and to my colleagues in readily granting our requests for whatever tended to facility in our work and the benefit of our patients. I am indebted to a succession of excellent resident medical officers for help in my operations and for zealous care of the patients afterwards. Several anæsthetists have collaborated with me, and I must express my special thanks to Dr. Hadfield for his most valuable help during the last five and a half years. To Miss Fox and the nurses whom she has trained much more than a formal acknowledgment is due, for I cannot but appreciate the all-important part that good nursing has had in obtaining satisfactory results. To the two sisters who have had charge of my ward since November, 1907, I offer, in all gratitude, this simple statistical tribute: From 1900 to October, 1907, 347 cases, 22 deaths; mortality, 6·3 per cent. November, 1907, to May, 1911, under Miss Ada Simmonds, 387 cases, 14 deaths; mortality, 3·6 per cent. June, 1911, to February, 1914, under Miss Bessie Allen, 314 cases, 9 deaths; mortality, 2·8 per cent.

Upper Wimpole-street, W.

DISEASES OF THE PITUITARY GLAND AND THEIR EFFECT ON THE SHAPE OF THE SELLA TURCICA.[1]

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ANATOMICALLY the pituitary body or hypophysis cerebri consists of two great portions, a glandular anterior lobe and a nervous posterior lobe. Embryologically these two lobes have different origins, the anterior being derived from the epiblast of Rathke's pouch and the posterior from a downgrowth of neuroblast from the region of the third ventricle. Physiologically the anterior and posterior lobes appear to serve different functions, the anterior being related to the general growth of the body and especially of the skeleton, whilst the posterior lobe and its glandular envelope, the pars intermedia, seem to promote the contractility and increase the tone of the plain muscle generally, as well as of the heart, and to excite the activity of certain glands—viz., the kidney and mammary gland (Schäfer). Extracts obtained from the posterior lobe when injected into animals produce changes in the blood pressure, changes in the secretion of the urine and of the mammary gland, and cause contractions of all involuntary muscle, whilst extracts made from the anterior lobe are relatively inactive. By the methods of extirpation of portions of the gland in animals it has been shown that removal of the anterior lobe produces adiposity, accompanied by secondary hypoplasia of the organs of generation in the adult, or by a persistence of sexual infantilism in case the primary hypophyseal deficiency antedates adolescence, and occasionally by polyuria, alterations in the skin and its appendages (such as œdemas and hypotrichosis), and by a tendency to the development of a subnormal temperature and psychic disturbances (Crowe, Cushing, and Homans); whilst the posterior lobe plays a significant rôle in the metabolism of carbohydrates.

The pituitary body lies in the most protected portion of the skull, encased in the bony sella turcica, and in the anterior angle of the optic chiasma. It is separated from the general cranial cavity by a firm fibrous connective-tissue layer, the diaphragma sellæ, a part of the dura mater, which is perforated in its middle to allow of the passage of the infundibular stalk. The most common and most important disorders of the pituitary body are caused by tumour growths arising either in the gland itself or from one of the neighbouring "rests" of the cranio-pharyngeal duct which frequently persists into adult life as an evidence of the double nature of the body itself.

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[1] A paper read before the Electrotherapeutical Section of the Royal Society of Medicine.

Clinically the disorders which arise in consequence of changes in the pituitary body are extremely complex. For disease processes may originate in either lobe without the involvement of the other, or one lobe may be the seat of an adenomatous change and physiologically overactive, and by pressure upon the other lobe may impair its function and cause an underactivity of this part, or the body may be involved secondarily owing to changes elsewhere inside the cranial cavity, or in some one or other of the interrelated organs of internal secretion—e.g., the thyroid or the ovaries.

In practice patients showing features similar to those obtained experimentally in animals are not uncommon. In the course of the last seven months at the London Hospital I have seen some dozen examples of such cases. In these examples the clinical features appear to have been an expression *either* of a deficiency *or* an excess, *or* an alteration in the activities of one or other or both lobes of the body.

Comparing the disorders due to the pituitary body with those met with in the case of the thyroid gland the custom has grown up to speak of *hyper (super) pituitarism* when the clinical features are believed to be an expression of excessive activity on the part of the gland, of *hypo (sub) pituitarism* when they are assumed to be due to a deficient secretion of the gland, and of *dyspituitarism* when due to more or less complex alterations affecting the secretion of the two lobes together. Acromegaly is believed to be the clinical expression of hyperpituitarism. Dystrophia adiposo-genitalis (Fröhlich syndrome) and some forms of infantilism and of glycosuria are supposed on good grounds to be expressions of hypopituitarism.

In the majority of patients showing hyperthyroidism the thyroid gland shows considerable enlargement. The pituitary body, as we have already seen, lies encased in the bony sella turcica. If an enlargement of the gland takes place either the diaphragma sellæ must be freed from its attachments to the clinoid processes or the bony walls of the fossa must be eroded. In either case the outline of the base of the sella turcica will be altered by disease of the contained pituitary body, and a skiagram will give us definite evidence of these changes.

In acromegaly, in my experience, there is always some definite evidence of an increase in size of the pituitary fossa. In hypo(sub)thyroidism (myxœdema), on the other hand, a small thyroid is the rule; by analogy, therefore, we should expect that in hypo(sub)pituitarism little or no change in the configuration of the pituitary fossa would appear in skiagrams of this region, and this I believe to be a common finding. Like certain cases of Graves's disease, which later take on features of myxœdema, certain cases of acromegaly later take on features similar to those found in hypo(sub)pituitarism; in radiograms of the skull of these patients we should expect to find changes in the sella turcica, and Cushing has shown that this does actually happen.

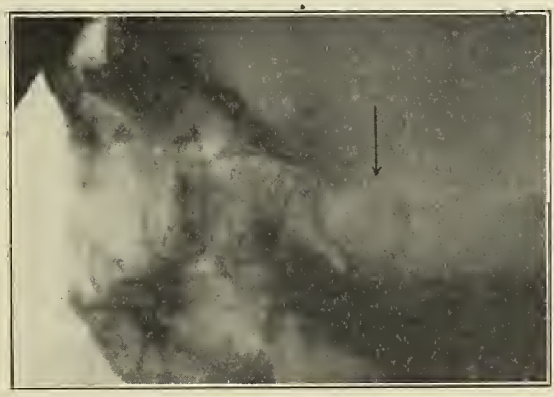
Cushing has divided the enlargements of the sella turcica occurring with primary growths arising from the pituitary body itself into three types: (1) those associated with thickening of the clinoid processes and dorsum sellæ; (2) those showing thinning from pressure absorption of these parts; and (3) those showing more or less destruction of all the outlines of this region; and he states that tumours arising from the pituitary stalk in the interpeduncular region and situated above the sella—the so-called superimposed tumours—give rise to changes in the sella turcica only after they have reached a considerable size (Goetsch). In the skeleton the measurements of the normal pituitary fossa, as given by Keith, average antero-posteriorly (interclinoid distance) 10 to 12 mm., 14 to 15 mm. transversely, and 8 mm. in depth. In profile radiograms measurements exceeding 15 mm. antero-posteriorly and 10 mm. in depth may be looked upon as indicating an enlargement (Cushing). With an undistended sella the floor of the fossa in the skiagram should show a single clear basal outline.

Clinically the 12 cases, which I wish at present to bring under notice (see table) can be divided into—

Examples of Acromegaly	3
,, Dystrophia adiposo-genitalis	3
,, Infantilism and optic atrophy	1
,, Primary optic atrophy and glycosuria ...	1
,, Optic atrophy without any signs of disturbance in general metabolism... ...	1
,, Hydrocephalus, spastic paraplegia, and ataxia of the legs with sub pituitarism	1
,, The "pudding-face" type of dyspituitarism	2

Clinically the three examples showing acromegaly differed widely. In Case 1, a man aged 46, the condition was completely stationary; the skeletal overgrowth had appeared between the ages of 24 and 30, and for 15 years before the patient came under observation for the radical cure of a large inguinal hernia had been completely stationary. Cases 2 and 3, on the other hand, came under observation complaining of the recent increase in size of the extremities and head. In Case 2, a woman aged 40, the overgrowth commenced when the patient was 37 years of age, whilst in Case 3, a man aged 46, changes in the size of the bones began to appear at the age of 44.

FIG. 1



CASE 1.—Acromegaly (stationary). The clinoid processes are displaced upwards. The interclinoid distance measures 15 mm. The floor of the pituitary fossa shows an anterior and a posterior bulge.

The radiological findings in Cases 1 and 2 (see Fig. 1) are similar: in each the clinoid processes are displaced upwards and the floor of the fossa is depressed with the formation of anterior and posterior bulges and the interclinoid distance in each measures 15 mm. In Case 3, on the other hand, the floor of the fossa in the skiagram appears natural, but there is some displacement upwards of the clinoid processes without much alteration in the interclinoid distance, which measures 10 mm.

TABLE GIVING PARTICULARS OF 12 CASE

Onset of condition and history.	Sex and age.	Sella turcica.	Visual disturbances.	Skeletal signs.	Cutaneous and sub-cutaneous.	Sexual glands.	Tolerance of carbo-hydrates.	Thyroid.	Voice.
CASE 1. *Acromegaly, stationary.* Onset of condition between ages 24 and 30. Eight healthy children ranging from 22 to 8 years of age. Stationary for many years.	M., 45	The clinoid processes are displaced upwards. The interclinoid distance measures 15 mm. The floor of the pituitary fossa shows an anterior and a posterior bulge. (Fig. 1.)	Discs and fundi healthy. Visual fields normal.	Classical signs of acromegaly with enormous hands and feet and great overgrowth of inferior maxillæ. Punchinello chest.	Distribution of fat normal. Cyanosis of hands and feet.	Normal.	200 grammes of glucose given by mouth were not followed by the excretion of sugar in the urine.	Of average size.	Natural.
CASE 2. *Acromegaly, progressive.* Married. Onset of condition at age of 37. Right breast removed for chronic mastitis at age of 33.	F., 40	The clinoid processes are displaced upwards. The interclinoid distance measures 15 mm. The floor of the pituitary fossa shows an anterior and a posterior bulge.	Discs and fundi healthy. Visual fields show some contraction down and out on each side. Central vision for form and colour good.	Classical signs of acromegaly; large hands and feet; great overgrowth of lower jaw. No kyphoscoliosis.	Dry skin and harsh hair suggesting myxœdema.	Catamenia regular.	(Not tested.)	Small, not palpable.	,,
CASE 3. *Acromegaly, progressive.* Onset of condition at age of 44.	M., 46	The clinoid processes are slightly displaced upwards. The floor of the pituitary fossa appears natural. The interclinoid distance measures 10 mm.	Old iridectomy R. (at age of 44). Fundi and discs healthy. Left visual field small, right extremely small. Central vision good.	Classical signs of acromegaly; feet and hands large; large lower jaw; head enlarging (larger hat), circumference 22⅞ inches.	Distribution of fat normal. Skin dry and harsh.	Normal.	300 grammes of glucose administered by mouth were not followed by the excretion of sugar in the urine.	Of average size.	Natural. Speaks English badly.
CASE 4. *Dystrophia adiposo-genitalis.* History of cranial injury at 10 years of age. Onset of symptoms at age of 17.	M., 20	Shape of sella turcica normal. The interclinoid distance measures 10 mm. and the depth is 10 mm.	Discs and fundi healthy. ? Some limitation of visual fields (not very definite.)	Epiphyses of fingers and toes not joined. Swelling of left fourth toe. Swelling, chiefly peri-articular, of left second and third fingers and of right third and fourth fingers.	Skin soft and feminine. General excess of fat of typus femininus. No excess of pigmentation. No pubic or axillary hair.	Testes and external genitalia small and infantile.	No sugar detected in the urine after the ingestion of 200 grammes of glucose.	Small.	Treble and infantile.
CASE 5. *Dystrophia adiposo-genitalis.* Onset of symptoms at age of 12½.	M., 15	Enlargement of sella turcica chiefly downwards, but there are no bulges on the lower outline. The posterior clinoid processes appear shortened and displaced upwards. The interclinoid distance measures 15 mm.	Discs pale with softening of the edges, no lamina cribrosa seen. Much limitation of upper and lower visual fields.	Delayed union of all epiphyses.	Skin soft and feminine. General excess of fat of typus femininus. No excess of pigmentation. No pubic or axillary hair.	Testes and external genitalia small and infantile.	No sugar detected in the urine after 200 grammes glucose had been taken by mouth.	,,	,,
CASE 6. *Dystrophia adiposo-genitalis.* Onset of symptoms at age of 10½ years.	F., 11	Sella turcica shallow and ill-defined. The interclinoid distance measures 5 mm. (at age of 11) and the depth of the fossa is 4 mm.	August, 1913: No changes in discs. January, 1914: Optic discs pale and atrophic, edges softened, lamina cribrosa present.	Nil.	Some excess of fat. Skin extremely soft and downy. No growth of axillary or pubic hair.	—	No sugar detected in urine after the administration of 200 grammes of glucose.	,,	Squeaky.
CASE 7. *Lorain type with optic atrophy.*	M., 19	Extensive, irregular enlargement of the sella turcica. The enlargement has taken place chiefly in a forward direction. There is a very definite shadow of a long posterior clinoid process. The interclinoid distance measures 32 mm.	Bilateral primary optic atrophy; onset with left temporal hemianopsia followed by right temporal hemianopsia; then progressive loss of nasal vision to complete blindness 2½ years after onset of symptoms.	Delayed union of epiphyses.	Sparsely covered boy. No growth of pubic or axillary hair.	Testes and external genitalia infantile.	No sugar appeared in the urine after 300 grammes of glucose had been taken by mouth.	Of average size.	Treble and infantile.

OF DISEASES OF THE PITUITARY GLAND.

	Blood pressure.	Torpidity and drowsiness.	Psychic disturbances.	Oculomotor nerves.	Other cranial nerves.	Reflexes, &c.	Sphincters.	Urine.	Wassermann reaction.	Weight.	Temperature.	Pulse.
1	—	Nil.	Nil.	Unaffected.	Unaffected.	Reflexes, motion, and sensation unaffected.	Controlled.	Natural.*	Negative.	—	Normal.	60–70
2	125 mm.	Drowsy.	Slow in speech and in movement.	,,	,,	,,	,,	Natural.	,,	—	,	72
3	—	Attacks of giddiness followed by somnolence and accompanied by intense general headaches and at times by vomiting.	,,	,,	,,	,,	,,	,,	,,	—	,,	70–
4	60 mm., rising to 120 mm. on treatment with posterior lobe pituitary extract.	Somnolence noteworthy.	Unconscious of changes in himself; dull, intelligent, good tempered; no initiative.	Occasional diplopia. Pupils reacted normally.	Smell unaffected. Weakness of right sixth. Permanent squint. Right nerve deafness.	Knee-jerks exaggerated. No ankle clonus. Bilateral extensor plantar responses.	Attacks of incontinence of urine and fæces usually by night.	,,	,,	7 st. 10 lb.	Subnormal (96–97° F. morning, 98° evening).	100
5	—	Extremely drowsy.	Dull, good tempered; simple, intelligent; no initiative.	Ptosis, left. No diplopia. Pupils irregular, reacted sluggishly to light.	Smell unaffected. Facial movements irregular. No facial palsy. No deafness.	Spastic gait; adductor spasm; knee-jerks exaggerated; bilateral ankle clonus; bilateral extensor plantar responses.	Controlled.	,,	,,	7 st. 12 lb.	Subnormal.	90
6	88 mm.	Not noteworthy.	Dull, stupid, slow at learning; intelligent.	Pupils normal; slight ptosis, left; no diplopia.	Smell unaffected, sixth, seventh, and eighth nerves unaffected.	Spastic gait and adductor spasm developed between August, 1913, and January, 1914. Knee-jerks exaggerated, left more than right. Ankle clonus, left. Extensor plantar responses, right and left.	,,	,,	,,	6 st. 4 lb.	,,	80
7	100 mm.	Very noticeable; some general headache.	Mental changes developed two years after onset of left temporal hemianopsia.	Some exophthalmos, right and left. Slight ptosis, left. External squint, left. Pupils, no reaction to light (blind).	Weakness upper and lower right half of face. Paresis of right halves of palate and tongue.	Right hemiplegic weakness. Knee-jerks exaggerated. No ankle clonus. Right plantar response extensor.	,,	,,	,,	—	,,	80

TABLE GIVING PARTICULARS OF 12 CASES

Onset of condition and history.	Sex and age.	Sella turcica.	Visual disturbances.	Skeletal signs.	Cutaneous and subcutaneous.	Sexual glands.	Tolerance of carbohydrates.	Thyroid.	Voice.	
CASE 8. *Pituitary cyst; primary optic atrophy; glycosuria, with choletithiasis.* Married; six living children. Menopause at 48 years. Onset of blindness at age of 46.	F., 54	There is much general disturbance of the outlines of the pituitary fossa. No shadow of the clinoid processes can be distinguished: an estimate of interclinoid distance cannot be made. Above the sellar region is a less dense shadow, evidently due to a pituitary cyst. (Fig. 2.)	Complete bilateral primary optic atrophy, with total inability to appreciate light and darkness.	Nil.	Well covered; the fat has a normal distribution.	Menopause at age of 46.	3 per cent. glucose with no acetoacetic acid in urine. The sugar disappeared from the urine on dieting. After operation no change in sugar tolerance.	Of average size.	Natural.	*8*
CASE 9. *Optic atrophy; bitemporal hemianopsia: sellar changes.* Onset of hemianopsia, October, 1910. Under observation March, 1912.	F., 32	There is a slight uniform enlargement of the sella turcica, with commencing increase in the distance between the clinoid processes (15 mm.).	Bitemporal hemianopsia. Primary optic atrophy, right and left.	"	No gross abnormalities in fat discovered. At onset of visual changes got "fatter"; now normal again. Hair falling out, skin dry.	Catamenia regular.	Not tested.	Not palpable.	"	*9*
CASE 10. *Hydrocephalus; spasticity and ataxia oj legs; dyspituitarism.*	M., 5.	The pituitary fossa is shallow. The interclinoid distance measures 10 mm., the depth is 7 mm.	Discs pale, fundus generally pigmented. Vision good.	"	Fat boy with olive complexion. Large head with frontal bossing.	Genital organs very undeveloped.	"	"	—	*10*
CASE 11. *Subpituitarism, pudding face type.* Onset of symptoms at age of 18½ years.	F., 21.	Sella turcica well defined. The interclinoid distance measures 10 mm., the depth is 12 mm. (Fig. 3.)	Discs and fundi healthy. Slight general limitation of the fields of vision in all directions.		Well covered; shoulder contours rounded. Fat, red, outstanding cheeks. Hair of scalp dry and curly, of pubes and axillæ harsh and scanty. Staphylococcal abscesses leading to ulcers on shoulders, abdomen, and back.	Amenorrhœa since age of 18½. Rectal examination negative. Mammæ small; nipples pigmented.	No sugar detected in urine after the administration of 180 grammes of sugar by mouth.	"	Harsh, squeaky. "Can no longer sing."	*11*
CASE 12. *Subpituitarism. pudding face type; ophthalmoplegia.* Normal till age of 7. At 8 eye movements were lost. Since then no change in vision or in eye movements. One brother, aged 17, and a sister, aged 8. (? congenital abnormality.	F., 15.	Pituitary fossa small and shallow. The interclinoid distance measures 5 mm., and the depth of the sella is 5 mm.	Discs and fundi healthy, no œdema and no atrophy. Visual fields natural.	"	Subcutaneous fat in excess. Fat, rounded, red cheeks. Skin coarse and dry.	Has never menstruated.	Not tested.	Definite goitrous enlargement of thyroid.	Speaks slowly; voice squeaky and childish.	*12*

* Admitted to hospital for radical cure of a large right inguinal hernia. † Admitted to hospital with hepatic colic

In Case 1 no changes in the fundus oculi or in the visual fields were present, and there were no signs of local nervous derangements. In Case 2, on the other hand, although the fundus oculi appeared natural, the visual fields showed some contraction downwards and outwards, and in Case 3 there was much contraction of both visual fields, the left being small and the right extremely small. In Case 2 no signs of local nervous involvement were present, but in Case 3 the patient complained of attacks of giddiness and of headache, although no evidence of gross nervous derangements was obtained.

The three examples of dystrophia adiposo-genitalis clinically resemble one another more closely. In Case 4, a boy aged 20, symptoms appeared at the age of 17. In this case there is a history of a fall followed by a period of shock

OF DISEASES OF THE PITUITARY GLAND—*(Continued)*.

	Blood pressure.	Torpidity and drowsiness.	Psychic disturbances.	Oculometer nerves.	Other cranial nerves.	Reflexes, &c.	Sphincters.	Urine.	Wassermann reaction.	Weight.	Temperature	Pulse.
8	—	Nil.	Nil.	Pupils do not react to light (blind).	Unaffected.	Reflexes, motion and sensation unaffected.	Controlled.	No albumin. 3 per cent. glucose. Bacillus coli in cultures.†	Negative in serum and in cerebrospinal fluid, and 1 cell per c.mm. in cerebrospinal fluid.	11 st. 9 lb.	Normal.	60-70
9	—	Intense headaches at the onset with somnolence; these had passed away before the patient came under observation.	—	Light shone into right eye yields no contraction of pupils; into left eye causes both pupils to contract.	,,	,,	,,	Natural.	Negative.	9 st. 6 lb.	,,	80-90
10	—	—	—	Unaffected.	,,	Spastic and ataxic legs (? cerebellar ? posterior column ataxia). Knee-jerks exaggerated. Bilateral ankle clonus. Plantar responses extensor right and left. Sensation apparently unaffected.	Dribbling; incontinence of urine.	,,	Negative in serum and in cerebrospinal fluid. Pleocytosis in cerebrospinal fluid.	—	,,	80-90
11	180 mm. falling to 120 mm. on administration of thyroid extract.	Not noteworthy.	No gross psychic disturbances; had become introspective because her face attracted attention.	,,	,,	Reflexes, &c., natural.	Unaffected.	,,	Negative.	8 st. 4 lb. (5 ft. 3 in.)	Subnormal.	70-80
12	—	Not noticeable.	Standard VII. at age of 14. Inattentive until objects are seen, then attention is good.	Grave, but not total ophthalmoplegia externa, right and left. No power of convergence, but no diplopia. In good lights pupils at times unequal, but both reacted well to light. Considerable ptosis, right and left.	Smell unaffected. No deafness. Facial movements natural.	Knee-jerks natural. Plantars flexor.	,,	,,	,,	5 st. 2 lb.	,,	96-100

due to a gall-stone. Operation. Recovery. After removal of stone from cystic duct no alteration in sugar tolerance occurred.

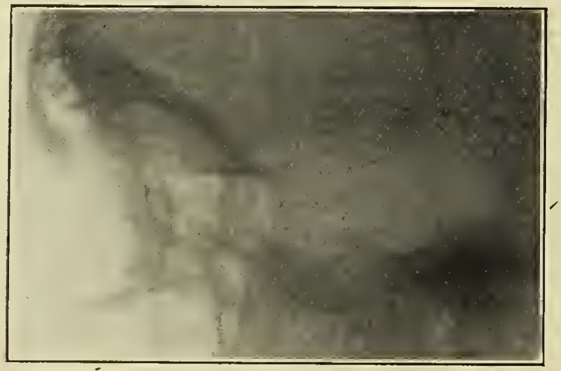
with loss of consciousness lasting some 24 hours, and the development of right-sided internal ear (nerve) deafness at the age of 10. Three years after the onset of symptoms this patient in addition to dystrophia adiposo-genitalis suffered from occasional attacks of diplopia, a permanent squint due to a paresis of the right external rectus, and right internal ear deafness; the visual fields were slightly contracted, but no changes in the fundus oculi were present; the knee-jerks on each side were exaggerated and both plantar responses were of the extensor type. The skiagram of the sellar region, however, showed no definable abnormalities.

In Case 5, a boy aged 15, symptoms appeared at the age of 12½. Two and a half years later he showed softening of the edges of the optic discs and much limitation of the upper and lower visual fields; on the left side ptosis was present; the pupils contracted sluggishly to light, but diplopia had never occurred. He was typically spastic with scissoring of the gait due to a severe degree of adductor spasm. The knee-jerks were exaggerated, ankle clonus could be obtained on each side, and the plantar responses were definitely extensor. The skiagram shows a general downward enlargement of the floor of the pituitary fossa and an apparent shortening of the posterior clinoid processes.

Case 6, a girl aged 11, came under observation in August, 1913. At that time she was fat and her mental condition closely resembled that observed in Cases 4 and 5; her visual fields were normal and the fundus oculi on each side appeared healthy. Under observation she has developed bilateral pyramidal interference with ankle clonus on the left side and both plantar responses are now extensor; the left leg has become extremely spastic and at the same time the optic discs have become pale and atrophic and their edges softened. In the skiagrams of this patient taken in August, 1913, and in January, 1914, the sella turcica appeared ill-defined and shallow.

Case 7 is an example of the Lorain type of dystrophy associated with disease of the pituitary body. At the age of 16 this patient developed a left-sided temporal hemianopsia, followed a few months later by a right-sided temporal hemianopsia and within the space of two and a half years he became totally blind. Shortly after this he developed slight exophthalmos on each side, left-sided ptosis, strabismus, and signs of pressure upon the left crus cerebri. The skiagram of this patient shows an extensive, irregular enlargement of the pituitary fossa; the enlargement has taken place chiefly in a forward direction and there is a shadow of a long posterior clinoid process.

FIG. 2.

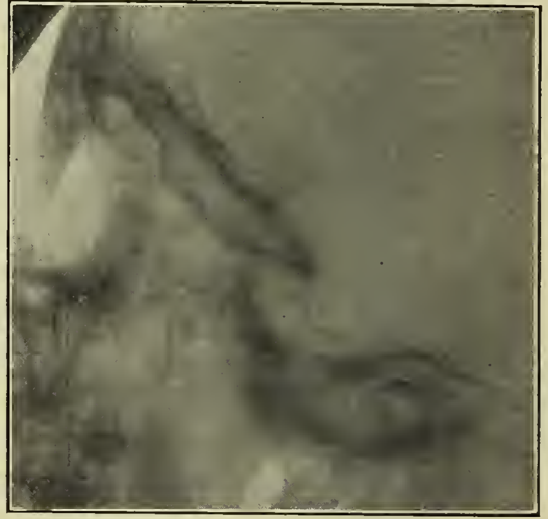


CASE. 8.—Pituitary cyst, primary optic atrophy, glycosuria. There is much general disturbance in the outlines of the pituitary fossa. No shadow of the clinoid processes can be distinguished and an estimate of the interclinoid distance cannot be made. Above the sellar region is a less dense shadow, evidently due to a pituitary cyst.

In Case 8, a married woman aged 54, primary optic atrophy developed at the age of 46. In 1908 this patient was under observation in hospital; the only sign of derangement discovered at this time was bilateral white optic atrophy and the urine contained no sugar. In 1913, when she was readmitted complaining of attacks of colic, glucose was found to be present in the urine. As an in-patient she suffered from typical attacks of hepatic colic and a diagnosis of gall-stones was made. This diagnosis explained the attacks of colic and suggested a cause for the glycosuria but not for the blindness. A radiogram of the skull was taken (Fig. 2); this showed a general disturbance in all the outlines of the pituitary fossa, no clinoid processes, but a less dense shadow, evidently due to a pituitary cyst, above the region of the sella turcica. At the operation a single gall-stone was found blocking the cystic duct; the pancreas appeared normal. The suggestion is that a cystic pituitary tumour encroached on the optic chiasma causing blindness, and on the posterior lobe of the pituitary gland giving rise to glycosuria. On the other hand, the glycosuria might be due to pancreatic disease.

In Case 9 the diagnosis of pituitary disease depends solely upon the X ray findings. In October, 1910, this patient developed bitemporal hemianopsia, and in March, 1912, this hemianopsia was the only discoverable manifestation of disease, but the skiagram shows a slight general enlargement with some increase of the antero-posterior diameter of the pituitary fossa.

FIG. 3.



CASE 11.—Subpituitarism ("pudding-face" type). Sella turcica well defined. The interclinoid distance measures 10 mm., the depth is 12 mm.

Cushing has shown that many patients with cerebral tumours, although they vomit freely, do not waste, and that at necropsies on cases which in life have shown signs of increased intracranial pressure the pituitary body often shows signs of compression. From these observations he was led to collect evidence on the frequency of the appearance of manifestations of subpituitarism in clinical examples of increased intracranial pressure, and he states that this is not infrequent. Case 10 is an example of such an occurrence. The patient, a boy aged 5, has a large head and other manifestations of hydrocephalus; in addition he shows spasticity and ataxia of the legs; the knee-jerks are exaggerated, ankle clonus is readily elicited on each side, both plantar responses are of the extensor type, and he suffers from incontinence of urine. The radiogram of the skull of this patient shows an extremely shallow, small pituitary fossa.

Cases 11 and 12 are examples of another variety of dyspituitarism—the so-called "pudding-face" type. Case 11, a young woman aged 21, was perfectly normal until the age of 18½; then amenorrhœa set in, her hair fell out, and her voice changed; shortly after this her face grew fat and "pudding-like" and her hair grew thick and curly. Since this time she has not menstruated and no further changes in her appearance have occurred. The blood pressure in May, 1913, was 180 mm., but under the administration of thyroid extract it fell to 120 mm. No abnormal nervous signs have ever been discovered. The skiagram of the skull (Fig. 3) shows a rather deep sella turcica (12 mm.) with well-defined lower margins and no change in the antero-posterior diameter. In many ways this case resembles a case of myxœdema, but treatment with thyroid extract has not removed any of the disabilities. Case 12, a girl aged 15, is said to have been normal until the age of 7; then in the course of a few months an almost complete external ophthalmoplegia associated with bilateral ptosis developed. At the age of 15 she has never menstruated, and is an undeveloped girl showing no secondary sexual characters, a large "pudding-face," and extremely defective external eye movements, but no other nervous signs. Her thyroid shows considerable enlargement with the development of a goitre. The radiogram of the skull shows an extremely small and very shallow sella turcica, measuring antero-posteriorly 5 mm. and 5 mm. in depth. The suggested explanation of the clinical findings is that some change has occurred in the activities of the pituitary gland; the development of an enlargement of the thyroid gland is in accordance with this hypothesis.

In addition to the changes in general metabolism disease processes arising in the pituitary body owing to the anatomical relations of the gland to the optic tracts, to the third cranial nerves, and to the crura cerebri, early give rise to localising nervous signs. The appearance of these together with the changes known to occur when the activities of the pituitary body are deranged, or with radiographic changes in the conformation of the sella turcica, renders diagnosis of pituitary disorder more certain than in other intracranial conditions. In doubtful cases a change in the size or shape of the sella turcica as seen in the X ray plate is at present the most certain evidence of pituitary disorder.

My best thanks are due to Mr. F. S. Kidd, Dr. H. Head, Dr. R. Hutchison, Dr. R. C. B. Wall, Dr. Lewis A. Smith, and to Mr. A. B. Roxburgh for permission to publish the cases which have been under their care, and to Dr. Gilbert Scott who took the skiagrams.

Queen Anne-street, W.

A CASE OF TRIPLETS SUCCESSFULLY BREAST-FED.

BY JAMES MORRISON, M.D. LOND.

ON Nov. 3rd, 1913, I was called to see a woman, aged 37, who had been confined of triplets—two girls and a boy. The mother had previously had seven children. The babies were small and immature, though born at full time. They had been fed at the breast throughout, but were not thriving; there was marked absence of subcutaneous fat, and the skin was wrinkled and red. The respective weights at birth were: James, 5 lb.; Violet, 4¾ lb.; and Rose, 4¼ lb. On Nov. 3rd, when four weeks old, their weights were: James, 4 lb.; Violet, 3¾ lb.; and Rose, 4 lb. On Oct. 29th a sample of mother's milk was drawn off and reported upon as follows: Specific gravity, 1035; fat, 1·06 per cent.; carbohydrates, 7·91 per cent.; proteids, 0·63 per cent.; salts, 0·26 per cent.; and water, 90·11 per cent. The children were quite healthy, but weakly, crying, and fretful, and evidently not getting enough nourishment. The mother was given lactagol in order to improve the quantity and quality of the milk, which was very deficient in fat and proteid; she took on an average two teaspoonfuls three times a day.

On Nov. 10th, a week later, the boy was distinctly weaker and had got a bad cold. I therefore instructed the mother always to give him first feed, and for a time to draw off the milk and feed him with a spoon to be quite sure he got food. In a few days' time he picked up. On the 17th the mother had a bad influenza cold with herpes on the cheek and pains between the shoulders; she was feeling the wear of feeding the three children. The cold was treated with salicylate of soda, and later quassia and iron mixture; a small follicular abscess had to be opened on the left breast. She was now able to draw off from four to five teaspoonfuls of milk at a time with a breast pump to feed the boy. On the 18th another sample of milk was taken, the report being as follows: Specific gravity, 1035; fat, 1·65 per cent.; carbohydrates, 6·61 per cent.; proteids, 1·81 per cent.; salts, 0·274 per cent.; and water, 86·69 per cent. This showed a distinct improvement in the percentage of both fat and proteids.

On Nov. 28th the three children were all distinctly thriving and filling out; the mother's breasts were fuller and the children cried less. The mother had lost her aches and pains and was feeling well. From this date onwards the children made distinct improvement, the mother's milk being good in colour and consistency, the children sleeping better and crying less. The mother got a little distaste for the lactagol about this time, so the quantity given was lessened for a period, but eventually we were able to give increased amounts without any complaint.

On Dec. 19th a third report of the milk was obtained as follows: Specific gravity, 1035; fat, 1·90 per cent.; carbohydrates, 6·58 per cent.; proteids, 1·442 per cent.; salts, 0·270 per cent.; and water, 89·72 per cent. This report showed a further increase in the percentage of fat.

On Jan. 10th, 1914, the child Rose was found to have a slight left inguinal hernia and protrusion of the navel, but all three babies were gaining steadily in weight. On Feb. 9th the milk was again examined and the report was as follows: Specific gravity, 1036; fat, 1·3 per cent.; carbohydrates, 6·57 per cent.; proteids, 1·78 per cent.; salts, 0·195 per cent.; and water, 90·11 per cent. This showed a slightly lower percentage in fat and a distinct increase in the percentage of proteid. The mother could now easily feed the three children without feeling run down, and the latter have steadily been gaining weight up to the present time.

Weymouth-street, W.

NATIONAL ASSOCIATION FOR THE PREVENTION OF INFANT MORTALITY AND FOR THE WELFARE OF INFANCY.—A deputation from this association interviewed Mr. Masterman at the offices of the National Insurance Commission on June 25th to urge that the administration of the maternity benefit and also any future extension of the care of maternity should be in the hands of the public health authorities. The deputation consisted of Mr. Benjamin Broadbent and Dr. S. G. Moore (Huddersfield), Dr. John Robertson (Birmingham), and Dr. Eric Pritchard and Dr. Amand Routh (London).

A PATHOLOGICAL INVESTIGATION OF FOUR CASES OF PITUITARY TUMOUR.

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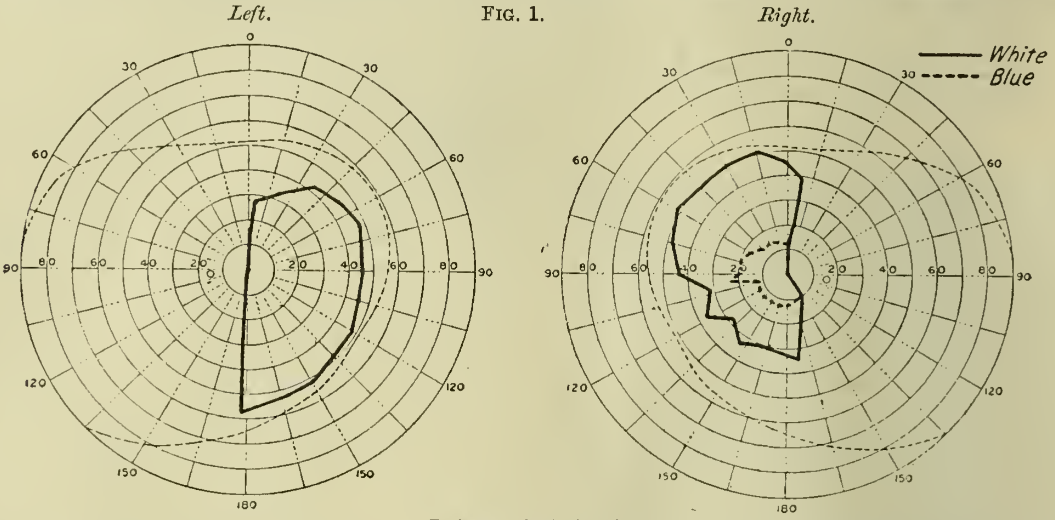
(*From the Pathological Department, Guy's Hospital.*)

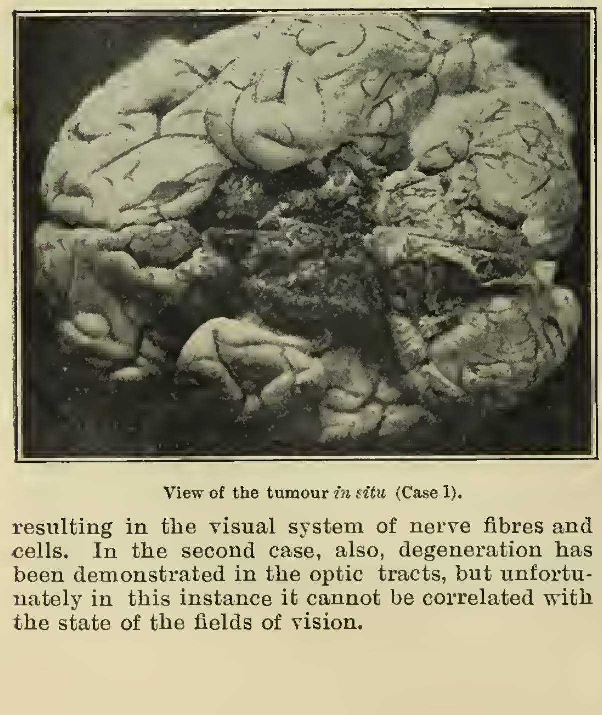
In view of the comparative rarity of tumours of the pituitary body and of the interest recently aroused in them, the publication of the pathological investigation of four fatal cases from Guy's Hospital may prove of value. The first two descriptions are taken from cases which came to necropsy during the past year. The last two are from specimens in Guy's Hospital Museum which date back to 1883 and 1877 respectively. In the first case advantage has been taken of the fact that a complete examination of the eyes had been made by Mr. H. L. Eason to undertake an inquiry into the extent of the degenerative changes resulting in the visual system of nerve fibres and cells. In the second case, also, degeneration has been demonstrated in the optic tracts, but unfortunately in this instance it cannot be correlated with the state of the fields of vision.

Fig. 1.



Perimeter chart (Case 1).

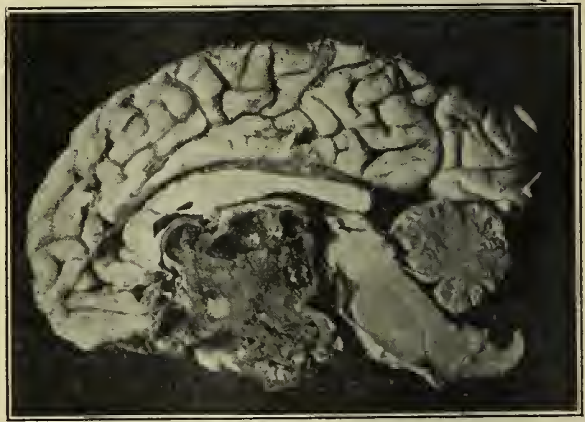
Fig. 2.



View of the tumour *in situ* (Case 1).

Case 1.—The patient, a man aged 27, formed one of the cases of pituitary tumour which Mr. Eason showed before the Royal Society of Medicine in May, 1913, at a meeting of the combined Sections of Neurology and Ophthalmology.[1] A short summary of the clinical report is as follows: The patient was short and undeveloped, with a lack of hair about his face and pubes. The voice was half broken and high-pitched. He was extremely drowsy and slept most of his time. Weight 7 st. 10 lb. Looked much younger than his age, being almost boyish in appearance. Examination of his eyes showed complete bilateral temporal hemianopia. The fields of vision are given in Fig. 1. Vision: R., 6/36; L., 6/9. The reaction of the pupils to light on both sides was hemiopic. The Wassermann reaction was positive, but treatment with mercury, iodides, thyroid and pituitary extracts resulted in no improvement in vision or in any other way, except that the headache was diminished and the weight slightly increased. A skiagram showed some enlargement of the sella turcica. The blood pressure was found to be 100 mm. of mercury. Latterly he had suffered from severe enuresis. The skin was brownish in colour. A condition of semi-coma prevailed during the last three weeks.

Fig. 3.



Mesial section through brain and tumour. The capsule of the tumour lies close up against the corpus callosum. The hæmorrhagic cysts are well seen.

Pathological examination.—Emaciation was marked. There were no bony changes, either atrophy or enlargement, present. The heart weighed 190 grm. and showed an early condition of brown atrophy. The liver weighed 1090 grm. It was pale yellow in colour, and appeared to contain excess of fat. The pancreas (42 grm.), the thyroid (10 grm.), the spleen (102 grm.), the suprarenals (11 grm.), and the kidneys (294 grm.) all seemed perfectly normal macroscopically. The testes were normal in consistency, but were a little small (abstract from Dr. Herbert French's report).

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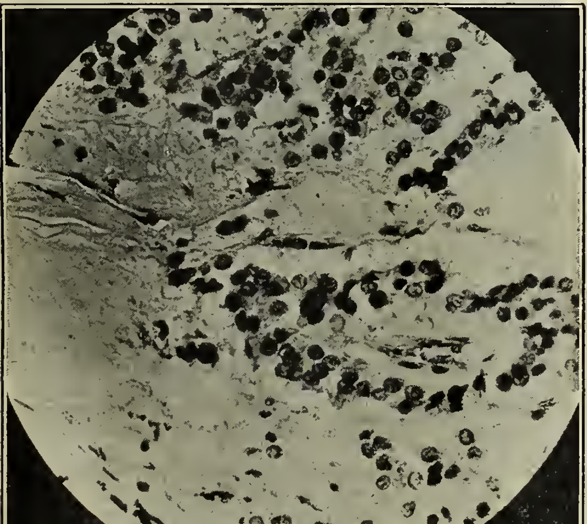
[1] Proceedings, vol. vi., No. 7, p. 7.

In the position of the pituitary body was found a bright red irregular tumour, contained in a definite tough capsule, and which had numerous white necrotic areas scattered through it, especially towards the centre. The substance of the growth was soft and hæmorrhagic, and contained several cysts filled with altered blood. The appearance of the tumour is shown in Figs. 2 and 3, reproduced from photographs. It completely occupied the interpeduncular space, extending forwards to reach the orbital portions of the frontal lobes, and spreading laterally over the surface of both temporal lobes. Posteriorly, it separated the crura cerebri widely from each other and then extended over them, covering the upper portion of the pons. A mesial section through the brain and tumour shows the basal ganglia and corpus callosum to be displaced upwards. The superior and inferior walls of the lateral ventricles were in close apposition, their cavities being practically obliterated. The pressure on the base of the skull had resulted in absorption of the original bone forming the sella turcica, and only a thin shell of bone still remained surrounding the greater portion of the tumour. The third, fourth, and sixth nerves on both sides were stretched by the growth. The optic chiasma was broken through in such a way that the right and left optic nerves appeared to be direct continuations of their respective tracts. The degenerative changes found in the optic tracts suggest, however, that this destruction of the chiasma was of comparatively recent date. The brain and meninges appeared perfectly normal macroscopically. It was possible to shell out the tumour quite easily from the bed which it had forced for itself in the base of the brain.

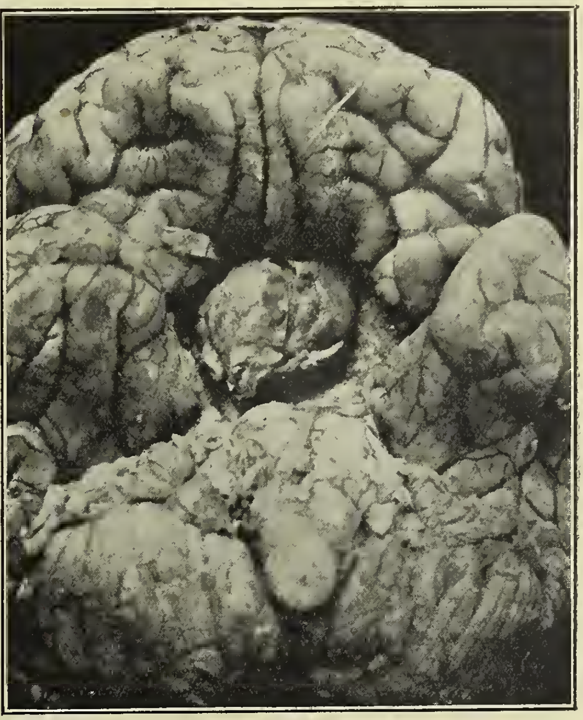
Microscopical examination.—Sections were examined of portions of the thyroid, pancreas, suprarenals, liver, and testis. Thyroid: The alveoli appeared well formed and contained the normal amount of colloid. There was no evidence of cell proliferation, and the interstitial tissues were normal in appearance. Pancreas and suprarenals: The structure of these organs was that of normal functioning glands. Liver: Extensive fatty change was present throughout the section, and was confined to the peripheral portions of each lobule. The cells in the centre of the lobule were normal in appearance and there was no cirrhotic change. Testis: The seminal tubules were normal in number and in character. There was a slight increase in the interstitial connective tissue, indicating a very early fibrotic change. Sections were examined with special reference to the condition of the interstitial testicular cells. These were markedly deficient in number. Several sections were examined from various parts of the testicle. Stained with Herxheimer's stain the few interstitial cells present were found to be in a somewhat atrophied state. The pituitary tumour itself under the microscope was seen to be made up of large polyhedral cells, the protoplasm of which stained a faint pink and the nuclei a dark blue with the ordinary hæmatoxylin and eosin method. The chromatin granules show up distinctly in these latter. The cells themselves are arranged in long columns, with occasionally a tendency to alveolar grouping, the whole appearance closely simulating the structure of the anterior glandular portion of the pituitary. No colloid material was discovered, and nothing corresponding to the posterior lobe was seen. The vascular spaces characteristic of this organ were well marked, and towards the centre of the tumour they became large hæmorrhagic cysts in which red blood cells were mixed with necrotic tumour cells. Towards the periphery, however, they became smaller and smaller, until when the capsule was reached they ceased to exist. The capsule was thick and consisted of dense fibrous tissue. In numerous places the cells of the growth were extending into the capsule along the lymph channels. (Fig. 4). Its appearance, therefore, was that of a malignant epithelial tumour of the pituitary gland. The entire absence of secondary deposits is noteworthy.

FIG. 4.



The upper portion of the field shows the edge of the growth. The lower portion shows up the capsule being invaded by groups of tumour cells. (Case 1.)

FIG. 5.



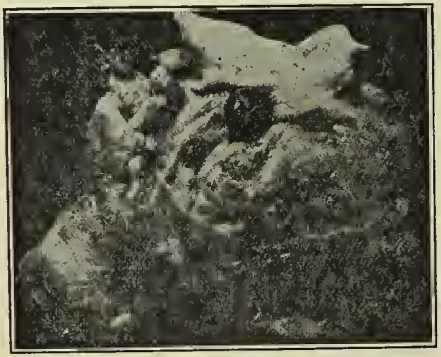
View of tumour in Case 2. The cyst has been distended with cotton wool to its normal size.

CASE 2.—The patient, an unmarried woman, aged 27, was admitted into Guy's Hospital under the care of Mr. L. A. Dunn. She had had continuous headache for the previous three weeks accompanied by vomiting. The left eye was completely blind, and the vision in the right eye was markedly defective. Both eyes reacted to light and accommodation, but the reaction of the left was very deficient. The patient was seriously ill and died shortly after admission, so that a detailed examination of the eye condition was impossible. She was extremely lethargic. Pulse 56 and low tension. Temperature subnormal. The left eye showed a definite degreė of exophthalmos as compared to the right. Further details have been kindly supplied by Dr. H. J. Henderson and Mr. L. C. D. Irvine, of Amersham, who attended the patient in private. They state that, in spite of her age, menstruation had never occurred. The breasts were undeveloped, and there was complete absence of pubic and axillary hair. Nothing is known of the sugar tolerance, but for some time past she had shown a great partiality for sweet things, and had been used to taking bread and butter thickly coated with brown sugar. A year ago Mr. Arnold Lawson had examined the eyes and found advanced optic atrophy in the left eye. This was confirmed on the examination of the patient here. There was no sugar or albumin in the urine.

Post-mortem examination.—With the exception of the tumour nothing abnormal was found in any of the organs (Dr. Herbert French's report).

The tumour: In the position of the pituitary body, filling up the interpeduncular space, there was a cystic tumour, the relations of which are shown in Fig. 5. It measured ¾ inch antero-porteriorly and 1¼ inches from side to side, and was almost exactly the size of a golf ball. On removal a deep hollowed-out depression was found at the base of the brain. The sella turcica, on which the tumour had rested, was flattened into a shallow concave surface. The vessels of the circle of Willis were present on the lateral walls, indicating that the original cyst had been small enough to be within the circle, and that as it enlarged the vessels became stretched on its outer walls. The optic chiasma lay stretched over the antero-inferior portion of the tumour, and had apparently given way through its centre. The right optic tract and nerve were not much damaged, but the portions of the left optic tract and nerve near the chiasma were pressed out into a wide thin band. The tumour was pressing them down on to the hard bone at the base of the skull. On the other hand, the third and fourth cranial nerves, lying between the tumour and the soft structures forming the base of the brain, showed little or no flattening. On being cut through the tumour was seen to consist of one large cyst composed of two loculi, which communicated freely with each other, and they contained a thin reddish fluid. The wall of the cyst was tough and fibrous, and scattered over its surface there were four or five small masses of a reddish glandular substance closely similar in appearance to the anterior pituitary lobe. The largest was of the size of a pea and the smallest about half this size. In addition there were still smaller masses of the same nature to be found scattered over the surface. The larger ones are shown in Fig. 6, which is about natural size. It also shows the division into two loculi—the large one which formed the main portion of the cyst, and the smaller one which occupied the right anterior angle of interpeduncular space.

FIG. 6.

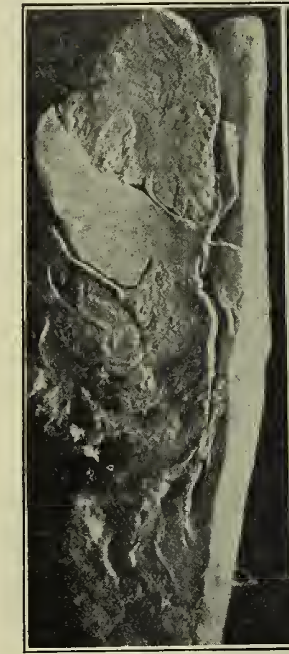


From a photograph (actual size) of the tumour in Case 2, showing the glandular masses in the capsule.

Macroscopically the brain was normal in every way, with the exception of a slight degree of dilatation of the lateral ventricles. Under the microscope the cyst wall was seen to consist mainly of laminated fibrous tissue. Everywhere between the laminæ were to be seen small collections of cells, which in places were aggregated to form the red glandular masses already referred to. The arrangement and character of these cells to all appearances were those of the anterior lobe of the pituitary. Large spaces packed with red blood corpuscles lay between the columns into which the cells were arranged, and in places large hæmorrhages were present. The cells themselves were polyhedral or oval in shape, and had large dark nuclei. The majority were chromatophobes, but several approximated to the chromatophilic type. More externally they showed the same tendency to infiltrate the layers of the cyst wall, as was seen in the first tumour. It can only be described, therefore, as of the same nature—viz., a malignant epithelial tumour of the pituitary gland, with complete absence of secondary deposits.

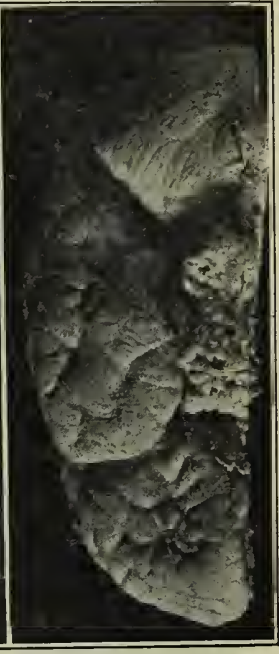
CASE 3 (Specimen No. 2876 in Guy's Hospital Museum).—The patient was a male, aged 23, who died in 1883. He had been under the care of the late Dr. F. W. Pavy and Dr. Frederick Taylor. There was a history of a head injury and concussion 15 years previously. Three years before admission he had had vertigo and frontal headache, and for the last 18 months the vision in the left eye had been failing. On admission the left eye was completely blind, and there was also partial loss of vision in the right eye. He was a dark muscular man, but no mention is made as to sexual development. Apart from headache, there were no other symptoms.

FIG. 7.



Mesial view of No. 2876 showing the capsule of the tumour lying just beneath the corpus callosum as in Case 1.

FIG. 8.

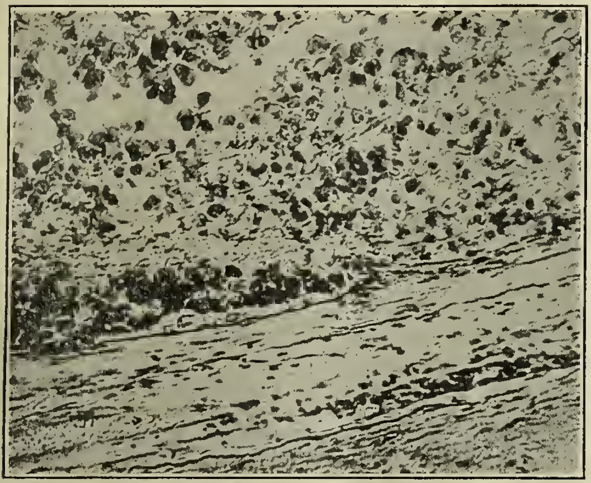


View of the left half of the brain, No. 2876, showing the position and appearance of the tumour.

Post-mortem examination (by Sir James F. Goodhart).—The pituitary fossa was enlarged to form a diamond-shaped space, in which lay a soft lobulated tumour. This occupied the position of the pituitary body and extended forwards over the ethmoid; laterally it overlapped the temporo-sphenoidal lobes, and posteriorly it covered over the upper part of the pons. On the left side the optic nerve and third, fourth, and fifth nerves were pressed into flattened bands. On the right side the optic nerve and third nerve were lost in the tumour, while the fourth and fifth nerves were stretched over it. The other cranial nerves were unaffected. (Figs. 7 and 8.) The tumour itself was more or less circular in outline and measured 2½ inches across. On section, thick cream-like material oozed away, leaving numerous cystic cavities with ragged walls.

Under the microscope the tumour was found to consist mainly of cellular elements, the cells being the chromatophilic type, though somewhat smaller than the cells in the two previous tumours. With the exception that there is much less stroma present, the general appearance, however, closely approximates to them. There is the same tendency for the cells to form columns and an alveolar arrangement, and also for those on the periphery to infiltrate the layers of the capsule. (Fig. 9.) With the other two, therefore, it must be classed as a malignant epithelial tumour of the pituitary gland, showing no tendency to form secondary deposits.

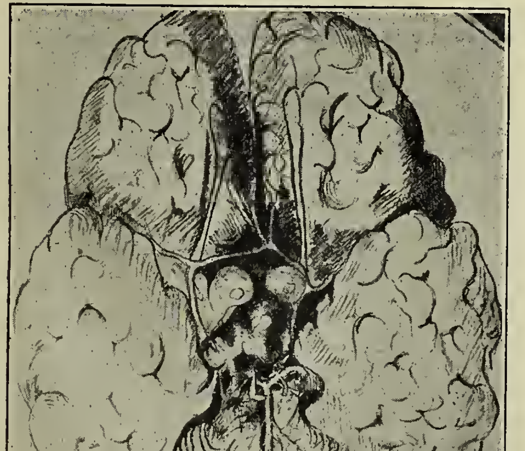
FIG. 9.



Reproduction of a photomicrograph of No. 2876 showing cells at the edge of the growth infiltrating the capsule.

CASE 4 (Specimen No. 2875 in Guy's Hospital Museum).—The patient was a male, aged 45, who died in Stephen Ward in 1877. He had been under the care of Dr. Samuel Wilks. He was a thin, wasted man. Three weeks before admission he was seized with fits which were followed by left hemiplegia. On admission there were loss of memory, occipital headache, and nausea, but no vomiting. The vision was dim, but no definite optic neuritis or optic atrophy was present. The left external rectus muscle was paralysed. The patient was often delirious.

FIG. 10.



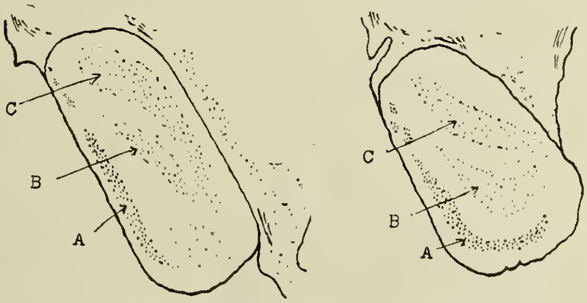
Reproduction of a drawing of the brain by Mr. Hamersley in the original post-mortem report (No. 2875). The tumour is largely hidden by the two swollen optic nerves.

Pathological examination.—The ventricles of the brain were slightly dilated and contained turbid fluid. At the base of the brain was a large gelatinous tumour which was in direct continuation with a somewhat enlarged pituitary body. The bone in the pituitary fossa is flattened out and partly absorbed. The tumour measured 1½ inches long by 1 inch broad and 1 inch thick. The optic commissure is stretched over it anteriorly, and the optic nerves, as seen in Fig. 10, are swollen up into two large swellings half an inch in diameter. Laterally and posteriorly the tumour is bounded by the crura cerebri. There was a patch of growth in the apex of the lower lobe of the left lung consisting of spindle cells arranged in loculi. Histologically the tumour showed a relatively large amount of fibrous stroma in which lay groups of cells, the majority of which were columnar in shape, a few being polyhedral. There was much mucinous material scattered through the section and several goblet cells were to be seen, which would suggest a possible origin from nasal mucous membrane. Its characters were those of a malignant columnar-celled growth. The secondary deposit present in the apex of the lower lobe of the left lung showed similar histological appearances.

The examination of the visual system of nerve fibres and cells.—The left side of the brain in Case 1 was sectioned and utilised for this purpose. A reference to Fig. 1 illustrating the fields of vision will show that the optic fibres destroyed by the tumour are confined to the nasal half of the retina—i.e., the temporal half of the field of vision. And, further, that a portion only of these fibres are affected. From this it might be expected that the degeneration present in the optic tracts would be extremely limited and circumscribed.

The optic tracts.—The accompanying drawings (Fig. 11) of the left optic tract, however, made from Weigert-Pal preparations, illustrate the condition actually found. A narrow band of fibres (A) occupying the outer portion of the tract alone stain normally. Two other bands of fibres (B) and (C) also stain, only less distinctly. The remainder of the tract is completely degenerated. The degenerated area can be described as occupying mainly the central and lower part of the tract. This agrees with Henschen's conclusions as to the position of the nasal fibres in the optic tract. The fibres which stain normally (A), however, which are from the temporal side of the retina, are found lying in the external and lower portion of the tract and not in the superior and external position which he describes.

FIG. 11.



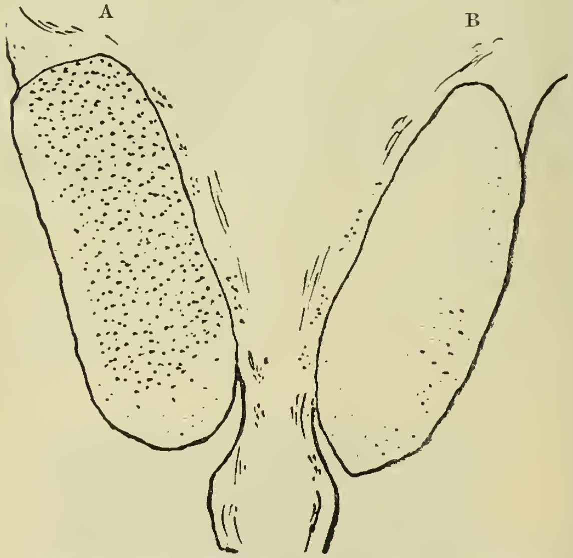
Posterior portion. Anterior portion.

Left optic tract, Case 1. Weigert-Pal preparation.

A comparison of the two drawings will further show that the relative position of the fibres remains approximately the same along the whole length of the tract. The first section is taken from the anterior part of the tract and the second from the region of the external geniculate body. Sections taken through the subthalamic region still showed the degeneration in the optic tract fibres as they entered the external geniculate body and the pulvinar. In this region no particular zone was degenerated; the affected fibres seemed to be scattered amongst those which stained normally. Preparations stained by Marchi's method show the presence of early degeneration amongst those fibres which stain normally with the Weigert-Pal method.

The cortical visual fibres.—Attention was next directed to the state of those fibres which after the relay of the optic tract fibres in the external geniculate body continue the visual impulses to the occipital cortex. No change could be demonstrated. The sections through the optic radiations, stained by Wiegert-Pal, were quite normal. Similarly, no change could be found in these fibres when traced to their termination in the cortex surrounding the calcarine fissure. Sections of this cortex were then stained by Nissl's method and the large stellate cells in the fourth layer—i.e., those concerned with the reception of the visual impulses—were examined. It cannot be said that there was any deficiency in the number of these cells or in their size. It was, however, found that a certain proportion of them exhibited chromatolytic changes, but this did not occur in any definite grouping.

Fig. 12.



Left (A) and right (B) optic tracts in Case 2. Weigert-Pal preparations.

The fibres concerned with the reaction of the pupils to light.—The presence of the hemiopic pupil suggested that this case might throw some light on the question of the course which these fibres take. Serial sections of the posterior thalamic region and the mid brain were accordingly cut and compared with normal preparations. The path described by Meynert—i.e., fibres running dorsally to the anterior córpora quadrigemina, relaying in these bodies and continuing by means of new fibres which end in the oculomotor nucleus—did not give any evidence of degeneration. Similarly, the investigation of the path described by Darkschiewitsch and Mendal—i.e., fibres running to the ganglia habenulæ and continuing by new fibres which reach the oculomotor nucleus *viâ* the posterior commissure—also led to negative results. As, however, the majority of pupil fibres were unaffected in this case, and, further, that either theory states that the degenerated fibres end in cell relay stations in the neighbourhood of the primary optic ganglia, this result is not surprising.

In Case 2 the optic chiasma, although severely compressed, was not broken through as in Case 1. Primary optic atrophy had been observed clinically in the left eye but not in the right. The condition of the optic tracts was as follows. The left optic tract was quite normal with the exception that a few degenerated fibres were found occupying its lower border. This area is indicated in Fig. 12. The right optic tract, on the other hand, was found to show marked degeneration very similar to that present in the other case. A band of fibres situated in the outer and lower part of the tract are seen to be unchanged, although even they do not take the stain as well as do perfectly normal fibres. The remainder of the tract is completely degenerated.

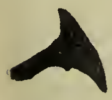
Conclusions.—The only change, therefore, which it has been possible to demonstrate in the visual fibres as a result of a lesion of the optic chiasma—which had caused eye symptoms in both cases for upwards of two years—is a degeneration in the optic tracts. This degeneration was not found extending further back than the primary optic ganglia. The amount of change present in one case was more than was indicated by the visual loss. The statement that certain optic fibres reach the occipital cortex without relaying in the cell stations in the primary optic ganglia would appear to be refuted by the fact that no degeneration was found in the optic radiations and the fibres entering the calcarine cortex. Finally, both cases show that the uncrossed visual fibres tend to occupy the outer and lower portion of the optic tracts.

REMOVAL OF A FOREIGN BODY FROM THE LARYNX BY SUSPENSION LARYNGOSCOPY.

By DAN McKENZIE, M.D. Glasg., F.R.C.S. Edin.,
SURGEON, CENTRAL LONDON THROAT AND EAR HOSPITAL.

The patient, a little girl aged 2 years, was sent to the Central London Throat and Ear Hospital on May 22nd, 1914, by Dr. A. G. Stewart, of Paddington Infirmary, on account of laryngeal obstruction. The history was that one day, four months previously, the child made a grab at a piece of rabbit on her mother's dinner-plate and tried to bolt it. The mass stuck and the child "choked." But a neighbour woman rushed to the rescue and promptly hooked the meat out of the child's throat with her finger and breathing was re-established. Not only so, but, according to the mother, the respiration was then quite free and unimpeded. Next morning, however, the mother noticed that the breathing had become loud and stertorous again and she thereupon took the child to a hospital where during the next three months she was treated as an out-patient for bronchitis. At about 10 o'clock one evening in the middle of April the patient had another severe attack of asphyxia and she was then taken to the Paddington Infirmary under Dr. Stewart's care. Here she did have genuine bronchitis, being laid up with it for about a month, and during this illness she was also for several days unable to swallow and had to be fed with a nasal tube. While in the infirmary a search was made for a foreign body in the larynx with X rays (screen examination), but nothing definite could be made out.

On May 22nd I saw the baby for the first time; the laryngeal stridor was audible several yards off, and each intake of breath was accompanied by considerable recession of the suprasternal and supraclavicular fossæ and of the lower sternal ribs. There was a complete absence of phonation but no cyanosis, and the baby seemed to be bearing her misfortunes with extraordinary calmness. That there must be a piece of rabbit bone in the larynx was abundantly evident from the history of the case and from the physical signs, and so the child was at once admitted to hospital, and next morning (May 23rd), Mr. Archer Ryland and Dr. H. Huff-Johnson assisting, tracheotomy was first of all performed, without any anæsthetic, and then recourse was had to the Killian suspension apparatus for the purpose of investigating the larynx. This procedure occupied about an hour, chiefly because of the difficulty of getting beyond a short pendent epiglottis which kept slipping away from the epiglottis retractors. And it was not until I abandoned these aids and used a long stout probe to hold up the epiglottis that I could get a view of the larynx beyond. Even then all that could be seen, as it happened, were two tiny arytenoid eminences and two puffy ventricular bands in almost constant apposition with each other. Once, indeed, I was able to catch a glimpse of a whitish substance in the larynx, but could not be sure that it was not simply mucus. Owing to the swelling of the interior of the larynx, and owing to the presence of the laryngeal reflex, the child not being under an anæsthetic, it was, in short, impossible to see whether a foreign body was present or not. However, fortified by the facts of the history, I determined to push my explorations. A pair of direct laryngeal forceps was passed open into the larynx and a cautious search made in the neighbourhood of the glottis. The first attempt drew blank, but on the second I had the satisfaction of feeling the jaws of the forceps close upon a hard substance which I rotated a little to loosen from its attachments and then successfully removed. It proved to be the piece of rabbit bone I had been looking for. The shape and dimensions of the foreign body are well shown in the accompanying illustration, and the impaction in the larynx is easily understood when one notes its sharply pointed shape.



The child did very well. The tracheotomy tube was removed a week later, after the laryngeal inflammatory obstruction had subsided, and the patient can now phonate after four months' silence.

The case is interesting for many reasons. First of all, the history showed that a foreign body had been left behind in the larynx after the plug of meat had been removed, and that it was causing recurrent attacks of laryngeal inflammation. Secondly, the case exemplifies the extraordinary tolerance of the air-passages to foreign bodies, as contrasted with the œsophagus. In this case the spicule of bone had been impacted in the larynx for four months. Lastly, we have here an instance of the successful application of suspension laryngoscopy. This, according to Professor Killian's remarks at the recent Semon lecture, makes only the fifth case so far recorded of a foreign body being removed with the aid of suspension laryngoscopy. The others were by E. D. Davis,[1] by Weingärtner, by Seiffert, and by Iglauer.

With regard to the efficacy of the suspension method in this case the opinion formed by us at the operation was that by no other bloodless means could the larynx of so young a child have been exposed so fully. Indirect examination with the mirror in such cases is obviously *hors de concours*, and the only comparison to be made is with direct examination through the laryngeal tube spatula. Tubal examination would have revealed as much perhaps, but when it came to operation the manipulation of the direct forceps through the narrow infantile tube would have been very awkward and difficult, both because the space is restricted and because vision is necessarily monocular. By the suspension method, on the other hand, ample space was provided for the passage of instruments and that with the ease and confidence binocular vision always brings to the operator, for by this method not only can we work with both hands but we can see with both eyes. It is to be noted that the epiglottis elevators supplied with the apparatus proved, in this case, to be useless, and after the waste of much time and energy I had to give them up and to use instead a long stiff probe held in my left hand.

Another point worthy of attention is that, following Chevalier Jackson's practice, I operated on the child without an anæsthetic of any kind whatever, general or local, and the patient did not seem to object in the slightest. Even the tracheotomy evoked little or no protest, and during the greater part of the suspension period of the operation the patient slept quite peacefully.

Brook-street, W.

Reviews and Notices of Books.

Plague and Pestilence in Literature and Art.

By Raymond Crawfurd, M.A., D.M. Oxon., F.R.C.P. Lond. Oxford: At the Clarendon Press. 1914. Pp. 223. Price 12*s.* 6*d.* net.

In his admirable "Latin Literature" Dr. J. W. Mackail, speaking of Celsus, says: "It seems most reasonable to suppose that Celsus was one of a class which is not after all very uncommon—doctors of eminent knowledge and skill in their own art, who at the same time are men of wide culture and far ranging practical interests"; and we can confidently assign Dr. Crawfurd to this category, even though his knowledge is not so encyclopædic as that of Celsus, who, besides being learned in medicine, was recognised as an authority on agriculture and military tactics.

The substance of the work before us represents the FitzPatrick lectures delivered by Dr. Crawfurd in the year 1912, and deals with a subject full of interest from many points of view. Epidemics bring out both the best and the worst side of human nature. If on the one side may be set the devotion of attendants on the sick, of whom Lucretius speaks so pathetically (vi. 1243)—

> Optimus hoc leti genus ergo quisque subibat,

the heroism of clerics such as Mompesson, the rector of Eyam, and of his flock in the seventeenth century in England, or of Belzunce, Bishop of Marseilles, in the eighteenth, of physicians such as Hodges, and apothecaries such as Boghurst, in 1665; on the other may be set the defection of Galen during the Antonine plague A.D. 165–180, and of Sydenham and Morgagni some 1500 years later, and the outbreaks of cruelty and superstition which led to massacres even as late as 1771. The great pestilences worked such appalling damage that men's minds failed them for fear, and even the medicine of the time, such as it was, stood aghast, to quote Lucretius again (vi. 1177)—

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[1] Journal of Laryngology, Rhinology, and Otology, April, 1914, p. 206.

> Mussabat tacito medicina timore.

Dr. Crawfurd discourses learnedly on the many epidemics of pestilence, beginning with the Iliadic plague. This epidemic was probably true plague and not typhus fever, for it is expressly mentioned as affecting the mules and dogs of the camp first. On the other hand, Dr. Crawfurd takes the view, giving his arguments at length in an appendix, that the great plague of Athens, described by Thucydides and later by Lucretius, was typhus fever.

The origin of pestilence was naturally enough ascribed in early times to the anger of the gods for sins, general or particular; thus in Homer the sin was the ravishing of Chryseis, daughter of the priest of Apollo, and in much later times, although the idea of divine anger had not altogether passed away, pestilence was considered to arise from earthquakes which liberated poisonous vapours, or from the dust thrown up by volcanic eruptions. Lucretius ascribed diseases to noxious particles carried in the mists and winds, and Varro, whom Dr. Crawfurd quotes on p. 61, attributed disease in animals to the presence of "animalia quaedam minuta, quae non possunt oculi consequi."

The origin of the great Antonine plague, according to the story related by Julius Capitolinus,[1] was that it was brought to Rome by the soldiers returning from the expedition to the East commanded by the Emperor L. Verus. Some of the troops broke into a temple of Apollo and destroyed a golden chest found therein. From this chest, "spiritus pestilens evasit, atque inde Parthos orbemque complesse." Capitolinus goes on to say that this outrage was not the fault of Verus but of Cassius, who sacked the city of Seleucia in defiance of a treaty, so that here again we see the idea of pestilence as a punishment for wrongdoing.

Ammianus Marcellinus (the reference is xxiii. 6, not xxiii. 7, as given in Dr. Crawfurd's book) tells practically the same story, except that he says that the pestilential vapour escaped from a hidden chamber which the soldiers broke open in the search for treasure. Vapours escaping from chinks in the earth or from caves were always suspected of producing evil results, and Ammianus, a little earlier in the chapter just mentioned, tells of a chasm in the earth in Assyria, close to the lake called Sosingiten, from which a "halitus letalis" escaped having an offensive smell that destroyed any animal standing near it. He mentions another place near Hierapolis in Phrygia from which a "noxius spiritus" came out, which injured all except eunuchs who came near, and he makes the curious comment, "Quod qua causa eveniat, rationibus physicis permittatur." Is it possible that this tradition is due to some connexion with the sterilising effects of radio-activity? Another story about pestilence being spread by an exhalation from a cave is given by Servius in his commentary on Aen. xi. 785, which is interesting on account of the way in which the plague was stayed—namely, by the affected tribe imitating wolves, i.e., living by plunder and foray. Dr. Crawfurd takes his readers through the ages with pestilence stalking over the earth, the great Byzantine plague which lasted for 52 years, beginning in Antioch in A.D. 540 and reaching Strasbourg in 591. Its presence in Rome in 590 gave rise to the dramatic vision of Pope Gregory, who saw the angel sheathing his flaming sword while standing on Hadrian's Mole, now the Castle of St. Angelo. In 680 another severe pestilence affected Rome, and it was in this one that Sebastian became the plague saint, which he has ever since remained. The other important plague saint in the West was St. Roche, and in the East St. Pantelmon, who naturally enough from her commerce with the East was also a favourite in Venice.

We have not space to follow Dr. Crawfurd all through his researches into the art and literature of pestilence, but his work is extremely interesting and admirably done. In one point we beg leave to differ with him, and that is where he says that the "Dances of Death," most of which date from the fifteenth century, were the descendants of the Etruscan and other funeral dances. These latter were joyful dances, while the fifteenth century Dance of Death was emblematic of the universal power of death and took the gloomy view. We fancy that Ruskin is near the truth in his opinion that the Dance of Death was the outcome of the unsettling of men's minds and the break up of the old faith at the Reformation.[2]

We offer our cordial thanks to Dr. Crawfurd for a delightfully written book.

Abhandlungen aus dem Gebiete der Geburtshilfe und Gynaekologie.

Herausgegeben von Professor Dr. W. TAUFFER, Director der Frauenklinik der Königl. Ung. Universität zu Budapest. Band II., Heft 2. Berlin: S. Karger. 1913. Pp. 417.

THE major part of this publication consists of a monograph by Dr. Scipiades, in which he considers in great detail and in a most painstaking manner the various complications which can occur in a case of pregnancy complicated by a myoma of the uterus. The monograph extends over some 375 pages, and the author discusses the subject very fully. He considers in turn pregnancy with a myoma of the uterus, labour under the same conditions, and lastly the puerperium. The first part of the monograph, published in 1912, dealt with the relation between myomata of the uterus and sterility.

There is a vast amount of information contained in this work and the author has expended immense labour in collecting cases and histories. If we consider only the simple question of the presence of symptoms in these cases we shall get some idea of the completeness of the work. The author concludes that 82·8 per cent. of patients pregnant with a myomatous uterus complain of symptoms, and that in some 91 per cent. the symptoms are due to the presence of the tumour. The most frequent complaint, occurring in some 34 per cent., is that of pain. The questions as to the nature of the onset of the pain, its course, its degree, its character and localisation, are all discussed in turn. The next most common complaint after that of pain is some alteration in the abdominal girth. In 28·5 per cent. of the cases the symptoms are due to interference with the functions of the neighbouring viscera, and in 7·6 per cent. there are constitutional changes directly due to the presence of the tumour itself. Every other possible complication that may occur in connexion with a fibroid tumour associated with pregnancy is discussed in the same thorough way. The author has summarised not only his own experience, but also all the information contained in the literature of the subject, and the result is a piece of work of much value.

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[1] Vita Veri in Hist. August.

[2] Modern Painters, vol. v., cap. iv.

There is also an article by the same author on the operations of hebosteotomy and extraperitoneal Cæsarean section.

Leitfaden für das Embryologische Praktikum, und Grundriss der Entwicklungslehre des Menschen und der Wirbeltiere.

Von Professor Dr. ALBERT OPPEL. With 233 illustrations in the text. Jena: Gustav Fischer. 1914. Pp. 314. Price 9 marks.

THIS book forms a guide for the student and practitioner to the study of practical embryology. The first part deals with the general principles of the subject and the aim and methods of practical embryology. A consideration of evolution, epigenesis, development and growth, some factors influencing development, methods of obtaining embryological material, technique, and a description of various experiments which may influence development follow.

The second part of the book deals with the ovum and spermatozoon, fertilisation and segmentation, and the development of the three primary layers of ectoblast, mesoblast, and endoblast. There is also a very good account of the formation of the membranes and placenta. The third part forms a most interesting atlas of serial sections of the early stages of development in the embryo of the toad, frog, blind-worm, fowl, rabbit, pig, and man. The fourth part deals very clearly and well with the development of the various organs and tissues derived from the three primitive layers. A good index and glossary with a full bibliography complete a useful book.

Anæsthetics: Their Uses and Administration.

By DUDLEY W. BUXTON, M.D. Lond. Fifth edition, enlarged. London: H. K. Lewis. 1914. Pp. xiv.–477, with numerous illustrations. Price 10*s.* 6*d.* net.

THIS well-known text-book is brought thoroughly up to date in the present edition, and Dr. Dudley Buxton is to be congratulated on the production of a very complete and authoritative work. The references and footnotes show clearly how much labour has been expended in order that nothing might be overlooked which was worthy of note, and the author does not unduly press his own views as against those he quotes from other authorities. Thus his advocacy of the dosimetric administration of chloroform by the Vernon Harcourt inhaler, familiar to all students of anæsthetics, is not too prominently vaunted, and the simpler methods receive adequate consideration. Dr. Buxton still recommends, we notice, induction by gas and ether as a preliminary to chloroform and to open ether. Many anæsthetists hold that the use of a closed inhaler, even for a short time early in the administration, is detrimental to perfectly quiet respirations later on, at any rate in abdominal cases; but no doubt Dr. Buxton's experience leads him to prefer the quick induction, and his liking for giving oxygen with his anæsthetics probably enables him to counteract what might be the baneful influence of a "closed" induction.

The historical chapter in the book is very fully written, and includes an interesting account of the part that hypnotism has played in the evolution of anæsthetics, and in his medico-legal chapter the author discusses almost every conceivable question that could arise from the ethical or legal aspect of anæsthesia. The chapter on local analgesia of all kinds is particularly well illustrated with diagrammatic anatomical plates.

In a book of such high general excellence it is permissible to point the finger of criticism at any slight defect, and we would traverse the author's statement that "phthisical persons will take nitrous oxide and ether without detriment," even though it is qualified by the reservation "when the coexistent bronchitis is not severe." We believe that in such cases ether from a closed inhaler should be altogether avoided. Again, in the conduct of intranasal operations by means of nitrous oxide and ether when more than one application of ether is necessary, Dr. Buxton recommends waiting for return of consciousness before making the second application. We do not believe this to be the best practice, nor is it in accordance with the level continuity of anæsthesia that the author recommends elsewhere in his book.

Lectures on Dietetics.

By MAX EINHORN, M.D., Professor of Medicine at the New York Post-Graduate Medical School. London: H. K. Lewis. 1914. Pp. 156. Price 4*s.* net.

A GREAT physician, not long dead, used to say that the best book he knew on dietetics was the "Physiologie du Goût," and in these days of wordy conflict between food faddists and food theorists we might well be tempted to go back to Brillat-Savarin and learn the secrets of eighteenth century French gastronomy, derived largely from centuries of experience under the oldest civilisation in the world in the Far East.

The common sense of the old Gascon lawyer is reflected in these lectures. Addressed to graduates, they assume a sufficient knowledge of the chemistry and constituents of food and of the physiology of digestion. Plunging at once into the question of digestibility, Dr. Einhorn warns us that the time required for breaking up food in the stomach is no real guide, as in reality the main place for digestion is in the small intestine. We are no longer dependent on the observations of Beaumont on his case of gastric fistula, but have a far larger range of observation from lavage of the stomach after test meals, as practised by Leube and Penzoldt. Professor Einhorn would shock many by some of his dicta. In health he advises us not to be afraid of foods that are not easily digested, as the stomach and duodenum lose digestive capability if they are pampered too much. He considers it may be as disadvantageous to eat too slowly as to eat too fast, but this fault is rare. "Live sensibly, and have a good meal, and a little conversation with your meals," and have a wait between the courses; this is sound and pleasant advice.

In his chapter upon diet in acute disease the general advice given is interesting, for Professor Einhorn has the courage to discountenance low feeding, especially in enteric fever. But in his remarks on this disease he exhibits a deficient knowledge of its history and of Graves's position in the matter of "feeding fevers." When Graves propounded his aphorism he was not aware of the distinction between "typhoid" and "typhus," or that the former was an affection of the bowels; ulceration of Peyer's patches from the irritation of undigested masses of food was not known to the medical profession in 1843, when Graves's lectures were first published.

There are many excellent dietaries given, and an interesting chapter on the uses and methods of duodenal feeding concludes a volume which for sound judgment can be highly recommended.

Taschenbuch der Augenheilkunde für Ärzte und Studierende.

Von Dr. CURT ADAM, Privat-docent für Augenheilkunde an der Universität, Berlin. Berlin und Wien: Urban und Schwarzenberg. 1914. Pp. 395. Price 8 marks.

THE scope of this book is described in the introduction, where two "childishly easy methods of investigation of the greatest value" are described. These are the method of oblique illumination and that of transmitted light, or what is often called the distant direct method. It is expressly stated that only those diseases of the eye which can be diagnosed without the use of the ophthalmoscope are at all fully dealt with; there is, however, a short section on intraocular diseases.

The book is clearly intended primarily for general practitioners, but it will be found well worthy of study by ophthalmologists. Particularly useful for the latter are the 40 pages in which modern methods of general treatment are discussed. They give an excellent résumé of the diagnosis and treatment of syphilis and tuberculosis, and of the use of sera, radium, electricity, and so on. The "special" part on external diseases, iritis, glaucoma, and squint, though rather telegraphic in style, is characterised by the accuracy of its statements, the lucidity of the exposition, the emphasis of important diagnostic features, and the adequacy of its advice on treatment. Thirty pages are devoted to injuries of the eyes, and 20 pages to workmen's compensation. The regulations as to sight in the German and Austrian armies are given. Finally, there is a useful compendium of prescriptions. The book has been translated into English, French, Italian, Russian, and Spanish, and can be cordially recommended.

Medical and Sanatorium Benefit Regulations, &c.

Edited by J. HENRY LLOYD for Charts, Limited. London: Sir Isaac Pitman and Sons, Limited. 1914. Pp. 232. Price 5*s.* net.

THIS is a volume containing the full text of the clauses in the Insurance Acts and in the Regulations made under them concerning medical and sanatorium benefits, together with the principal memoranda and circulars dealing with these subjects that have been issued by the Insurance Commissioners. A system of classification has been adopted which has for its object the rendering readily accessible of any information sought for by medical practitioners, druggists, members of Insurance Committees, and others, who in the course of their duties may have rapidly to look up some point in connexion with National Health Insurance. For this object four varieties of type are used, so that anyone who has once made himself familiar with the book may know at a glance whether the passage he is reading is part of a section of a statute, of a regulation or order of the Commissioners, of an explanatory memorandum, or of an editorial note.

The system of classification referred to above appears to fulfil its object adequately in keeping all the information likely to be required upon any subject within the group to which that subject naturally belongs. There are seven such groups, and on the page which contains a list of them each title is distinguished by a brightly coloured border, the colour being repeated on tabs so placed as to guide the reader to the commencement of each article. Such a method of arrangement has considerable merit. It is essentially a matter of charting, and familiarity with the chart is necessary before it can be made use of; but we have little doubt that anyone who has once learnt his way about in the volume under review will find it useful as a work of rapid reference. It will also be an advantage to him to have what there is concerning the subject which he wishes to study given in full without abbreviation or paraphrasing.

It is regrettable that the issue of regulations and memoranda relating to national insurance has been so rapid and constant that any collection of them, though complete when first issued, has been apt to become obsolete, necessitating continual noting up and additions. The early period of the working of the Insurance Acts is, however, now over, and the inconvenience referred to must necessarily be less in future than it has been hitherto.

The Science and Practice of Dental Surgery by Numerous Authors, with an Appendix on Dental Jurisprudence.

Edited by NORMAN G. BENNETT, M.A., M.B. Camb., L.D.S. Eng. (Oxford Medical Publications.) London: Frowde and Hodder and Stoughton. 1914. Pp. 797, with 993 illustrations. Price £2 2*s.*

A TREATISE on any subject which is the combined work of many authors must necessarily have, as is admitted in the preface to this book, certain defects. The principal defect in this volume is that certain of the articles are contributed by authors showing a thorough grip of general pathology, while others are written by those who apparently do not possess that knowledge or, if they do, are unable to express it in their contributions. In certain of the articles the writing is clear and lucid; in others the meaning is often extremely ambiguous. Another defect is the unequal consideration given to the different subjects; for example, irregularities of the teeth are very fully treated, but the important questions of caries and chronic general periodontitis are not discussed in a manner commensurate with their great importance.

Recent advance in dental science has shown the relationship between dental sepsis and general disease, and the object of modern treatment in dentistry lies in the direction of avoiding methods likely to lead to sepsis. One is therefore surprised to find such a full account of crown and bridge work, and in the article dealing with the latter subject types of apparatus are illustrated which cannot fail to produce stagnation areas, forming foci of infection. We trust that the editor in the next edition will remedy this defect and allow the general scheme of the work to be in keeping with modern ideas. There is much, however, in the pages of this volume which is excellent, more particularly the section on the etiology of irregularities of the teeth, contributed by Mr. Norman Bennett, the various sections written by Mr. J. G. Turner, the article on odontomes by Mr. W. W. James, the chapter on the etiology of caries by Dr. J. Sim

Wallace, and the lucid exposition of oral sepsis and its effects by Dr. Stanley Colyer.

The printing and general "get-up" of the book are good, and a word of praise is due to Mr. Bennett for the able way in which he has carried out his task as editor. A useful bibliography is added to each chapter. The index is insufficient.

LIBRARY TABLE.

Plain Rules for the Use of Tuberculin. By R. ALLAN BENNETT, M.B. Lond., Physician in Charge, Devon County Council Tuberculosis Dispensary. Bristol: John Wright and Sons, Limited. 1914. Pp. 48. Price 2*s.* 6*d.*—The employment of tuberculin in the treatment of pulmonary tuberculosis still has many opponents, whilst other physicians are enthusiastic as to its benefits. We have no intention at the present time of discussing the various arguments which have been brought forward on either side, but the book now before us touches on some of the more important points, and for the most part we can endorse Dr. Bennett's views. We quite agree with him when he remarks that in estimating the value of any remedy it is first of all necessary to be sure that one is dealing with the particular disease against which the treatment is directed, and further we uphold his statement that the presence of tubercle bacilli is the only sure and certain sign of the existence of active tuberculosis in the patient. The deductions to be derived from the employment of tuberculin for diagnostic purposes are open to many serious fallacies; all that the "reactions" can prove is that the individual so tested has had at one time a tuberculous focus and that he possesses a certain acquired immunity to the disease. The series of cases described in this book illustrates the effect of tuberculin as it can be given to ordinary working-class out-patients. It thus illustrates what might be carried out in dispensaries under the National Insurance Act. The method adopted has been to give the tuberculin at intervals of from six to seven days, the doses being so graduated that focal reactions only are produced, general reactions being studiously avoided. This plan has commended itself to a large number of physicians. Details of technique are then given, which can be readily followed, the dosage being especially discussed. Dr. Bennett expresses himself in moderate terms, which commend themselves to the reader. We think, however, that some comments should have been made on rises of temperature due to auto-inoculation; unless recognised the occurrence of excessive auto-inoculation in a course of treatment with tuberculin may easily conduce to error. The author has succeeded in condensing a large amount of information into small space, without detracting from the directions necessary to the successful administration of tuberculin.

Communicable Diseases: an Analysis of the Laws and Regulations for the Control thereof in Force in the United States (Public Health Bulletin, No. 62). Prepared under the direction of the Surgeon-General, United States Public Health Service, by J. W. KERR, Assistant Surgeon-General, and A. A. MOLL, A.B. Washington: Government Printing Office. 1914. Pp. 699. Price, paper, 50 cents.—This Bulletin is intended as a sequel to Bulletin No. 54, which described the provisions governing health organisation in the United States. It is considered a conservative estimate that at least 25 per cent. of deaths occurring in the United States have communicable diseases as their direct or immediate cause. That implies over 3,000,000 cases of preventable diseases yearly, with 300,000 deaths. The history and present status of the Federal laws are first given, and are followed by a comparative account of the regulations in regard to infectious diseases in the various States under such heads as mode of investigation, quarantining, hospitals, disinfection, expenses, disease carriers, food, hotels and restaurants and so forth, travel, public assemblies, school inspection, jails and other public buildings, industries, penalties, &c. There is an appendix of court decisions on the subject. This occupies the first 261 pages. Pages 262 to 665 are taken up with the text of the Federal and State laws, while pp. 667 to the end (p. 699) are occupied by a very complete index. Those specially interested in infectious diseases, public health and school medical officers, and many others may find it a useful work of reference.

Principles of Property. By J. BOYD KINNEAR. London: Smith, Elder, and Co. 1914. Pp. 152. Price 1*s.* net.—At the present time it is good for all of us to understand the fundamental principles of the doctrine of private property whether as regards property in general or as regards property in land. The class which possesses property in land is an extraordinarily small one in comparison with the population of this country, but the possession of the land means so much to the country that all of us should know something about the rights of tenure in land, its values, and the payments entailed by its possession. On these things depends so much alike of our national income and of the potential wealth of our country. Mr. Boyd Kinnear, in a brief attempt to show the logical consequences of the principles as at present established, has managed to be extremely clear upon a very complicated and difficult subject, and the brevity with which he has been able to set out, for example, the arguments for and against the nationalisation of the land is wholly admirable. We recommend this little book to all our readers. It has nothing medical in it save that whatever concerns the *res publica* must deeply concern the medical profession, while we are certain that an acquaintance with the definitions of the nature of property and with the usual arguments as to its private and national ownership will be of value to medical men working at the political side of their calling, a number which has recently much increased.

Minimum Rates in the Chain-making Industry. By R. H. TAWNEY. London: G. Bell and Sons, Limited. 1914. Pp. 157. Price 1*s.* 6*d.* net.—This is the first volume of a series of books to be published under the Ratan Tata Charity Foundation in the University of London. It deals with the establishment of minimum rates in the chain-making industry under the Trade Board Act of 1909. The Ratan Tata Foundation was instituted in order to promote the study and further the knowledge of methods of preventing and relieving poverty and destitution. It conducts inquiries into wages and the cost of living, into methods of preventing and diminishing unemployment, and into measures affecting the health and well-being of workers and kindred matters. The results of its researches in connexion with the chain-making industry given in this small book are very interesting. From the experience categorised in the volume Mr. Tawney submits that the Chain Trade Board has proved that it is possible to fix and enforce minimum rates of payment for a highly technical industry, and to do so with the approval of public opinion and of all the main classes of persons concerned in the trade. We must not make too large deductions from a very special set of instances, but the conclusion is a highly significant one. The monograph is well done and will decide many readers to purchase both it and its promised sequels, the first of which, on the feeding of school children, has already appeared.

MISCELLANEOUS VOLUMES.

OUR miscellaneous volumes this week are so miscellaneous as hardly to admit of any grouping.

Geology, apart from its scientific interest, has much to commend it as a means of recreation, inasmuch as it is for the most part an "open-air" science; and while its serious study is hardly to be thought of by the majority of busy medical men, still a desultory interest in it has advantages. An important division of geology is that of fossils. Those of the northern hemisphere are already well represented in many excellent text-books, but those of the southern hemisphere have perhaps not received in any one text-book the attention which they certainly deserve, the literature concerning them being widely scattered in various scientific publications, as is pointed out by Professor E. W. Skeats, of the Melbourne University, in an introduction to *Australasian Fossils: A Student's Manual of Palæontology*, by FREDERICK CHAPMAN, Palæontologist to the National Museum of Melbourne (Melbourne, Sydney, Adelaide, Brisbane, and London: George Robertson and Co. 1914. Pp. 341). This deficiency the author has now remedied. Part I. of the book deals with general principles, while in Part II. we have a systematic arrangement according to geological epochs of the fossils of Australasia in a series of chapters, each of which is followed by a list of the characteristic fossils described therein and a bibliography of the literature of the division dealt with. The many well-produced illustrations make the volume an admirable guide to the identification of specimens, while an appendix contains some useful notes on collecting and preserving fossils. A good index completes an excellent manual for students and others who desire a guide to the literature of the subject.

The Voluntary Service Committee and the National Service League are opposing teams in the "tug of war" in which our national defence is the rope. In the *Case for Voluntary Service* (London: P. S. King and Son. Pp. 200. Price 1*s.* net) the problem is first considered in its political and social aspect, and the needs and provision of our imperial military policy are considered. Then follows a comparison of voluntary and compulsory armies, a discussion on the Territorial Force and the particular problem of home defence. Various existing compulsory schemes are examined, the National Service League's army estimates are adversely criticised, and the conclusion is arrived at that compulsory service would entail a triple burden in the necessity for an increased, not a diminished, fleet, the compulsory home army, and a voluntary professional army for over-seas purposes.

Life in an Indian Outpost, by Major GORDON CASSERLY (London: T. Werner Laurie, Limited. 1914. Pp. 320. Price 12*s.* 6*d.* net), is a well-written and entertaining account of the life of a European officer in India, away from the sealed-pattern business of an ordinary plains station. The particular spot was Buxa Duar in the native state of Cooch Behar, whose enlightened ruler was a well-known figure in English society at home, as well as all over India. The duties, pleasures, work, and sport are described unaffectedly, and the reader gets a clear idea of the realities of Indian life. The book is well illustrated with photographs, apparently by the author.

There are, as is well known, at least two sides to every question. In the *Dictators of Mexico* (London: Effingham Wilson. 1914. Pp. 218. Price 2*s.* 6*d.* net) Mr. JOHN DE KAY gives us the views and experience of one who has been in close business relation with the rulers of Mexico for 15 years. Mr. de Kay goes to the root of the problems of Mexico. He gives a very fair, yet sympathetic, appreciation of the characters of both Diaz and Huerta—the last named of whom would appear to be by no means so black as he is painted. Here he is described as a plain, simple, rugged, and honest man possessing many virtues and some vices, severe and courageous, a stoic who daily takes his life in his hands. The so-called "Constitutionalists" are described as self-seekers and mere bandits. Mr. de Kay especially denies the stories told about Huerta's personal habits, and particularly gives the lie direct from personal knowledge—he spent the five months from September, 1913, to January, 1914, in close contact with Huerta—to the calumnies so widely disseminated concerning the latter's private house at Popotla. All interested in Mexico or in the present situation there should read this book; particularly it will confirm the opinion of our Ambassador in Mexico, a presumably competent judge, who, in justification of Great Britain's recognition of Huerta, described him as the only discernible man capable of restoring a more stable condition in that distressful land of vast opportunities and unfulfilled promises.

In THE LANCET of Dec. 23rd, 1911, p. 1779, we noticed two volumes by GLADYS DAVIDSON detailing the plots of 200 operas. The same author now offers us *Stories from Wagner's Operas* (London: T. Werner Laurie. Pp. 106. Price 1*s.* net), told at greater length than the brief summaries such as are included in the former volumes. The operas now told in story are the *Flying Dutchman*, *Tannhäuser*, *Lohengrin*, *Tristan and Isolde*, *Die Meistersinger*, *Der Ring der Niebelungen* (viz., *Das Rheingold*, *Die Walküre*, *Siegfried*, *Die Götterdämmerung*), and *Parsifal*.

Two reference handbooks call for notice. A useful one, both to the inhabitants of London and to visitors to the metropolis is the *Social Guide, 1914*, edited by Mrs. HUGH ADAMS and EDITH A. BROWNE (London: Adam and Charles Black. Pp. 264. Price 3*s.* 6*d.*). Preceded by a calendar of events is a comprehensive account arranged in alphabetical order of the various social amusements and entertainments in which society is interested, and, in addition, there has been included this year special information regarding various travel centres in all parts of the world. The mode of gaining admission to different functions and the dress appropriate to them are not overlooked.——*The Directory of Women Teachers and Other Women Connected with Higher and Secondary Education, 1914* (London: The Year Book Press, 31, Museum-street, W.C. Pp. 152. Price 7*s.* 6*d.* net), has increased in bulk owing to the large number of names which have been added to the directory this year. The second portion of the book is devoted to general information, commencing with a chronicle of the year and giving details with regard to appointments, degrees, educational societies and organisations, administration of secondary education, literature of the year regarding education, and so forth; while the third portion is occupied by a list of secondary schools for girls and university and training colleges. The utility of the book is marred by the fact that in the list of secondary schools fees and other useful particulars are omitted in many instances.

FIRE PREVENTION.—In this country the British Fire Prevention Committee have rendered useful service in many directions, and their work has been much appreciated by those who have charge of hospitals and other large institutions. It was on the initiative of this committee that the International Fire Service Council held its meetings at the end of June in London, when representatives of European and American fire brigades were present. The King sent the council His Majesty's good wishes. Earl Beauchamp, in welcoming the visitors on behalf of the Government, dwelt on the importance of the work done by the International Fire Service Council and by the British Fire Prevention Committee. Among the important questions discussed were celluloid dangers, petroleum dangers, fires on board ship, and the formation of county motor fire brigades. A meeting of the council will be held next year in Copenhagen, and in the meantime it has been decided to issue an International Fire Dictionary in three languages. This is a case where it seems to us an international language would serve a useful purpose in a fourth version, and Esperanto has already been used with success in ambulance exercises.

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COLLOTHIOL PREPARATIONS.

(AGENCY: F. H. MERTENS, 64, HOLBORN VIADUCT, LONDON, E.C.)

THESE interesting preparations of sulphur in a colloidal form are products of the Clin Laboratories in Paris. There is good reason for believing that sulphur in the colloidal form is considerably more active than sulphur in the ordinary form. The elixir collothiol is prescribed in diseases of the respiratory tract, particularly where there is secretory disturbance. It is also used in rheumatoid arthritis, while it is a useful antidote to lead poisoning since it readily converts lead compounds into the insoluble sulphide. Elixir collothiol is a pale yellowish fluid practically neutral in reaction. A drop of the elixir placed on a silver coin readily blackens it on warming. The elixir has a slightly saline taste. On evaporation ordinary sulphur separates and remains as a resinous mass. The elixir is clear but shows an immense number of mobile particles when examined with the ultramicroscope. Collothiol is also present in a pomade, an oily paste contained in a collapsible tube. It provides a powerful means for applying sulphur externally.

"VAPOROLE" NUCLEIN.

(MESSRS. BURROUGHS WELLCOME AND CO., SNOW HILL BUILDINGS, LONDON, E.C.)

The hypodermic injection of pure sterilised nuclein has attracted attention recently in connexion with its action in increasing the bodily resistance to bacterial invasion. It is recorded that these injections stimulate leucocyte formation and raise the opsonic index. The preparation has thus been employed in bacterial infections generally. The "vaporole" presents a convenient form for administering a definite quantity of the sterile solution of nuclein, the nuclein itself being derived from yeast cells. The preparation has also been reported on favourably in the treatment of alimentary toxæmia, in nervous prostration, and in disorders of nutrition.

POTATO EXTRACT PREPARATIONS.

(MESSRS. BAISS BROTHERS AND STEVENSON, LIMITED, 174, GRANGE-ROAD, BERMONDSEY, LONDON, S.E.)

The treatment of rheumatism, gout, lumbago, synovitis, and so forth, by potato juice was described in a paper in THE LANCET of April 11th, 1914, by Mr. Heaton C. Howard. Potato juice is now supplied in two pharmaceutical forms—namely, ext. solani liq. and ung. solani. The extract is a dark brown fluid smelling of aromatics and distinctly also of the potato. We found that it rapidly reduces alkaline copper solution and it also produces a beautiful silver mirror when heated with alkaline silver solution. It gives further a precipitate with calcium chloride when the mixture is heated, a part of which dissolves on allowing the fluid to cool. Potassium salts are present in considerable quantities, and probably in the form of citrates or tartrates, or both. Alkaloid reagents gave negative results. Iodine and bromine were without effect. The preparations are interesting and will no doubt receive further trial.

SEDOBROL.

(THE HOFFMANN-LA ROCHE CHEMICAL WORKS, LIMITED, 7 AND 8, IDOL-LANE, LONDON, E.C.)

This combination presents sodium bromide in an appetising bouillon basis. Sedobrol consists of yellowish tablets which are practically completely soluble in warm water, but there is a separation of a distinct quantity of fat. The solution has the pleasant flavour of meat bouillon, but the bases are said to be of vegetable origin. We found that only a small precipitation occurred with bromine indicating the presence of a small quantity of nutrient, but on adding alkaline hypobromite there was marked effervescence of nitrogen gas due to nitrogenous bases. The presence and amount of bromine was confirmed, each tablet containing 17 grains of sodium bromide. In spite of there being only a trace of common salt present the flavour of the bouillon is pleasantly saline. The claims made in regard to sedobrol are: (1) that free dilution is ensured, which together with the presence of the stimulating vegetable extractives obviates gastric disturbances; (2) that by its medium bromide may be given in the form of a dietetic, the patient being unaware of the presence of the drug; and (3) that it enables the physician to give bromide while gradually withdrawing the daily intake of sodium chloride, which can be done without rendering the diet insipid. Clinical examples are given of the advantages of this means of administering bromides. Of course, it is highly desirable in the interest of the patient that sedobrol should be exclusively supplied by the physician and the treatment carried out under his observation.

PLASMON OAT FOOD.

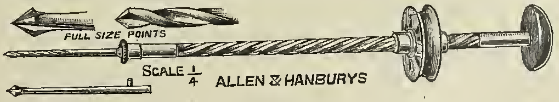
(INTERNATIONAL PLASMON, LIMITED, 66A, FARRINGDON-STREET, LONDON, E.C.)

On a previous occasion we reported upon plasmon rolled oats, but there has now been introduced a finely ground preparation known as plasmon oat food. The statement that there is added 10 per cent. of plasmon to the oat flour is confirmed by our analysis, since we found that the total protein amounted to 23·37 per cent., which is about double the quantity of protein found in ordinary oats. A distinct dietetic advantage is thus gained, chiefly of course in regard to the actual nourishing value of oatmeal.

New Inventions.

A NEW ARCHIMEDEAN DRILL.

I HAVE found the all-metal archimedean drill shown in the illustration much more satisfactory than other mechanical drills for making the screw-holes in plating fractures. The flanged wheel which drives the drill gives a comfortable grip for thumb and finger or hand, and can be held lightly without slipping when wearing rubber gloves.



As the pressure on the bone can be nicely regulated, there is much less risk of breaking the drill points than when using a drill worked by turning a handle. It will be found that time is saved and fatigue lessened by this instrument.

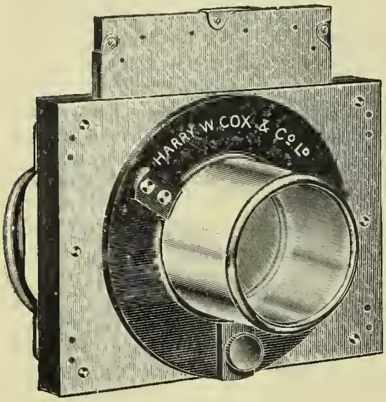
The drill has been made for me by Messrs. Allen and Hanburys, Limited, of Wigmore-street, London, W.

R. D. MOTHERSOLE, M.D., M.S. Lond., F.R.C.S. Eng.

Bolton.

AN X RAY SCREEN COMPRESSOR FOR THE DETECTION OF URINARY CALCULUS.

THIS is a small and extremely useful piece of X ray apparatus. It consists, as is shown in the illustration, of a short, blunt nozzle of lead glass, above which is fixed a piece of fluorescent screen. Between these is a small gap into which slides a cassete, or plate holder (half plate), containing an intensifying screen of tungstate of calcium. By means of two handles the operator can press the nozzle into the patient's abdomen and thus obtain an extremely bright view of a small area. He is able to explore renal and bladder regions, also to examine more closely supposed kinks and other intestinal conditions after the administration of bismuth. Any discovery he may make can be recorded by instantaneous exposure on the half plate which, in its casette, is placed in the opening below the screen while the exposure is made. Small calculi have been detected with this little instrument that would have evaded the more usual methods of X ray examination. In the last 310 cases of suspected urinary calculus examined by my colleague, Mr. H. M. Eccles, and myself at Guy's Hospital, 68 calculi were discovered, and in every case they were seen upon the screen prior to being photographed. This small screen compressor added materially to the successful detection of these stones.



Messrs. Harry Cox and Co., Limited, 47, Gray's Inn-road, W.C., have made the apparatus to my design.

EDWARD W. H. SHENTON, M.R.C.S. Eng.,
L R.C P. Lond.,
Harley-street. W. Senior Radiographer, Guy's Hospital, S.E.

MEDICO-LEGAL SOCIETY.

Discussion on Incipient Insanity.

AT the conclusion of the annual meeting of this society, held on June 30th at the rooms of the Medical Society of London, a discussion took place on Incipient Insanity, with particular reference to a Bill bearing upon this matter soon to be introduced into the House of Lords. The Bill has been drafted by the Medico-Legal Society, in consultation with the British Medical Association and the Medico-Psychological Association. It proposes to legalise the giving of medical treatment in the early stages of mental disease (subject to the consent of the patient), notwithstanding the provisions of Section 315 of the Lunacy Act, 1890, which make it illegal to exercise restraint over a person who is not a certified lunatic. The authority for treatment in an incipient case—which may be given in an approved house—for example, a mental hospital, general hospital, or private house or institution—is a declaration by a medical practitioner that the patient is suffering from incipient mental disease and is not suitable for certification as a lunatic or defective under the Mental Deficiency Act, 1913.

The PRESIDENT (Earl Russell) said the Bill was intended to deal with the circumstance that it was a very dangerous thing for a medical practitioner or anyone else to treat a person on the borderline of insanity. Anyone doing so was constantly running the risk of prosecution under Section 315 of the Lunacy Act, and the result was, they were assured by medical practitioners, that persons who might be saved from becoming actively insane, if treated in time, often were not treated because of this fear of prosecution. They were allowed to go from bad to worse until they reached a certifiable stage and might be brought under the Lunacy Act and properly treated. The Bill was a voluntary one; no person could be detained against his will. The Bill might be a better one if it were compulsory, but it would then have no chance of passing.

Dr. ROBERT ARMSTRONG-JONES, in opening the discussion, said that the whole object of the Bill was to avoid the stigma of certification. Mental disease was of all diseases the most curable in the early stages, but it was one of the most expensive and difficult to cure when rooted in any family. The Bill would make it possible for rich and poor to be treated outside the gates of an asylum; the potentially insane would be saved from the damning certificate. Dr. Armstrong-Jones mentioned that the Bill had the sympathy of the Board of Control under the Mental Deficiency Act.

Dr. FRED. J. SMITH said he wished to raise what was perhaps an academic point—Was there such a thing as incipient insanity? Was it not a condition which had been there practically from birth, though not exhibiting itself at first? He preferred the term used in the Bill, "mental disease of recent origin." For persons whose condition did not warrant compulsory detention the Bill would be an admirable one. The question arose whether a patient would realise his condition and submit himself voluntarily to treatment; such patients usually resented the idea that it was necessary they should be taken care of.

Dr. F. G. CROOKSHANK thought that without casting stones at the general practitioner there was a danger that under pressure the general practitioner would apply this Bill to persons who should be certified: that might be met by including in the declaration to be signed by the doctor the definite statement that the case was not suitable for certification. He foresaw difficulties because the declaration in effect authorised another practitioner to receive a patient and give treatment.

The PRESIDENT pointed out that the authority given by a medical practitioner was not necessarily to another practitioner, but to an approved person. It was felt desirable not to use the word "certificate," so that the patient could not be said to have been certified in any sense. The operation of the Bill would be under the direction of the Board of Control, whose inspectors would deal with cases which it was thought should be certified.

Mr. C. WOODWARD thought puerperal insanity a bad instance to choose for the purposes of the Bill, such persons were absolutely insane at the moment.

Dr. JAMES SCOTT (Holloway Prison) thought the Bill should deal with adolescent cases; in their case the stigma of insanity was a very real thing.

Dr. BERNARD H. SPILSBURY asked what would be gained by the Bill, seeing that it was already possible for a patient to give his consent to voluntary treatment. He thought refusals to undergo treatment would be frequent.

The PRESIDENT replied that the main object of the Bill was to avoid a prosecution of the medical practitioner under Section 315, but although the measure was a voluntary one there was no necessity for a formal consent to treatment. It was proposed to ask Lord Loreburn to introduce the Bill in the House of Lords, to explain its objects, and cause it to be read a first time. The Bill could not get any further this session, but it was thought useful to place it before the public.

Mr. ROLAND BURROWS, LL.D., in closing the discussion, said that care had been taken to eliminate from the Bill any term used in the Lunacy Act whose nomenclature had acquired a sinister meaning. The Bill declared, what was intended to be declared under the Lunacy Act, that if a person was not certifiable he could be treated. It was proposed that this should be done under proper conditions and without embarrassment to those in charge. The aspect of voluntary treatment had been over-emphasised in the Bill for the express purpose of allaying apprehension by the public. The Bill was based on a Government measure introduced in 1905, presumably with the approval of the Lunacy Commissioners. The Bill laid down no rule as to treatment; it merely provided that a person in whose custody a sufferer was should not be liable to be prosecuted. The form of treatment was a matter for a medical attendant. As to the definition of incipient insanity, he felt that the psychiatrists deserved criticism because they had not agreed amongst themselves what were the standards of sanity or insanity. The law had no regard to anything but objective symptoms.

THE LANCET.

LONDON: SATURDAY, JULY 4, 1914.

The Working of the National Insurance Act.

IN a recent article in the *Nineteenth Century and After*, advocating the establishment of a National Medical Service, Dr. W. A. BREND finds that the medical treatment available for the poor "neither covers the whole field nor is always of satisfactory quality." To obviate this and other defects Dr. BREND suggests the establishment of a salaried medical service, with local centres for medical treatment. In a town of, say, 20,000 inhabitants one centrally placed building would suffice for the assembling of patients for clinical purposes, the number of such buildings increasing proportionately to the population. This building, in his idea, would contain two or three consulting-rooms and waiting-rooms and a small theatre for minor operations. In larger clinics, or in the central one of a group, there should be in addition an X ray apparatus and a clinical pathological laboratory. The entire district should be divided into areas, and one salaried medical officer should be told off to do all the house visiting for each area, all consultation work being done at the clinic when the patient was in a position to attend. Each clinic, he considers, should command the services of from five to eight whole-time salaried general practitioners who should work in pairs by turns, at morning and evening hours, and should have the assistance of nurses as well as of specialists. There should be a chief medical officer to each clinic, with principal medical officers in all large towns and counties, and a central administrative staff. The officers of the clinical staff should be chosen persons, and ultimately a State diploma should be instituted. Dr. BREND cites the experience of the Great Western Railway at Swindon, where a scheme of something of this kind works well for 43,000 persons, and his views here are in accord with those of many who see no necessity for the institution of a State Medical Service. In small towns the cottage hospital and its staff might well develop into a clinical centre without any profound professional revolution. In larger towns coördination of the clinical centres with the hospitals might then be effected, and the latter institutions, relieved of trivial cases, would devote their energies, space, and funds to consulting and special work, and do so upon the existing voluntary system.

The advantages of a State Medical Service to the profession as a body should lie in greater leisure for keeping abreast of new knowledge, opportunity for post-graduate study and research work, regular hours and holidays, and certainty of income; but the drawbacks are as obvious as the advantages. Dr. BREND admits the danger that such a scheme might convert the practitioner into an official machine, and the time-honoured objection that it would preclude the public from the free choice of a doctor has to be got over. The amalgamation or coördination of all services at present having medical functions, culminating in the ultimate establishment of a Ministry of Health, is foreshadowed in all such suggestions for root and branch alteration of existing methods. We cordially agree with Sir CLIFFORD ALLBUTT in his advocacy, repeated this week to the Medical School of St. Thomas's Hospital, of a Ministry of Health, but this can be instituted without any deliberate transformation of medical men into a State Service. In considering the establishment of a State Medical Service as a panacea for the medico-economic ills of the public and the profession it may not be unfair to recall the fact that Dr. BREND was one of the optimistic supporters of the Insurance Act before it became law, as the columns of THE LANCET witness. But every one of the admitted defects of the Act, now brought to light as the result of experience of its working, was as a matter of fact insistently pointed out beforehand in these columns as probable. We refer to such defects, now confessed by everyone, as that the faulty conditions of club practice have reasserted themselves in panel work; that the bulk of the insurance work, instead of being evenly distributed, tends to fall into the hands of relatively few practitioners, so that many undertake more than they can adequately perform; that a cleavage has arisen in the profession between panel and non-panel doctors, tending towards the creation of rich men's and poor men's doctors; that the amount of sickness is suspiciously high in many places; that the pecuniary strain on hospitals has been increased; and that over-pressure has occurred among medical men.

We publish this week the last of a series of articles by our Special Commissioner, who has been giving a bird's-eye view of the working of the National Insurance Act during the early stages of its existence. The object of the articles has been to describe typical conditions in places geographically separated, as well as distinct in many of their main characteristics, some being large manufacturing towns, some country centres, some places where wages ruled high, some where poverty was a distinct feature, some where the feeling of the community was dead against legislation of the pattern to which the National Insurance Act belongs, and some where the Act was welcomed by many as an outward expression of their political creed. From the variety of experiences which our Commissioner has recorded there emerge certain definite lessons which do not in our opinion support the claim for the immediate institution of a State Medical Service, though they supply the reasons for what is, we think, an increasing advocacy of this revolution among medical men. To begin with, it is perfectly clear that the working of the National Insurance Act, as far as the administration of medical benefit goes, is only partially satisfactory. A certain number of medical men have benefited pecuniarily by the new legislation and in many places the standard of contract practice has been improved, but in other places the old conditions of club practice seem to be persisting unchanged. But as the public, which is thus inadequately served, is not so ignorant as it used to be, considerable resentment may be expected. As yet the administration of the Act appears to be cumbersome and expensive, and we anticipate considerable modifications before smooth working is established, though we cannot call with the same conviction that Dr. BREND does for the institution of a State Medical Service. The scheme of a National Medical Service, before it can attain any enthusiastic support at the hands of the profession, demands more unbiased and less impulsive consideration than was accorded to the Insurance Act, which it is hardly likely to get under the ægis of any political sponsorship.

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The Pituitary Body in Health and Disease.

THE evolution of our knowledge in regard to the functions of the various parts of the pituitary body, and the effects of their derangement in disease, affords one of the most interesting chapters in modern experimental medicine. This structure regarded for long as of little importance, if not actually vestigial in character, practically first received serious recognition from the acute observations of MARIE in 1886 in regard to acromegaly. Even after them, however, but little attention was paid to the possible activities of the pituitary body until the impetus given to the investigation of the ductless glands by the discovery of the internal secretions associated with some of them. Since the beginning of the present century a considerable literature, both on the experimental and clinico-pathological aspects of the pituitary functions, has arisen, and as a consequence our nosology has been increased by the differentiation of certain clearly defined diseases, and our therapeutics enriched by a valuable and powerful agent—pituitary extract.

The anatomy and histology of the gland have been studied with great care and with practical result. Clearly it consists of two portions, of different embryological origin, an anterior glandular lobe, derived from the pouch of Rathke, and a posterior or nervous lobe formed from a downgrowth of the neuroblast of the mid-brain. The glandular portion is divided into two—the pars anterior proper, which is by far the larger, and a smaller paler zone, called the pars intermedia, which forms an investment to the posterior lobe, from which it cannot be separated. It is also worthy of note that embryonic "rests" of hypophysial tissue are frequently to be found in the pharynx and base of the skull, which may possibly assist in carrying on the activities of the pituitary body, when it is diseased or injured in experiment. The complex relationship of the two parts of the gland to one another has rendered the actual differentiation of the special functions of each a matter of great difficulty, and even at the present time it can hardly be said to be complete. It appears to be definitely established that the anterior lobe is essential to life, since its complete removal results in death preceded by a train of symptoms to which the name of cachexia hypophysiopriva has been applied. Partial removal or disease of this structure results, according to CROWE, HARVEY CUSHING, and HOMANS, in a peculiar state of adiposity, with persistent infantilism in young animals or with retrogressive changes in the generative organs in adults. Conditions of polyuria, glycosuria, hypotrichosis, and œdema of the skin, with subnormal temperature and mental changes, are also common. Ablation experiments indicate that the posterior lobe is less essential to life, but show that it plays an important part in the utilisation of sugar in the organism, since after its removal a temporary lowering in the tolerance for sugars is followed by a lasting increase The study of extracts of the gland, first started by SCHÄFER and OLIVER in 1895, has yielded the surprising result that it is from the posterior lobe, with its smaller and relatively simple and indifferent structure, that the active extracts are obtained. The separation of pituitrin and the discovery of its important effects in raising blood pressure, slowing the pulse, inducing diuresis, stimulating the mammary glands, and increasing uterine contractions are now matters of common knowledge and experience. It is generally supposed that the active substance is elaborated in the pars intermedia, and it is suggested by HERRING that it passes into the posterior lobe and thence into the ventricles of the brain. As in the case of the other glands with internal secretions, it would appear that disturbances of the functions of the pituitary body may lead to associated alterations in other secretory structures, and some authorities have endeavoured to establish polyglandular syndromes as a result. It is clear that the pituitary body and the testes and ovaries are intimately associated, and histological changes in the interstitial cells of Leydig in the testes have been demonstrated after partial hypophysectomy. There is a good deal of evidence that the thyroid gland and the pituitary act synergically, and that each may to some extent act vicariously for the other, as Dr. R. G. HOSKINS has rather happily expressed it.

The results of disease of the pituitary body are, as might have been anticipated from its complex structure and important functions, of varying and far-reaching character. At first, on the analogy of thyroid disease, it was customary to differentiate conditions of over-activity or hyperpituitarism and those characterised by defective function or hypopituitarism. It soon became clear, however, that there were conditions which did not fall into either of these groups, owing to the fact that one part of the pituitary may be alone involved, or that by enlargement with over-activity it may interfere with the functions of the other part. For such conditions the term of dyspituitarism has been introduced. The matter is complicated, as has been so brilliantly demonstrated by HARVEY CUSHING and his co-workers, by what have been referred to as "neighbourhood symptoms"—that is, by the effects of increased intracranial pressure, and by the secondary effects upon other glandular structures. We publish in this week's issue of THE LANCET two interesting papers which illustrate the complexity and importance of pituitary disease and indicate that some of its forms may be less uncommon than is generally supposed. Dr. E. G. FEARNSIDES gives details of a dozen cases which have come under his notice, and the tables which are appended to his paper afford a valuable record of the varied symptoms which he has investigated in order to establish the diagnosis of pituitary disease. It will be seen from these that he has carefully examined the patients for those symptoms which might be expected to be present in derangements of the pituitary body in the light of our knowledge of its functions from physiological experiments. Consequently these tables are of considerable interest, although they are secondary to the main thesis of the paper, which is to establish the effects of pituitary disease upon the shape of the sella turcica and the diagnostic value of X ray examination of the base of the skull. Dr. FEARNSIDES concludes that in doubtful cases a change in the size or shape of the sella turcica, as seen in the X ray plate, is at present the most certain evidence of pituitary disorder, and for this purpose he states the actual measurements of the pituitary fossa as given by Professor ARTHUR KEITH, and the measurements in profile radiograms which may be regarded as abnormal according to Professor HARVEY CUSHING. The second paper is that by Dr. W. JOHNSON on a pathological investigation of four cases of pituitary tumour observed at Guy's Hospital. All four of these cases appear to have been cases of primary malignant disease of the pituitary body, and in only one was there any secondary growth. The growths presented peculiar and somewhat characteristic features, and were in most of the cases cystic. In one of them the ocular condition and the fields of vision were most carefully investigated by Mr. H. L. EASON, who has described the case fully in an interesting clinical lecture published in the *Guy's Hospital Gazette* of June 20th. There was complete temporal hemianopia, which occurs so frequently in pituitary tumours from the pressure of the growth upon the central part of the optic chiasma. Reproductions of the perimeter charts are given with Dr. JOHNSON'S paper.

It not infrequently happens that the detailed examination of a pathological condition by skilled observers throws light upon physiological conditions. The particular case of Dr. JOHNSON to which we have just referred affords an instance in illustration. The growth occupied the interpeduncular space completely and had broken through the optic chiasma in such a way that the right and left optic nerves appeared to be the direct continuations of their respective tracts—in other words, the fibres crossing at the chiasma were broken through. Fortunately, Mr. EASON'S observations were available to show that the temporal halves of the fields of vision corresponding to the nasal halves of the two retinæ were affected. Dr. JOHNSON availed himself of the opportunity offered of tracing the visual fibres backwards into the brain by studying the degenerations present. He found that the uncrossed fibres—that is, those that were not degenerated—occupied the outer and lower portions of the optic tract. This he confirmed by examination of one of the other cases. He also found that the degeneration was confined to the optic tract and ceased at the primary optic ganglia in the external geniculate body and the pulvinar. No degeneration could be discovered in the optic radiations or in fibres entering the calcarine cortex, thus negativing the statement that has been made that certain fibres pass directly to the occipital cortex without relays in the primary optic ganglia. We can commend both these papers to our readers as interesting, instructive, and suggestive.

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The Dogs Protection Bill.

THE Bill to prohibit the vivisection of dogs has been recently made prominent. The cause of much bickering and manœuvring in committee, its deliberation has incidentally led to complications involving questions of Parliamentary procedure and practice, and on Tuesday last, the first occasion when a quorum of the Standing Committee on the measure met, the Bill was withdrawn. Considerations of sentiment and also of sentimentality played so large a part in this Bill that discussion of its purport is still desirable, although impossible without hurting the feelings of some who are interested. The Bill received a substantial amount of support in the House of Commons, though it was by but a small majority that it secured a second reading. There is no doubt that a great many members were prepared to vote for it, unless they could be shown sufficiently grave reasons for refraining. Up to a certain point the question is not one of hostility to physiological research as such, though naturally the opponents of research supported the Bill, if only as a base for future assaults; but we have had here an appeal mainly to that affection for the dog which is widely manifested by all sorts and conditions of men and women, and based on perfectly comprehensible feelings and reasons. But that these feelings can be pressed too far is demonstrated at once by considering, as Lord LAMINGTON did in his presidential address this week to the Research Defence Society, the loss of our dog friends by distemper, a disease for which we may surely hope that scientific medicine, unfettered in its working, will soon find a remedy.

There is, admittedly, none of the domesticated animals which is capable of showing such devotion, such loyalty, to man as the dog; or which so uniformly receives in return so much human affection and companionship. Not to admit oneself a dog lover is almost to proclaim eccentricity, if not worse. But those whose bias would have led them to favour this Bill cannot be allowed to assume without protest that they alone entertain natural feelings. Physiologists and surgeons are just as fond of dogs as are any other members of the community. Some antivivisectionists, of course, have persuaded themselves that all who pursue physiological research are callous persons, who are insensible to feelings of compassion even if they do not gloat over cruelty for the mere sake of it; but this extraordinary misconception was surely not harboured by the majority of those who supported Sir FREDERICK BANBURY'S Bill in the division lobbies. To these, and all the many other reasonable people who are inclined to approve of a measure to exempt dogs from vivisection, it is surely sufficient to say that men of science do not practise vivisection with the object of causing or of witnessing suffering in any created thing. They seek the relief, not the infliction, of pain and suffering; and in pursuit of that aim they perform experiments only when they must, and only on those animals whose use appears most likely to advance knowledge and reveal truth. For the great majority of the experiments on living subjects, which are performed in this country, the dog would be an unsuitable subject, and the dog is therefore not used; but we cannot overlook the fact that our most distinguished physiologists, men whom the scientific world in all countries delights to honour, have said emphatically that for certain types of research the dog is indispensable. Even if it were not so at the moment, it would still be imprudent to lay down any absolute prohibition of the employment of dogs, for it cannot be foretold what the requirements of future research will be. No one, it may confidently be stated, would prefer to use a dog for the purposes of physiological experiment when another animal would do equally well. The alleged cheapness of stray dogs is one of the motives frequently imputed by the antivivisectionists to those who hold vivisection licences. This is nonsense. Stray dogs are not so cheap to buy as are some of the other animals commonly used by research workers; they are very much more expensive to feed, and they form but a minute fraction of the total number of animals annually subjected to vivisection. Rats, guinea-pigs, monkeys, horses, rabbits, and many other species are represented on the lists returned by those who hold vivisection licences. Some of these animals are much cheaper, some much dearer, than dogs. Economic considerations do undoubtedly enter to some slight extent into the choice of subject for physiological use—none of our laboratories are so wealthy as to be able to neglect so obvious a point; but economical considerations militate against, not towards, the vivisection of dogs, and certainly the guiding principle in the selection is the suitability of the animal in question for the particular purpose of the experiment. This principle makes the granting of discretion as to the animals to be used a necessity, but it does not preclude the erection of all needful safeguards.

There is, however, one comparatively unimportant branch of vivisection in which restriction, or at least limitation, is in our view reasonable. We refer to the vivisections performed before physiology classes as demonstrations of the truth of the statements of their teachers and their text-books. It is true enough that all such experiments are performed under anæsthesia, and that the animals upon which they are performed are not allowed to regain consciousness but are killed as soon as the demonstration is completed. Nevertheless, the case in favour of these acts of vivisection is less impregnable than in respect of vivisection to promote new researches and to acquire new knowledge; and we could contemplate without any misgiving the entire abandonment of dogs as subjects for these demonstrations. Whether it is in the public interest that such a restriction as this should be enacted by Parliament, and in an absolute form, is a matter of opinion. But there can be, in our judgment, no question that the passage into law of the infinitely more sweeping provisions of Sir FREDERICK BANBURY'S Bill would have been an unfortunate thing. In this connexion it is satisfactory, in the event of the reintroduction of a similar measure, that the Home Office has intimated the need of allowing the use of dogs for vivisection in special circumstances. Here is a plain enough indication that the mischief of total prohibition is recognised in those quarters best qualified, next to the medical profession and students of physiology, to pronounce an opinion, but a Bill containing such a clause would still be both retrograde and unnecessary. The responsibility of the research worker towards the dog would possibly be emphasised; this no one could quarrel with. But to transfer the responsibility of deciding whether or not the dog would be the most suitable animal for any projected experiment from the professor of physiology to the permanent official would be a countervailing disadvantage so great as to justify again the opposition with which Sir FREDERICK BANBURY'S Bill met, an opposition which had the sympathy of the great majority of the medical profession.

Annotations.

"Ne quid nimis."

THE CHILDREN'S COUNTRY HOLIDAY MOVEMENT AND INFECTIOUS DISEASE.

FEW philanthropic undertakings have made more headway in recent years, or are more deserving of support, than those for the provision of country holidays for town children. Institutions such as the Children's Country Holiday Fund, the Pearson's Fresh Air Fund, and the Ragged School Union send every year many thousands of children into the country from London and from the larger provincial towns, while in addition there are large numbers of special organisations in working-class parishes for sending smaller parties to the sea or to quarters inland. Like all good things, the movement has its occasional drawbacks, one of which is that sometimes the influx of town children into country cottages and quarters is suspected to be the starting point of infectious disease, or to cause an unsatisfactory degree of overcrowding in rural areas where the housing provision for the indigenous population is already none too liberal. Such results, it is clear, can to a large extent be prevented by the selection of suitable districts and quarters and by inquiries as to the health of the children before they leave the town. In order to promote organisation for this purpose the Local Government Board has issued a circular to county councils and sanitary authorities indicating the way in which they may usefully coöperate with the organisations in question. The circular points out that effective preventive action rests primarily with the agencies concerned, and that it is no part of the duty of the medical officers of health in the country districts to undertake special supervision of the arrangements made for these children or to advise the agencies organising the holidays. It is believed, however, that if intended arrangements are communicated beforehand, the medical officer of health in the country will generally be prepared to assist the agency by preventing children being sent to houses where they would be exposed to risk of infection or to insanitary conditons, while he will find it an advantage, should infectious disease occur, to be in touch with the persons who are responsible for the care and maintenance of the children. The circular advises the agencies to make personal inquiries through voluntary workers at the children's homes before they are allowed to go for the holiday, and to invite the assistance of the town medical officer of health in ascertaining whether notified or other infectious diseases are present in the houses from which the children are sent away. Reference is also made to the aid which the town authorities can give to the agencies in securing that the children are sent away for their holidays in a cleanly state. The document, which can be obtained on application to the Board, should be useful by securing the concerted action which is desired, and indicating the extent to which coöperation may reasonably be asked for.

GUNSHOT WOUNDS OF THE SPLEEN.

Michelson, in the *Deutsches Archiv für Chirurgie* (Band cxx., H. 1–4), discusses both diagnosis and treatment of this comparatively rare accident. He has collected 80 cases from the literature, and refers also to his own experiences. It is rare that the spleen is alone damaged; this occurred in only seven cases, including one of the author's; most often the stomach or intestines are injured as well. When this is the case it is usual that the symptoms associated with these lesions mask those attributable to the spleen. On this account the diagnosis of splenic injury is frequently impossible. The site of the wound is often not a safe guide, for an instance is recorded in which the injury occurred in the fourth interspace and yet the spleen was found to be damaged. Sometimes there is little hæmorrhage in the early stages; internal hæmorrhage is inconstant. Perhaps the most constant sign of splenic injury is rigidity of the abdomen. When the blood accumulates along the posterior wall of the abdomen or behind the peritoneum, a very characteristic physical sign is a slowly developing rigidity of the upper abdomen. Treatment is operation and removal of the spleen. The operative mortality is high, 33·3 per cent., no doubt not so much due to the actual lesion as to the associated complications found. But where operation is not performed all the cases have been fatal. The author speaks strongly against the procedure of tamponade; splenectomy is the operation of election.

THE MUSEUM OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THE conservator of the Museum of the Royal College of Surgeons, Professor A. Keith, has issued his annual report, and the show of specimens added during the past year is now on view, and will continue to be displayed until the end of the month. The anthropological collection has received many highly important additions, skulls of ancient Egyptians, of Stone-age inhabitants of England found in their flint mines at "Grime's Graves," near Weeting, Norfolk, of Anglo-Saxons, and also, and not the least significant, of modern English people. These show more clearly than is generally suspected how certain definite changes have occurred in the physical condition of the people in recent centuries. Dr. T. Wilson Parry has presented a set of preparations made by himself to show the implements and methods of trephining practised by people in a stage of stone culture.[1] Mr. Barrington Nash has presented a cast, undoubtedly authentic, of the skull of Robert Burns. A large number of preparations throwing light on the genitals in relation to changes in external sexual characters are preserved in the museum. During the past year a "mule" pheasant has been graciously presented by His Majesty the King, and in this instance the rudimentary genital glands, probably ovaries, have neither oviducts nor testicular ducts, and therefore the bird is regarded as asexual or neuter. Mr. E. T. Newton, F.R.S., has presented the first of his "reconstruction models," made up of plates of wax, enlarged from a corresponding series of microscopic sections, and put together so as to make one enlarged model of an embryo or organ. As usual, there are many additions to the pathological series. Mr. H. A. T. Fairbank presented to the Museum this year a preparation showing "Sprengel's shoulder," a congenital elevation of the scapula, bilateral, and occurring in a female infant who died from marasmus when six weeks old; and Dr. J. Kingston Barton has given to the collection some skiagrams showing an apparent disappearance of bone tissue in the clavicle and a congenital hiatus in the upper part of the front wall of the thorax. Space prevents us from any mention of numerous other additions of high interest. The annual display and the conservator's instructive report well deserve the attention of the profession and of scientists. The exhibition runs a risk of being overlooked now that Fellows of the College mainly vote by papers, so that there is no longer a great concourse of visitors at the College on the day for the election of members of Council.

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[1] THE LANCET, June 13th, 1914, p. 1699.

HYPOTHYROIDISM.

COMPLETE suppression of thyroid secretion produces the definite and well-recognised condition termed myxœdema, but partial suppression may also occur, and the effects are less definite, variable, and far from well recognised. To Dr. E. Hertoghe, of Antwerp, we are most indebted for their recognition. By patient observation extending over a period of 20 years he has shown that a variety of morbid states, the nature of which was not understood, are due to deficiency of thyroid secretion (hypothyroidism). Such deficiency is by no means uncommon and often is overlooked. In this country Dr. Leonard Williams has done much to call attention to it. Dr. Hertoghe has recently delivered a series of addresses in the United States on thyroid deficiency. In one, which is published in the Internal Secretions Number of *American Medicine*, he shows how widespread are the effects of thyroid secretion. He points out that no cell in the body can reach morphological perfection without thyroid stimulus. Hence the arrest of growth in cretins. Secondly, when a cell has done its work it disintegrates. If thyroid activity is below normal the carrying away of waste matter is incomplete, and mucin, fat, and other bodies accumulate, producing a certain form of œdema (myxœdema). Thirdly, he considers that the thyroid has a great influence over menstruation, pregnancy, and lactation; having an inhibitory action on menstruation, when it is subnormal the menstrual loss is increased. In pregnancy the thyroid is hypertrophied and pours into the blood an unusually large amount of secretion, thus, it is suggested, suspending menstruation. This action should be remembered, says Dr. Hertoghe, when repeated abortion resists ordinary treatment. After labour the increased thyroid secretion accelerates uterine involution and stimulates lactation. Dr. Hertoghe believes that hypothyroidism produces infiltration of every tissue, causing in muscles painful contractions, in nerves neuralgic and shooting pains, and in the central nervous system headache (migraine), dizziness, vertigo, and tinnitus, and in severe cases loss of consciousness, defective memory, and coma. To infiltration of glandular tissue Dr. Hertoghe traces serious and far-reaching symptoms: the sweat glands cease to act, intestinal secretions are dried up, hepatic activity is impaired, and canaliculi are compressed, causing a special kind of jaundice. Of effects on the skin he mentions premature falling and greyness of hair and striated and brittle nails. Loss of the outer third of the eyebrows he considers a striking sign. Eczema, psoriasis, seborrhœa, and alopecia find, he says, a favourable soil in the skin, and it is in these cases that thyroid extract gives good results. To infiltration of the bladder he attributes the formation of calculi or painful micturition. Bones, he says, become brittle, break easily, and are slow to unite. Hence thyroid extract is often useful in promoting the union of fractures. Cartilaginous tissues are also early affected. He describes as a pathognomonic symptom in the joints a crackling sensation like that produced by pressing on snow. Often the patient hears and feels crepitation of the cervical vertebræ. To infiltration of the cardiac muscle he traces a slow, weak pulse, and to infiltration of the nerve ganglia painful contractions with or without shooting pains in the left arm (false angina pectoris); to infiltration of respiratory mucous membrane dyspnœa, which in mild cases is intermittent and frequently mistaken for asthma. Hence the cases of asthma reported as cured by thyroid extract. In the gastro-intestinal tract the effects, he finds, are constipation and meteorism. He thinks that in time microbes migrate through the walls and reach the peritoneum and kidneys, and that the peritoneum in resisting invasion produces false membranes which grow into bands, causing kinks.

THE STREPTOBACILLUS PELLAGRÆ.

THE exhibition of a case of this disease at the recent meeting of the Dermatological Section of the Royal Society of Medicine recalls to our notice a paper on the streptobacillus pellagræ by Professor Guido Tizzoni, who occupies the chair of pathology at the University of Bologna.[1] The recent and more detailed researches among the rich material collected in pellagrous districts during the past year have enabled him to make known some new facts relative to the cultural characters and biological properties of the streptobacillus of pellagra which are of importance in establishing its more certain identification and in differentiating it more easily from the pathogenic and non-pathogenic micro-organisms which resemble it, and with which it might be mistaken on superficial examination. There are, according to Professor Tizzoni, two separate types of the streptobacillus, the streptococcal and the staphylococcal. The former is distinguished from the ordinary human streptococcus by the following characteristics: it passes through Carnot-Garnier tubes, which human and equine streptococci never do; in some phases of its evolution it presents distinctly bacillary forms; the lower limit of the temperature of development is higher than that of ordinary streptococci; it is not stained by Gram's method; it is distinctly hæmophile; it always coagulates milk within 24 hours, even after long preservation in a saprophytic state, while streptococci, both human and equine, coagulate milk only after one or more days; the colonies of the streptobacillus pellagræ in agar and gelatin differ from those of human streptococcus; and lastly, the cultures of the streptobacillus of pellagra sometimes undergo profound modification and pass from the streptococcal to the staphylococcal form. The second type, the staphylococcal, exhibits the following properties which distinguish it from the ordinary staphylococcus: it passes through Carnot-Garnier tubes, it develops in gelatin smaller and more granular colonies, it gives in fixation in gelatin rounder, larger, and more distinct colonies like those of the streptococcus, such cultures being paler in colour than the staphylococcus pyogenes, but acquiring the property of producing pigment after a saprophytic existence, the pigmentation being partial and never uniform as in the staphylococcus aureus and flavus; and lastly, when introduced under the skin or into the peritoneum of animals it never causes suppuration or fatal peritonitis. It appears, moreover, that there is no true transformation of one type into the other—i.e., a passing from the genus streptococcus to the genus micrococcus, but rather a simple transformation of a culture of a streptococcal type, by means of which, owing to a different grouping of the organisms, it assumes only from the microscopic point of view the appearance of the staphylococcus, retaining, however, in its colonies and gelatin cultures the fundamental characteristics of the streptococcus of origin.

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[1] Malaria e Malattie dei Paesi Caldi. Anno V., Fasc. II. 1914. Rome, Via Farini, N. 62.

THE VESALANIUM MISTAKEN FOR FRACTURE OF THE FIFTH METATARSAL BONE.

IN the *Boston Medical and Surgical Journal* of May 7th Dr. W. P. Coues has described a case of a very rare bony abnormality which is liable to be mistaken for fracture in X ray examinations. The vesalanium or bone of Vesalius of the foot is so rare that it is not mentioned in the standard modern works on anatomy of Sobotta, Piersol, Gerrish, Morris, Macalister, or Gray. It is described as follows by Professor Dwight in his "Clinical Atlas of the Variations of the Bones of the Hands and Feet": "The vesalanium, corresponding to the bone of the same name in the hand, is the proximal and external part of the tuberosity of the fifth metatarsal. It is excessively rare. I have never seen it in the macerated foot of an adult. Spronk has seen it at birth. I have once seen it in the skiagraph of a girl of 12. The entire base of the fifth metatarsal varies much in size. The vesalanium is usually more or less marked off by a groove on the plantar surface." The case reported by Dr. Coues is as follows. A healthy girl, aged 12 years, was seen at the Boston Dispensary. While running a week previously she slipped and fell, her ankle turning under her. After this she was lame and had considerable pain in the ankle. She was well developed and well nourished. Over the external lateral ligament of the ankle there was slight ecchymosis, and over the scaphoid bone tenderness. Movements of the ankle were free, but the child walked with a limp. A provisional diagnosis of sprain or fracture of the scaphoid bone was made, and the foot was immobilised in plaster-of-Paris. A skiagram showed what appeared to be the fracture of the base of the fifth metatarsal bone first described by Mr. Robert Jones in 1902. Its occurrence in childhood was thought most unusual. After two weeks the plaster was removed and another skiagram was taken which showed the supposed fragment in exactly the same condition as before, not united. There was distinct pain on pressure over the base of the fifth metatarsal, and it was supposed that the fragment was slow to unite. After another two weeks a skiagram showed the same condition. A skiagram was then taken of the opposite ankle which showed the same shell-like bone united to the base of the metatarsal by cartilage. All tenderness had disappeared in the left foot. The bandage was removed and weight-bearing on the foot was found possible. In consequence of the tenderness at the time of injury and afterwards an infraction of the cartilage uniting the vesalanium to the shaft could not be excluded. The importance of recognition of this rare abnormality is obvious. Dr. Coues suggests that some of the reported cases of fracture of the fifth metatarsal bone by inversion were examples of it, and others examples of fracture through the line of union to the metatarsal. A radiogram of the metatarsal bone on both sides should be taken in all cases in which fracture through the base of the fifth metatarsal bone has been diagnosed.

ARGYRISM FOLLOWING THE USE OF COLLARGOL.

CASES of chronic silver poisoning or argyrism are much less frequently seen than they used to be, in consequence of the disuse of silver as an internal remedy. In the *Journal of the American Medical Association* of May 2nd Dr. A. M. Crispin has pointed out that there is a danger that the prolonged use of the colloidal preparations of silver now in vogue, which are advertised as innocuous, may again familiarise us with argyrism. He reports the case of a young woman sent to him by her medical attendant with the request that she should be operated on for gall-bladder obstruction. Her complexion was of a dark bluish hue, with bright glistening eyes "compelling the wonder and admiration of all who beheld her." To the medical man it suggested a congenital heart lesion or intense cyanosis. This chromatic effect was a constant worry to an otherwise pretty girl. Sunlight seemed to increase the darkness of her colour. Examination of the chest revealed a perfectly normal heart and lungs. There were slight tenderness over McBurney's point and slight rigidity of the right rectus muscle. The most careful search failed to show any abnormality of hepatic function or anything to account for the blueness. On questioning she stated that she had taken collargol for four years under her medical attendant's advice, and had become "jaundiced." A blood count showed marked anæmia. Chronic appendicitis and argyrism were diagnosed. Before operating it was thought well to improve the patient's general condition and to try to clear her complexion. Potassium iodide had no effect on her colour. Acute coryza occurred, for which hexamethylenamine was given, and to Dr. Crispin's astonishment and the patient's joy her colour began to fade. She said that when she took her bath there was on the top of the water a supernatant film resembling oil, which she never observed before. Operation showed a chronically inflamed appendix, which was removed. The muscles and intestines had a bluish tinge. Dr. Crispin suggests that in a case of argyrism hexamethylenamine deserves a trial.

SECTION OF NERVE-ROOTS FOR BRACHIAL NEURALGIA.

DIVISION of the posterior nerve-roots has become a procedure of possible benefit in several conditions in which persistent pain constitutes the dominant symptom, and pain, too, which is often of so intractable and of so distressing a character as to justify what must be regarded as a serious operation. It has been practised, not only for the pain associated with the gastric crises of tabes dorsalis, with variable results, but also for erythromelalgia, again with some benefit in a few cases. For a case of persistent and acute brachial neuralgia this operation was done, and the report of the case is described by Sicard, Desmarsts, and Reilly in the *Revue de Neurologie* (1913, vol. xxvi., p. 107). The patient was a man aged 48. His complaint was severe paroxysmal algesia of the right upper limb. It resisted all forms of treatment and made the patient's life unbearable. An operation was finally agreed upon. The posterior roots of the seventh and eighth cervical nerves and the first dorsal were divided; the operation was performed with relative ease. The immediate result was relief of the pain. There was in addition complete anæsthesia of the skin areas supplied by the divided nerves. The reflexes were almost abolished. Recurrence of pain, however, followed, and two months later a second operation was performed at which the fifth and sixth cervical and second dorsal nerves were divided. There was some difficulty on account of adhesions resulting from the previous operation. The final result, however, was permanent relief of the pain. Now it was noted that there was, as before, complete anæsthesia. The reflexes were abolished. Movements were affected to some extent. There was no definite loss of power, but rather some unsteadiness of action, some ataxia. This was more marked when the eyes were closed. The patient could, however, perform all ordinary movements with fair accuracy. There was some loss of tone of the muscles. It was of interest to note that there was no adiadokokinesia, an observation confirmatory of Babinski's views of the nature and origin of this curious sign. In so far as the result showed abolition of the pain, it can be said that the operation was successful and justifiable.

ON the occasion of the tercentenary of the foundation of the University of Groningen the degree of Doctor of Medicine *honoris causâ* has been conferred upon Sir Edward Schäfer and Professor J. N. Langley.

THE MILK AND DAIRIES BILL AND THE BACTERIOLOGICAL EXAMINATION OF MILK.

BY R. TANNER HEWLETT, M.D. LOND, F.R.C.P. LOND., D.P.H.,
PROFESSOR OF BACTERIOLOGY IN THE UNIVERSITY OF LONDON (KING'S COLLEGE).

THE Milk and Dairies Bill, 1914, contains one important alteration, or rather addition to its predecessors. In Clause 5, Section 2, it grants powers to health authorities to take samples of milk for "bacteriological examination." Now, judging by the Bill of 1912, Clause 2, Section 3, it is by no means improbable that to the framers of the Bill this bacteriological examination is intended to cover examination for B. tuberculosis only, either by microscopical or inoculation methods. In such a sense and so far the idea is good, and is rendered acceptable by the additional enactment that such samples shall be divided into three parts and the necessary check examinations made as may be desired.

Unfortunately, in Clause 15 the word "bacteriological" is not defined, and it is certain that by most health authorities it will be regarded in its widest sense, an assumption rendered all the more probable by amendments which have been moved in committee to add the words "or other" to "bacteriological." This addition would include the whole field of biological, enzymic, and physical tests, which are constantly brought forward as being infallible methods of judging of the purity of milk, and which, though constantly shown to be more or less fallacious for public health work, yet have such an attraction for the hygienic enthusiast that it is well-nigh impossible to shake his belief in their infallibility. There can be little doubt that the introduction even of a general quantitative bacteriological examination of milk will be fraught with great difficulties and much unnecessary disturbance to those engaged in the milk trade, and should there be added to this anything approaching a qualitative examination, then there is scope for any quantity of misguided energy.

It appears to be forgotten by those who advocate this sort of control that no country has adopted it for legal purposes except in the case of certain special milks which are sold under certain fixed conditions and for which a special price is paid.

Quantitative Enumeration of Bacteria in Milk.

But there are some considerations which must be carefully weighed by those who advocate a simple quantitative enumeration of the bacteria present in a sample of milk as a criterion of its cleanliness and age, and which, if rightly apprehended, show that such a simple enumeration, while direct in its answer as to numbers, gives no reply as to the means by which such numbers are attained. Briefly these are some of the considerations:—

I. We have no reliable data as to what the bacteriological content of milk should be when milk is delivered to the public after such reasonably proper handling as is possible in commercial work. Figures purporting to give such information there are undoubtedly, but the conditions under which these were obtained are not the conditions of practice. How often milk is obtained from a cow direct, and simply kept in a vessel of some kind and examined after 24 or 48 hours at certain fixed temperatures, and the consequent multiplication ascertained. Now any butter-maker knows that if he wants his "starters" to sour more rapidly he must stir them well at intervals, and in ordinary practice milk from the time it leaves the cow till it gets to the consumer is in constant motion, which without doubt produces a profound effect on bacteriological multiplication. Again, the process of straining, especially when centrifugal cleaners are used, and also of cooling, all tend to increase the apparent number of effective organisms by breaking up colonies and rendering active organisms which by enclosure in such colonies had ceased to be available. The following experiment will show the effect of a centrifugal cleaner, which while actually removing many organisms (as could be seen by the qualitative character of the experiments) apparently increases the bacterial count. Six churns of milk were mixed and passed through a centrifugal cleaner running at about 600 revolutions per minute; before passing, 3,900,000 organisms per c.c.; after passing, 5,400,000 organisms per c.c. Also the effect of agitation becomes the more marked as the bacteriological content increases, and it is just at the time when multiplication has already taken place—namely, after arrival at the distributor's premises—that it undergoes the most drastic agitation, and the rate of increase is accelerated out of all due proportion.

II. Any value which might attach to a quantitative examination is completely lost if at any stage the milk be subjected to pasteurisation. It is quite possible to pasteurise milk in such a manner that there is no outward indication that this has been done, and yet the bacterial content be brought within any desired limits, and there would also be no indication as to how often this might have been practised. This is probably one of the most potent objections to bacteriological standards on account of the false idea of freshness which they may imply. This is not the place to enter into the question of the merits or demerits of pasteurisation, but, at any rate, it does not make for improvement in the milk-supply.

Bacterial Development in Milk in Ice-rooms and Ice-boxes.

III. With the effect of weather vagaries, of actual climatic conditions, as opposed to temperature, and of the awkward concurrence of an impoverished and tepid water-supply on farms at times when prolonged or excessive heat renders a plentiful and cold supply for cooling most necessary, there is not space here to deal, but the effect of holding milk in ice-rooms on bacterial development touches this question of bacteriological examination very closely.

It must be clearly understood that since (at least in the case of London) milk reaches the distributor each day during the hours of 12 midnight and 4 A.M., and again from 11 A.M. to 4 P.M., and that the usual times of delivery of milk to the consumer are from 5 A.M. to 7 A.M., and from 12 midday to 3 P.M., nearly half the day's supply arrives at a distributing station after the last round (12 midday) has been dispatched. The milk so arriving must be held for the next morning's delivery. This necessitates some hours' storage in ice-rooms, and for practical purposes a temperature of 45° F. is generally attained. It might be supposed that at this temperature multiplication would be so slow as to be almost negligible, but the results of a few experiments show that this is not the case, and the higher the initial count on going into the ice-room, the greater will be the development during storage. 1. A churn of milk chilled to 45° F. on the cooler contained 483,000 bacteria per c.c. The same kept 18 hours in the ice-room at 43°–45° F. then contained 970,000 per c.c. 2. The following results were obtained with churns of milk taken after passing a centrifugal cleaner, these being then kept in the ice-room at 45° F. for 18 hours.

(*a*) Before storage	4,000,000	bacteria	per c.c.
After ,, ...	12,320,000	,,	,,
(*b*) Before storage	2,000,000	,,	,,
After ,, ...	8,100,000	,,	,,
(*c*) Before storage	3,000,000	,,	,,
After ,, ...	10,300,000	,,	,,
(*d*) Before storage	2,220,000	,,	,,
After ,, ...	5,120,000	,,	,,
(*e*) Before storage	3,780,000	,,	,,
After ,, ...	5,550,000	,,	,,

3. Small samples of milk (50 c.c.) kept under similar conditions.

(*a*) Before storage	1,580,000	bacteria	per c.c.
After ,, ...	7,500 000	,,	,,
(*b*) Before storage	1,940,000	,,	,,
After ,, ...	8,500,000	,,	,,

These all have a very direct bearing on the results of taking samples of milk and placing them in ice-boxes and sending them to laboratories for examination. The temperature of an ordinary good ice-box is by no means steady, as the following readings will show:—

	Temperature.	
Time.	Inside.	Outside.
10 A.M.	37·5° F. ...	65° F.
1 P.M.	39·2° ...	67°
6 P.M.	41·0° ...	68°
10 A.M. (next morning) ...	59 0° ...	65°

If small samples kept constant at 43°–45° F. show the increase stated above, what will it be when the conditions are those of the ice-box, and yet when samples are divided into three it is impossible that all will be kept under identical conditions or be examined at the same interval of time. What a fruitful source of discrepancy and unjust deduction is here!

The following is an actual experiment made under such conditions. Two samples of milk were taken and placed for one hour in an ordinary good type of ice-box, such as is used for sending samples for bacteriological examination by rail or post, the copper receptacle being well packed with ice. A quantitative examination was then made in each case and the bottles returned to the box and kept in it for 24 hours and again examined. The temperature of the milks was then 60° F., with an outside temperature of 64°. The results were as follows:—

	Start.	24 hours later.
Sample 1	168,000	550,000
Sample 2	10,800,000	36,500,000

These samples were deliberately chosen to have a high and a low initial count respectively, and in each case show a very marked increase during an interval which would be a normal one if samples were dispatched by rail to bacteriological laboratories, as would be the case in most instances.

EPSOM COLLEGE.

THE annual general meeting of the governors of Epsom College was held at the office in Soho-square on June 26th, Sir Henry Morris, the treasurer of the College, being in the chair. He was supported by a very large number of governors, amongst whom were: Mr. S. Boyd, Sir John F. H. Broadbent, Mr. J. Paul Bush, Dr. F. Charlesworth, Sir William S. Church, Sir Thomas Boor Crosby, Sir Dyce Duckworth, Mr. A. P. Eldred, Dr. L. Grant, Dr. W. S. A. Griffith, Dr. F. de Havilland Hall, Mr. H. E. Haynes, Mr. H. Hilliard, Mr. D. Keele, Mr. J. B. Lawford, Mr. J. H. Morgan, Mr. W. A. Propert, Dr. G. Rankin, Sir James Reid, Dr. St. Clair B. Shadwell, Colonel Bruce M. Skinner, A.M.S., Dr. S. Sunderland, Dr. F. Taylor, Dr. W. E. Wynter, and Mr. E. P. Young.

The SECRETARY read the report of the scrutineers as to the successful candidates for pensionerships and foundation scholarships as follows:—

PENSIONERSHIPS.	Votes.
Nunn, Alice S.	5418
White, Marianna W.	4879
FOUNDATION SCHOLARSHIPS.	
Dyson, Malcolm H. C.	7576
Morgan, Algernon W.	7250
MacDowell, Thomas W.	3895

The SECRETARY reported that as vacancies had arisen since the voting papers were printed, Emma M. Daniell would be elected a "Pugh" pensioner and William G. Hughes would be elected a foundation scholar at the Council meeting which would be held immediately after the annual general meeting.

The annual report of the Council to the governors stated that the foundation had suffered during the years 1912 and 1913 by the uncertainty which had overshadowed medical practice throughout the country, many medical men having withdrawn their contributions. The Council urged upon all friends of the College to do their best to secure fresh annual subscriptions in order that the work hitherto carried out by the Royal Medical Foundation might be maintained. This comprised the provision of 50 pensionerships of £30 a year for members, or widows of members, of the medical profession in reduced circumstances, and of 50 foundation scholarships, by means of which board, clothing and pocket money, and an education of the highest class are given gratuitously to necessitous sons of medical men. The report further impressed upon those intending to leave money for the Foundation of Epsom College the great importance of mentioning in their wills the official title of the College—namely, "Epsom College"—as a legacy of £500 which the Council thought was certainly intended for the College, had recently been lost as a result of what was, if the Council were right, a clerical inaccuracy in the descriptive title of the College. The work of the College, the general health of the boys, and the school discipline had, as usual, been quite satisfactory. The various school games—cricket, football, and hockey—had been played with success, the football team having won most of its matches; the Officers' Training Corps was in a flourishing condition; an aero section and workshop had been instituted; and the various school institutions had been very successfully carried on. Since the last annual general meeting G. W. Davis had obtained an open scholarship in science at St. Mary's Hospital; L. V. Ardagh had secured an exhibition for classics at Wadham College, Oxford; A. R. Wood had won an exhibition for science at Clare College, Cambridge; and two old Epsomians had gained open scholarships at St. Bartholomew's Hospital in October last—namely, G. K. Bowes in science, and J. W. S. Dick in arts.

In proposing that the report be adopted Sir HENRY MORRIS referred to the suggestion which had been made by some persons that the Royal Medical Benevolent Fund and Epsom College ought to have compromised in regard to the bequest left by the late Miss Glenny. He said that it would have been most unjustifiable for the College to agree to such a proposal, as the Council was convinced that the testatrix intended the bequest for Epsom College, and their opinion was fortified by the statement in the proof of Mr. Crosse, the solicitor to the testatrix and one of the executors, that the executors were satisfied that Epsom College was entitled to the legacy, that being the institution the testatrix intended to benefit. Furthermore, the executors would have been failing in their duty had they not done their very best to enable the bequest to reach the destination intended by the testatrix. The chairman emphasised the point that an interval of four days had elapsed between the occasion on which Mr. Justice Joyce stated that if either side knew, either by inadmissible evidence or otherwise, that the legacy was intended for the other, the legacy ought not to be contested, and the day on which judgment was given in favour of the Royal Medical Benevolent Fund.

Mr. PARKER YOUNG explained the reasons which had actuated the committee of the Royal Medical Benevolent Fund in the course they adopted, and expressed the hope that there would be no future difficulties between the two medical charities.

Formal business having been transacted, a vote of thanks to the chairman, moved by Sir WILLIAM CHURCH and seconded by Sir THOMAS BOOR CROSBY, brought the proceedings to a close.

ROYAL COMMISSION ON VENEREAL DISEASES.

AT the forty-third meeting of the Royal Commission on Venereal Diseases evidence was given by Dr. J. J. Pringle, physician in charge of the skin department of Middlesex Hospital and President of the Dermatological Section of the Royal Society of Medicine.

Dr. Pringle stated that of 36,151 cases of skin disease dealt with in the out-patients' department of the Middlesex Hospital during the last 25 years, 1853, or rather over 5 per cent., presented indubitable evidence of syphilis. This figure did not represent the number of patients who had attended the hospital for syphilitic manifestations, but only those who had been referred to the special department as suffering from some affection of the skin. Of the 1853 cases of syphilis 925 were males and 928 females. Dr. Pringle thought that this apparent equality of incidence in the two sexes was due to the fact that men do not willingly attend hospitals during working hours, except for diseases which in their opinion threaten life or cause grave discomfort or pain. On the other hand, anything causing disfigurement impelled women to seek medical advice. Of the 1853 cases of syphilis already mentioned nearly 24 per cent. were foreigners.

Dr. Pringle stated that he could not see his way to supporting or advocating any measure of compulsory notification of venereal diseases. The medical profession was, he thought, practically unanimously opposed to it, and even if made confidential its effects upon the public would be merely to drive them to seek treatment from unqualified persons. His experience both in hospital and private practice convinced him that much of the syphilis existent in England was of foreign importation. He believed that a considerable number of prostitutes left their own countries because they were unable to ply their trade there, and spread the disease in this country. It was important that this matter should be further investigated and that steps should be taken to deal with it.

Public Health.

ANNUAL REPORTS OF MEDICAL OFFICERS OF HEALTH.

Metropolitan Borough of Stoke Newington.—In London sanitary and social progress is greatly affected by the increasing "tenementation" (if the word may be allowed) of houses originally built and contrived for single families, and Professor H. R. Kenwood's report on Stoke Newington for 1913 brings out very clearly the drawbacks to such a tenement house in working-class neighbourhoods. The proper washing and drying of body clothing, bedding, and household linen is always difficult in these circumstances, and in many cases it is impossible. The one copper in the basement or on the ground floor has to be approached through someone else's kitchen or scullery; there are few if any conveniences in the shape of mangles, washing boards, and the like, and the drying has to be done in a small room which must often serve as a living room, and which is crowded at times throughout the day. A tenement house lacks adequate space for healthy reasonable comfort or for children to play, has no provision for storing food or proper facilities for washing up, and no place for storing coal or wood. Little advantage can be expected from school education in "hygiene," or from visits of sanitary inspectors and health visitors, while the means of carrying out elementary requirements of cleanliness are absent. The local authorities in London are able to enforce the provision of a water-supply on each floor of a tenement house, but this is often met merely by the provision of a tap on the landing, and all dirty water has to be carried down one or more flights of stairs. It ought, in Professor Kenwood's view, to be possible to demand that a scullery sink should be provided on each floor. Where the total number of lodgers in a tenement house exceeds 12 the landlord is required to provide a second water-closet, but almost invariably this is placed alongside the other water-closet in the backyard. It should be on the first floor, where it could also serve if necessary as a slop sink. Provision should be required for the proper storage of food in respect of each tenement, against an external wall, and properly lighted and ventilated. Professor Kenwood also lays stress on the defective principle on which the laws relating to these houses are based. The landlord should be required to maintain his property in a sanitary state under a penalty, whereas at present "he has no obligation to do anything until insanitary conditions are belatedly discovered by the sanitary inspector and a notice is served upon him." Professor Kenwood is evidently of opinion that Section 15 of the Housing and Town Planning Act, 1909, of which much was expected, is inadequate for this purpose. Realising that the insanitary tenant is often by no means free from blame on his own account, the report advocates additional powers in by-laws relating to tenement houses by which the tenants themselves are made more responsible for cleanliness and the proper maintenance of sanitary provisions. It is difficult to read this report, which is confirmed by that of many other medical officers in recent years, without surprise that these matters have not already been more seriously taken in hand in London. The matter of tenement houses is one on which the Local Government Board and the London County Council might be expected to have a settled policy, in the active pursuit of which any necessary additional legislation should be strongly pressed for. Possibly the solution lies in the annual licensing of all such houses. Professor Kenwood reports what appears to be an exemplary penalty for milk adulteration in Stoke Newington. The defendant, who had several previous convictions against him, was proceeded against for selling milk containing 8 per cent. of added water, and was fined £100, with costs, with the alternative of three months' imprisonment.

Guildford Rural District.—Dr. R. W. C. Pierce refers to an investigation made by Dr. E. P. Manby for the Local Government Board, which showed that a shortage of working-class dwellings existed throughout the district, and particularly in five parishes. This confirmed the opinion which the medical officer of health had frequently expressed, but from which the district council dissented. It seems to be argued that no action need be taken by the local authority, as many of the cottages are occupied by persons working in other districts. This fact, however, hardly lessens the responsibility of the district council to use the Housing Acts for the purpose of providing cottages where there is a clear demand for them by persons working in their district, and it may be supposed that the council would have full control over the tenancies of any working-class houses which they provided under the Housing Acts. Dr. Pierce states that the four cheap cottages erected at Merrow by Mr. St. Loe Strachey could have been let over and over again. He doubts, however, if the solution of the rural housing problem can be found in attempting to build a £100 cottage, which really means the reduction of the cost of materials and construction to the lowest limits of habitability. The Merrow cottages are characterised in nearly all details by cheapness of materials and omission of many items usually considered necessary from the points of view of sanitation and convenience. A particular defect in such cheap cottages is the lack of cubic space; even old and otherwise insanitary country cottages frequently have a roominess which is absent from the modern cottage, in the construction of which the low common lodging-house standard of 300 cubic feet per person is too readily accepted. Good and substantial cottages, even when built in numbers by contract, cannot be erected in this part of Surrey under from £175 to £200 each. Dr. Pierce asks why the rural worker should be required to put up with a cheap and unsatisfactory cottage, and remarks that this country is not so impoverished that it is obliged to provide for its rural population by makeshift methods. In regard to the treatment of tuberculosis in non-insured persons (excluding dependents of the insured) a scale of costs was arranged last year between the district council and the county council of Surrey. The latter are to pay one-quarter of the total cost and the Treasury one-quarter. The other half is to be made up from the funds of the rural district council and from the Treasury grant in equal amounts, after deduction of any sums received from the patient. In 1913 tuberculosis work by the county council appears to have been limited to domiciliary visiting of insured patients by the county tuberculosis officer. A dispensary is now to be established in Guildford, and progress will be made with the institutional treatment of both insured and non-insured persons. The report refers to the working of the tuberculosis Order of 1913 in regard to tuberculous cattle; experience so far has shown that the veterinary examination of cows in the manner prescribed by the Order cannot take the place of systematic veterinary inspection of all the milking cows of the district, which is needed if the tuberculous cows are to be identified. It is noteworthy that out of five cows suspected to have tuberculous udders, on veterinary examination under the Order, four did not yield milk in which tubercle bacilli were found on centrifugalising.

Auckland Rural District.—This report, like the two above referred to, contains instructive information on housing questions. The Durham colliery village, as is well known, often consists of large numbers of houses built in rows, which do not allow of through ventilation, and have upper rooms the height and lighting of which are altogether inadequate. The houses have no yards or spaces belonging to the dwelling, but abut on unpaved common yards or back streets the chief feature of which is the line of capacious middens in between the rows of houses. It is evident from Dr. John F. Macdonald's report that the council of the Auckland rural district are making considerable progress under the Housing Acts in improving such villages, and that inspection is proceeding fairly rapidly. Plans are given in the report to illustrate clearances which have been made, and photographs show the great improvement which has resulted either by requiring closing, demolition, and rebuilding, or by getting the roofs of the houses raised and substantial large bedroom windows provided in place of the small apertures which formerly served as window spaces in the upper rooms. The work has been largely undertaken by different colliery owners as a result of the representations of the local authority and its public health officers. Self-contained yards have been added in some cases, and insanitary privy middens have been removed. Over 100 new houses were erected and occupied during 1913. Out of 397 cases of scarlet fever notified during the year 233 were removed to hospital. Dr. Macdonald gives a table to show the occurrence of secondary cases in households infected by scarlet fever (*a*) when the primary case was taken to hospital and (*b*) when the primary case was treated at home. While as many as 14 households were affected by return cases after the primary case had been sent home from the hospital, about four times as many secondary cases occurred when no hospital treatment was given to the primary case. In preparing this table Dr. Macdonald has in each instance reckoned the proportion of attacks on susceptible children under the age of 14.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN the 97 English and Welsh towns with populations exceeding 50,000 persons at the last Census and whose aggregate population at the middle of this year is estimated at 18,120,059 persons, 9192 births and 4193 deaths were registered during the week ended Saturday, June 27th. The annual rate of mortality in these towns, which had been 13·2, 13·5, and 12·9 per 1000 in the three preceding weeks, further fell to 12·1 per 1000 in the week under notice. During the first twelve weeks of the current quarter the mean annual death-rate in these towns averaged 13·9, against 13·1 per 1000 in London during the same period. Among the several towns the death-rate last week ranged from 4·9 in Swindon, 5·5 in Bournemouth, 5·6 in Southend-on-Sea, 6·1 in Hastings, 6·3 in Croydon, and 6·6 in Walthamstow, to 17·3 in Liverpool and in Middlesbrough, 18·3 in Oldham, 18·4 in Smethwick, 19·8 in Wakefield, and 21·1 in Stockton-on-Tees.

The 4193 deaths from all causes were 304 fewer than the number in the previous week, and included 394 which were referred to the principal epidemic diseases, against 395 and 390 in the two previous weeks. Of these 394 deaths, 144 resulted from measles, 93 from whooping-cough, 79 from infantile diarrhœal diseases, 35 from diphtheria, 30 from scarlet fever, and 13 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 1·1 per 1000 and coincided with the rate in the previous week. The deaths attributed to measles, which had been 131, 119, and 140 in the three preceding weeks, rose to 144 last week, and caused the highest annual death-rates of 1·8 per 1000 in Stockton-on-Tees, 1·9 in Dewsbury, 2·0 in Smethwick, 2·1 in Warrington, 2·5 in York, and 2·8 in Oldham. The deaths referred to whooping-cough, which had been 117, 111, and 99 in the three preceding weeks, fell to 93 last week; the highest death-rates from this disease were 1·6 in Middlesbrough, 1·9 in Gillingham, 2·1 in Warrington, and 2·4 in Barrow-in-Furness. The fatal cases of diarrhœa and enteritis (among infants under 2 years), which had been 80, 69, and 79 in the three preceding weeks, were again 79 last week, and included 15 in London, 8 in Liverpool, 7 in Birmingham, and 3 each in Smethwick and Manchester. The deaths attributed to diphtheria, which had been 38, 56, and 40 in the three preceding weeks, fell to 35 last week, of which 11 occurred in London, 4 in Birmingham, and 2 each in Edmonton, West Ham, and Bradford. The deaths referred to scarlet fever, which had been 26, 24, and 24 in the three preceding weeks, rose to 30 last week, and included 6 in London and 3 in Liverpool. The fatal cases of enteric fever, which had been 9, 16, and 8 in the three preceding weeks, rose to 13 last week, and included 2 in London and 2 in Liverpool.

The number of scarlet fever patients under treatment in the London Fever and the Metropolitan Asylums Hospitals, which had steadily increased from 2862 to 3038 in the six preceding weeks, further rose to 3088 on Saturday last; 440 new cases were admitted during the week, against 339, 391, and 405 in the three preceding weeks. These hospitals also contained on Saturday last 1100 cases of diphtheria, 304 of whooping-cough, 72 of measles, and 35 of enteric fever, but not one of small-pox. The 1045 deaths from all causes in London were 8 fewer than the number in the previous week, and corresponded to an annual death-rate of 12·1 per 1000. The deaths referred to diseases of the respiratory system, which had been 179, 143, and 163 in the three preceding weeks, fell to 144 in the week under notice, and were 17 above the number recorded in the corresponding week of last year.

Of the 4193 deaths from all causes in the 97 towns, 176 resulted from different forms of violence and 377 were the subject of coroners' inquests. The causes of 29, or 0·7 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in West Ham, Portsmouth, Bristol, Manchester, Salford, Bradford, Leeds, Sheffield, Newcastle-on-Tyne, and in 73 other smaller towns. Of the 29 uncertified causes of death, 6 were registered in Liverpool, 4 each in Stoke-on-Treut and in Birmingham, 3 in St. Helens, and 2 in Hull.

HEALTH OF SCOTCH TOWNS.

In the 16 largest Scotch towns with an aggregate population estimated at 2,293,200 persons at the middle of this year, 1276 births and 641 deaths were registered during the week ended Saturday, June 20th. The annual rate of mortality in these towns, which had been 15·6, 16·0, and 14·4 per 1000 in the three preceding weeks, rose to 14·6 per 1000 in the week under notice. During the first eleven weeks of the current quarter the mean annual death-rate in these towns averaged 15·7, against a corresponding rate of 14·0 per 1000 in the 97 large English towns. Among the several towns the death-rate in the week under notice ranged from 8·8 in Kilmarnock, 10·1 in Motherwell, and 10·5 in Clydebank, to 18·3 in Leith, 18·7 in Greenock, and 18·9 in Hamilton.

The 641 deaths from all causes were 10 in excess of the number in the previous week, and included 67 which were referred to the principal epidemic diseases, against 62 and 48 in the two preceding weeks. Of these 67 deaths, 20 resulted from whooping-cough, 20 from infantile diarrhœal diseases, 17 from measles, 6 from diphtheria, and 4 from scarlet fever, but not one from enteric fever or from small-pox. The mean annual death-rate from these diseases was equal to 1·5, against 1·1 per 1000, in the 97 large English towns. The deaths attributed to whooping-cough, which had been 23, 19, and 15 in the three preceding weeks, rose to 20 in the week under notice, of which 16 occurred in Glasgow and 2 in Greenock. The deaths of infants (under 2 years) referred to diarrhœa and enteritis, which had been 7, 16, and 10 in the three preceding weeks, rose to 20, and included 9 in Glasgow, 4 in Dundee, 2 in Aberdeen, and 2 in Hamilton. The fatal cases of measles, which had been 17, 19, and 12 in the three preceding weeks, rose to 17 in the week under notice, of which 8 were registered in Glasgow, 3 in Dundee, 3 in Hamilton, and 2 in Clydebank. The 6 deaths attributed to diphtheria, of which 2 occurred in Aberdeen and 2 in Motherwell, were slightly in excess of the average in the ten preceding weeks of the current quarter. The deaths referred to scarlet fever, which had been 5, 3, and 7 in the three preceding weeks, fell to 4 in the week under review, and comprised 3 in Glasgow and 1 in Kilmarnock.

The deaths referred to diseases of the respiratory system, which had been 96, 99, and 95 in the three preceding weeks, further declined to 77 in the week under notice; and 24 deaths resulted from various forms of violence, against 22 and 24 in the two preceding weeks.

In the 16 largest Scotch towns with an aggregate population estimated at 2,293,200 persons at the middle of this year, 1301 births and 605 deaths were registered during the week ended Saturday, June 27th. The annual rate of mortality in these towns, which had been 16·0, 14·4, and 14·6 per 1000 in the three preceding weeks, fell to 13·8 per 1000 in the week under notice. During the first 12 weeks of the current quarter the mean annual death-rate in these towns averaged 15·6, against a corresponding rate of 13·9 per 1000 in the 97 large English towns. Among the several towns the death-rates last week ranged from 10·5 in Clydebank, 11·0 in Falkirk, and 11·3 in Motherwell, to 18·0 in Aberdeen, 19·0 in Kirkcaldy, and 23·0 in Perth.

The 605 deaths from all causes were 36 fewer than the number in the previous week, and included 52 which were referred to the principal epidemic diseases, against 48 and 67 in the two preceding weeks. Of these 52 deaths, 18 resulted from whooping-cough, 10 from infantile diarrhœal diseases, 8 from diphtheria, 7 from measles, 7 from scarlet fever, and 2 from enteric fever. The mean annual death-rate from these diseases was equal to 1·2 per 1000, being 0·1 above the rate recorded in the 97 large English towns. The deaths attributed to whooping-cough, which had been 19, 15, and 20 in the three preceding weeks, fell to 18 last week, and included 15 in Glasgow. The deaths from infantile diarrhœal diseases, which had been 16, 10, and 21 in the three preceding weeks, fell to 10 last week, and included 4 in Aberdeen and 2 each in Glasgow and Leith. The fatal cases of diphtheria, which had been 3, 2, and 6 in the three preceding weeks, further rose to 8 last week, and included 3 each in Glasgow and in Aberdeen. The deaths from measles, which had been 19, 12, and 17 in the three preceding weeks, declined to 7 last week, and included 5 in Glasgow. The deaths from scarlet fever, which had been 3, 7, and 4 in the three preceding weeks, rose again to 7 last week; 3 of the deaths occurred in Glasgow. The 2 fatal cases of enteric fever occurred in Glasgow.

The deaths referred to diseases of the respiratory system, which had been 99, 95, and 77 in the three preceding weeks, further fell to 64 in the week under notice; 26 deaths were attributed to different forms of violence, against 24 in each of the two preceding weeks.

HEALTH OF IRISH TOWNS.

In the 27 town districts of Ireland, with an aggregate population estimated at 1,205,280 persons at the middle of this year, 641 births and 410 deaths were registered during the week ended Saturday, June 20th. The annual rate of mortality in these towns, which had been 17·8, 16·7, and 17·9 per 1000 in the three preceding weeks, fell to 17·7 per 1000 in the week under notice. During the first eleven weeks of the current quarter the mean annual death-rate in these towns averaged 19·5 per 1000; in the 97 large English towns the corresponding rate did not exceed 14·0, while in the 16 Scotch towns it was equal to 15·7 per 1000. The annual death-rate in the week under notice was equal to 17·6 in Dublin (against 12·2 in London and 15·2 in Glasgow), 17·1 in Belfast, 19·0 in Cork, 11·4 in Londonderry, 23·0 in Limerick, and 30·4 in Waterford, while in the 21 smaller towns the mean rate was 17·3 per 1000.

The 410 deaths from all causes were 3 below the number in the previous week, and included 50 which were referred to the principal epidemic diseases, against 36 and 40 in the two preceding weeks. Of these 50 deaths, 19 resulted from measles, 15 from infantile diarrhœal diseases, 8 from scarlet fever, 3 from whooping-cough, 3 from enteric fever, and 2 from diphtheria, but not one from small-pox. The mean annual death-rate from these diseases was equal to 2·2 per 1000, against 1·1 and 1·5 per 1000 in the English and Scotch towns respectively. The deaths attributed to measles, which had been 19, 21, and 16 in the three preceding weeks, rose to 19, and comprised 8 in Belfast, 5 in Dublin, 5 in Sligo, and 1 in Drogheda. The deaths of infants under 2 years referred to diarrhœa and enteritis, which had been 10, 4, and 10 in the three preceding weeks, further rose to 15, of which 7 were registered in Dublin and 6 in Belfast. The fatal cases of scarlet fever, which had been 6, 1, and 4 in the three preceding weeks, rose to 8, all of which occurred in Belfast. The deaths attributed to whooping-cough, which had been 11, 6, and 8 in the three preceding weeks, declined to 3, and were all recorded in Cork. The 3 deaths referred to enteric, of which 2 were registered in Belfast and 1 in Dublin, were slightly in excess of the average in the earlier weeks of the quarter. The fatal cases of diphtheria were recorded in Belfast and Lurgan.

The deaths referred to diseases of the respiratory system, which had been 85, 63, and 67 in the three preceding weeks, were 68 in the week under notice. Of the 410 deaths from all causes, 142, or 35 per cent., occurred in public institutions and 6 resulted from various forms of violence. The causes of 12, or 2·9 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the 97 large English towns the proportion of uncertified causes of death did not exceed 0·7 per cent.

In the 27 town districts of Ireland, with an aggregate population estimated at 1,205,280 persons at the middle of this year, 665 births and 364 deaths were registered during the week ended Saturday, June 27th. The annual rate of mortality in these towns, which had been 16·7, 17·9, and 17·7 per 1000 in the three preceding weeks, fell to 15·7 per 1000 in the week under notice. During the first 12 weeks of the current quarter the mean annual death-rate in these towns averaged 19·2 per 1000; in the 97 large English towns the corresponding rate did not exceed 13·9, while in the 16 Scotch towns it was equal to 15·6 per 1000. The annual death-rate in the week under notice was equal to 15·5 in Dublin (against 12·1 in London and 13·2 in Glasgow), 17·5 in Belfast, 12·9 in Cork, 10·1 in Londonderry, 12·2 in Limerick, and 13·3 in Waterford; while in the 21 smaller towns the mean rate was 15·9 per 1000.

The 364 deaths from all causes were 46 below the number in the previous week, and included 36 which were referred to the principal epidemic diseases, against 40 and 50 in the two preceding weeks. Of these 36 deaths, 13 resulted from measles, 11 from infantile diarrhœal diseases, 6 from whooping-cough, and 2 each from enteric fever, scarlet fever, and diphtheria, but not one from small-pox. The mean annual death-rate from these diseases was equal to 1·6 per 1000, against 1·1 and 1·2 per 1000 in the English and in the Scotch towns respectively. The deaths attributed to measles, which had been 21, 16, and 19 in the three preceding weeks, declined to 13 last week, and included 5 in Belfast, 3 in Dublin, and 2 in Sligo. The deaths of infants under 2 years referred to diarrhœa and enteritis, which had been 4, 10, and 15 in the three preceding weeks, fell to 11 last week, of which 5 occurred in Belfast, 4 in Dublin, and 2 in Dundalk. The fatal cases of whooping-cough, which had been 6, 8, and 3 in the three preceding weeks, rose to 6 last week, and included 4 in Belfast. The deaths from scarlet fever, which had been 1, 4, and 8 in the three preceding weeks, declined to 2 last week; both deaths occurred in Belfast. The 2 deaths from diphtheria, one of which occurred in Dublin and the other in Cork, corresponded to the average in recent weeks. The 2 deaths from enteric fever were slightly in excess of the average; one occurred in Dublin and the other in Limerick.

The deaths referred to diseases of the respiratory system, which had been 63, 67, and 68 in the three preceding weeks, were 57 in the week under notice. Of the 364 deaths from all causes, 119, or 33 per cent., occurred in public institutions, and 1 resulted from violence. The causes of 10, or 2·8 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the 97 large English towns the proportion of uncertified deaths did not exceed 0·7 per cent.

THE SERVICES.

MARRIAGE "OFF THE STRENGTH."

IN face of the difficulty that at present exists in maintaining our military forces at their full authorised strength, any proposals that may increase the popularity of the army deserve careful consideration. They will always have a distinctly medical interest.

The great majority of soldiers serving with the colours must be unmarried, but the presence of a considerable leaven of married men has generally been held to have a good effect on the whole body of troops. The proportion of men allowed to marry, or whose married condition is recognised by the grant of certain allowances, varies from 100 per cent. in the case of senior non-commissioned officers down to 4 per cent. in the artillery and 3 per cent. in the infantry private. When placed on the married roll the man and his wife enjoy certain privileges and are granted certain allowances. But over and above the men who marry "with leave," in most corps there are many instances of soldiers who have married "without leave," and the condition of these men, their wives, and their families, very generally leaves much to be desired. An inquiry into this matter has been conducted by Mrs. Tennant, and her report [1] to the Secretary of State for War has recently been published. Mrs. Tennant is satisfied that hardship is caused by the present regulations to many men who are of an age at which they might reasonably expect to marry, but who, if they do so, must either leave the army or expose their wives to the poverty, discomfort, and distress almost inseparable from marriage "off the strength." This is particularly the case with sergeants in the home battalion of a regiment whose other battalion is in India. All the sergeants in the Indian battalion may marry, but only 50 per cent. of those in the battalion at home. When married sergeants come home from India, invalided or otherwise, they have to be absorbed into the home battalion before any of the sergeants in the latter may marry. To what extent marriage off the strength exists is apparently a question difficult to answer, the evidence adduced being very conflicting; but the conclusion was come to that in no case are the numbers negligible; its results are regarded as wholly bad, affecting both the fighting efficiency of the soldier (who shares with his family the rations intended for himself alone) and his health and general moral condition. Mrs. Tennant's principal recommendations are that all sergeants permitted to serve beyond 12 years should be allowed to marry, that 50 per cent. of the remainder should have the same privilege, and that a candidates' list should be established, admission to which would carry certain privileges, such as provision of convenient lodgings at a fair rent, instruction of the women in needlework and the care of infants, and the establishment of labour exchanges for women. For the young soldier marriage must be discouraged, and this discouragement must be "unwavering and untempered by contradictory charity." Other important recommendations are that the practice (at present permitted) of allowing men married off the strength to take their rations home should be absolutely prohibited, and that sleeping out passes should be restricted to married soldiers on the candidates' list. The proposals made would not, Mrs. Tennant thinks, lead to any great increase in expenditure.

Lady Haig contributes a report agreeing in many points with that of Mrs. Tennant: the establishment of a "waiting list" for men wishing to marry, from which they would pass on to the married establishment when a vacancy occurs; the building, or provision, of cheap quarters for families married off the strength, and the discontinuance of the practice of men taking their own rations home to their families are among the points regarded as essential. Mrs. Wilberforce would permit marriage off the strength to men of between 7 and 12 years' service under certain conditions. Mrs. Wavell chiefly insists on the utter misery resulting from marriages off the strength, and would grant no sleeping-out passes in such cases. The Hon. Mrs. Maxse would withdraw some of the privileges now possessed by the "off the strength" married woman, would establish a "waiting list," and confer certain privileges on those married couples admitted to it; she believes that the present military regulations "are the worst possible method of dealing with the question, and are, in fact, so illogical that they are not now carried out." Mrs. Robb does not believe that questions connected with the administration of the married roll are as carefully inquired into at generals' inspections as more purely military matters.

We have mentioned a few points specially emphasised in this report, which is a model of conciseness. The question is rather a difficult one to handle owing to the lenient view that has been taken for so many years of breaches of the regulations. We incline to think that a greater stringency or severity in the application of the rules laid down would in the end be the kindest course to pursue; this is the opinion of each of the contributors to the report, which is of a most thorough and exhaustive character, and deals admirably with a difficult subject. The Financial Secretary to the War Office stated in the Commons on Tuesday (June 23rd) that it is now being considered, and that action would be taken as quickly as possible to remedy the undesirable conditions.

ROYAL NAVY MEDICAL SERVICE.

The following appointments have been notified:—Staff-Surgeon: E. B. Kenny, to the *Pembroke*, additional, for disposal.

NAVAL MEDICAL RESERVE.

In order to afford officers of the Naval Medical Reserve opportunities of keeping in touch with the Naval Service in times of peace, His Majesty the King has approved, by an Order in Council, of such officers being re-employed or undergoing courses of instruction during peace in the following conditions: (1) To receive full pay at the rate of 17*s*. a day while re-employed or undergoing courses of instruction; and (2) to be under the same conditions as regards pension, &c., in case of death or injury as would be applicable in the event of their being called upon to serve in time of war or emergency.

ROYAL ARMY MEDICAL CORPS.

Colonel C. Birt has been appointed to officiate as Deputy Director of Medical Services to the Sixth (Poona) Division of the Southern Army in India.

Lieutenant-Colonel S. G. Allen has been appointed to command No. 28 Company, Royal Army Medical Corps, at Gibraltar. Lieutenant-Colonel E. M. Hassard has arrived home from India. Lieutenant-Colonel C. H. Hale, D.S.O., has been appointed to hold charge of the Military Hospital at Sialkot Cantonment. Lieutenant-Colonel E. G. Browne has taken up duty as Senior Medical Officer at Peshawar. Lieutenant-Colonel A. L. F. Bate has been appointed to the Recruiting Medical Staff at Woolwich. Lieutenant-Colonel H. E. Winter has been appointed to hold charge of the Military Hospital at Colaba, Bombay. Lieutenant-Colonel H. H. Brown has been appointed Senior Medical Officer to the North-Eastern Coast Defences at Newcastle. Lieutenant-Colonel W. E. Hardy has been appointed to hold charge of the Military Hospital at Calcutta. Lieutenant-Colonel C. A. Young has been transferred from Shrewsbury to Chatham.

Major H. G. F. Stallard, Mhow Division, has been appointed Deputy Assistant Director of Medical Services (Mobilisation) at Headquarters. Major J. G. McNaught has been placed under orders for service abroad. Major L. Addams-Williams has been transferred from Karachi to Quetta. Major H. L. W. Norrington has arrived home from Malta. An exchange on the roster for service abroad has been approved between Major R. Rutherford and Major J. S. Bostock; the latter officer will remain on the Home Establishment. Major C. T. Samman has taken up duty as Specialist in Mental Science to the Southern Army in India. Major R. L. Popham has joined at Peshawar. Major J. W. West has arrived home from India. Major J. Cowan has been transferred from Lahore to Pachmarhi Cantonment. Major E. W. Bliss has been appointed to the Chatham District. Major E. T. Inkson, V.C., has been appointed Deputy Assistant Director of Medical Services to the Wessex Division. Major J. G. Gill has arrived home for duty from Rangoon. Major E. E. Parkes has been appointed to the Military Hospital at Jubbulpore. Major J.

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[1] Report of an Inquiry by Mrs. Tennant regarding the Conditions of Marriage Off the Strength. Cd. 7441. London: Wyman and Sons. 1914. Price 2*d*.

Tobin has arrived home from Gibraltar. Major H. M. Nicholls has been transferred from Poona to the Scottish Command. Major A. H. Safford has taken up duty in the Eastern Command. Major C. A. J. A. Balck has been appointed Specialist in Physical Training to the Dublin District. Major W. S. Harrison has been appointed Specialist Sanitary Officer at Jamaica. Major J. S. Gallie has been appointed to hold charge of the Military Hospital at Caterham.

Captain H. S. Dickson has arrived home from Gibraltar. Captain J. A. B. Sim has been transferred from the London District to the Aldershot Command. The following Captains have been placed under orders for service abroad during the coming trooping season: P. Davidson, D.S.O., H. B. Kelly, J. M. M. Crawford, C. Bramhall, H. J. J. Fawcett, and S. E. Lewis. Captain W. L. Baker has been transferred from the Eastern Command to the London District. Captain A. E. Hamerton, D.S.O., has been appointed to the Colchester District. Captain A. L. Stevenson has arrived home on leave of absence from Secunderabad Cantonment. Captain E. Bennett has been transferred from the Military Hospital at Purandhar to Deolali Cantonment. Captain G. Baillie has rejoined for duty at Colchester. Captain J. R. Yourell has joined at Rangoon. Captain A. L. Foster has arrived home from the Military Hospital at Aden. Captain D. S. B. Thompson has joined the Egyptian Army. Captain M. C. Wetherell has been appointed to hold charge of the Military Hospital at Fethard. Captain H. F. Joynt has been transferred from Cape Town to Wynberg. Captain A. S. Cane has taken up duty at Purandhar. Captain J. L. Wood has been appointed to hold charge of the Military Hospital at Richmond. Captain D. S. Buist has arrived home from Egypt. Captain S. S. Dykes has been transferred from Lebong to the Military Hospital at Dum Dum. Captain R. E. Todd has been appointed to the Public Health Department in Egypt. Captain L. V. Thurston has taken up duty in the Aldershot Command. Captain T. J. Mitchell has been transferred from the Military Hospital at Lahore to Subathu Cantonment. Captain W. J. Tobin has joined at Bangalore. Captain P. S. Tomlinson has been appointed to the Military Hospital at Roorkee. Captain O. R. McEwen has been appointed to the Irish Command. Captain C. E. L. Harding has been transferred from Quetta Cantonment to Aden. Captain A. G. Wells has been appointed to the Scottish Command. Captain J. Startin has arrived home on leave of absence from Satara Cantonment. An exchange on the roster for service abroad has been approved between Captain A. A. Meaden, serving at Colchester, and Captain J. M. H. Conway, adjutant of the Royal Army Medical Corps School of Instruction at Leeds; the former officer will proceed abroad instead of the latter. Captain E. B. Lathbury has arrived home for duty from Bareilly. Captain S. Field has been appointed to the Irish Command. Captain A. N. R. McNeill has taken up duty at Lichfield. Captain T. C. C. Leslie has been transferred from the Military Hospital at Youghal to the Allahabad Brigade. Captain J. H. Campbell has been appointed to Edinburgh.

Lieutenant F. S. Tamplin has arrived home from the Military Hospital at Gibraltar. Lieutenant S. D. Large has been appointed to the Scottish Command. Lieutenant W. L. Fretz has taken up duty at Peshawar.

INDIAN MEDICAL SERVICE.

Lieutenant-Colonel G. J. H. Bell, Inspector-General of Prisons, has been appointed to officiate as Inspector-General of Civil Hospitals in Burma, vice Colonel O. Evans. Lieutenant-Colonel A. W. T. Buist has been transferred from Campbellpore to Dalhousie. Lieutenant-Colonel G. McIver C. Smith has been transferred from Ludhiana to Murree. Lieutenant-Colonel S. H. Henderson has been appointed a Member of the Legislative Council of the United Provinces of Agra and Oudh. Lieutenant-Colonel C. T. Hudson has been appointed Civil Surgeon at Dharwar.

Major W. W. Jeudwine has been appointed to officiate as Civil Surgeon at Ferozepore, vice Major S. H. Lee-Abbott granted leave of absence. Major E. F. G. Tucker has arrived home from India. Major H. B. Steen has been appointed to officiate as Medical Officer to the 24th Parganas and Medical Inspector of Emigrants during the absence of Lieutenant-Colonel E. A. R. Newman. Major H. A. H. Robson has been appointed Civil Surgeon at Murshidabad in addition to his own duties. Major G. King has been appointed Civil Surgeon at Manbhum. Major W. H. Cazaly, medical officer 125th Rifles, has been appointed Specialist in Advanced Operative Surgery to the Fifth (Mhow) Division.

Captain L. P. Stephen has been appointed to hold civil medical charge at Ratuagiri. Captain T. S. Ross has been placed on special duty in Madras. Captain R. G. G. Croly has been appointed to Madras Presidency in the Civil Medical Department. The services of Captain W. L. Harnett, civil surgeon at Kamrup, have been placed at the disposal of the Government of Bengal Presidency. Captain D. C. Kemp has been appointed District Medical and Sanitary Officer at Tiuuevelly and Medical Officer to the Central Jail at Trichinopoly. Captain W. Lapsley has been appointed to the Civil and Prison Department at Gonds. Captain C. M. Goodbody has been appointed Director of the Medical Department in Bikaner State. Lieutenant E. R. Armstrong has been placed in charge of the Bacteriological Research Laboratory at Brigade Headquarters at Jhelum Cantonment.

THE MILITARY SURGEON.

The June number of the *Military Surgeon* is chiefly concerned with the regulations of the Medical Corps of the United States Army, particularly with a circular to Militia medical officers, who may perhaps be called to service in Mexico. The importance of their work in recruiting is emphasised, and their duties in watching the conservancy of camps and securing prophylaxis of venereal diseases and typhoid fever are very distinctly enforced. THE LANCET'S account of the dinner in London to Surgeon-General W. C. Gorgas is reprinted. It caused some searchings of heart that the military surgeons of the United States at their recent meeting, in accordance with their regulations, only saluted at the last note of the British National Anthem, played in honour of the arrival of an English guest, who stood at the salute all through. Crotalin, rattlesnake poison, is a dangerous drug it is almost impossible to sterilise completely. Over one-third of the specimens investigated at the Hygienic Laboratory in Washington were found not to be sterile. As it causes a local necrosis and almost destroys the bactericidal properties of the blood its use requires the utmost caution. A fatal case, in which it was being used for epilepsy, has been reported. Major Lyster has had his method for purifying water adopted by the army. A canvas bag weighing 6½ lb. and holding 38½ gallons of water has 15 gr. of hypochlorite of lime dissolved in it. The water is sterile after five minutes and the water bottles are filled from taps fitted at the base of the bag. There is an account of the hospital train of the Constitutionalist General Villa in Mexico. There are 25 cars; one is an operating room, one for bad cases, one for the staff, one for food, one for dressings; other cars had tiers of canvas cots and seats for wounded. There were 12 native surgeons and 20 male nurses. The train also carried the equipment for eight field hospitals and other medical stores. General Villa is reported to have said after the battle of Torreon that every wounded soldier was on the hospital train when the engagement closed. Major P. P. Lester, of the Colorado National Guard, was shot and killed by strikers near Walsenburg, Colorado, when attending a wounded militiaman under fire on April 29th.

VOLUNTARY AID DETACHMENTS.

The War Office announce that a committee has been appointed to inquire into the working and organisation of voluntary aid detachments. The chairman is Sir W. R. Lawreuce, Bart., and the medical members of the committee are Colonel Sir George T. Beatson, K.C.B., Colonel Sir J. R. A. Clark, Bart., Major Sir Anthony A. Bowlby, C.M.G., and Surgeon-General W. G. MacPherson, C.M.G. The secretary is Lieutenant-Colonel G. B. Stanistreet, R.A.M.C.

ROYAL SOCIETY OF MEDICINE: ELECTRO-THERAPEUTIC SECTION.—An interesting meeting of this section took place at Oxford on June 27th. Many members met together at the Radcliffe Infirmary for tea, and later Sir William Osler addressed the section. Sir William Osler made some interesting remarks drawing attention to the astonishing progress in the electrical treatment of disease and in radiography in recent years. It was remarkable that two of the pioneers to whom electricity owed much were both laymen—John Wesley and Franklin. Of course there was no doubt that the real founder of electrical methods was Duchenne—the first who placed the electrical diagnosis of disease on a sound foundation.—Immediately following Sir William Osler's short address an excellent demonstration of the instruments and methods used in Oxford was given by Dr. W. J. Turrell, physician electro-therapeutist to the Radcliffe Infirmary. Dr. Turrell specially drew attention to diathermy and the use of the static machine, and later he showed many interesting cases that he had treated. The members of the section were delighted with the survey of the new building of the infirmary, and particularly with the complete installation in the electrical department. A dinner subsequently took place at Queen's College, Mr. C. Thurstan Holland, President of the section, in the chair, and the guests included Sir William Osler, Professor Perkins, the Rev. C. Cronshaw, treasurer of the Radcliffe Infirmary, and others. Sir William Osler proposed the health of the section, which was replied to by the President, who also heartily thanked Dr. Turrell for the trouble he had taken and the excellence of his demonstration.

MEDICAL PRACTICE UNDER THE INSURANCE ACT.

(BY OUR SPECIAL COMMISSIONER.)

(Concluded from p 1842.)

L.—NORFOLK AND NORWICH, WITH A NOTE ON IPSWICH.

FROM Lowestoft I went back into Norfolk, selecting naturally Norwich as the centre from which to make my investigations. Here I first interviewed men holding high positions on one or more of the committees concerned in working the Insurance Act, and I found that opinions and anticipations differed widely from those propounded by equally good authorities in Lancashire and Yorkshire and in parts of Scotland. One leading and representative practitioner found his fellow medical men in Norfolk "too individualist for anything like organisation. They are all little Popes and resent any interference; yet they are up against many social problems that can only be solved by legislation following on collective action." Certainly something very similar was said to me at Edinburgh by those who were opposed to the Act, but in the industrial districts of England and Scotland on the whole a contrary opinion is being held. It is generally assumed that medical men now see the necessity of union, only they find it difficult to agree upon the course for which they should unite. In Norfolk a pronouncedly independent spirit makes common procedure difficult. The Act is resented by some because it has brought with it common procedure, and establishes committees to interfere in a man's private affairs and leads to compulsory levies. The Norfolk men expect Panel Committees to become more and more bureaucratic, and many of them do not view the idea with relish.

The Medical Committee and the Panel Committee.

In Norfolk the Local Medical Committees have a voluntary levy, and panel practitioners now have to pay in two directions. Practitioners not on the panel may voluntarily subscribe to maintain the Medical Committee as an independent authority, as a counterweight to the Panel Committee; but for the most part the practitioners are on the panel, and a compulsory levy forces them to pay also for the Panel Committee. The question has arisen, particularly in the minds of the more peacefully inclined, whether the two committees are likely to be so constantly in conflict, and this on sufficiently important matters, for it to be worth while paying for both. Those less reconciled to the Act hold that because the attitude of the Government implies that Medical Committees are no longer wanted since the doctors have now got the Panel Committees, the medical men had better be careful to keep the former committees going, for the Panel Committees are considered to be too bureaucratic really to allow of representation of professional views. The Medical Committee is important because it will ensure that the profession should be considered as a whole, for there are interests that relate to the Insurance Act and concern others than the panel doctors, and those others should be heard, especially when problems of public health or preventive medicine are under consideration. The continued existence of the Medical Committees might also be a ready means of intercommunication between consultants and practitioners on the panel.

Lack of Union in the Profession.

The above impressions reflect conversations with prominent practitioners concerned with the Norfolk insurance area, who also say that political differences have exaggerated the discord among medical men. In the insurance area of the county borough of Norwich I found no great difference of thought. There is a Local Medical Committee for the city of Norwich, but doubts were expressed as to whether its voice was effectively heard. One Norwich practitioner declared to me that he did not believe that the profession would ever be able to fight again, and confirmed what his country colleagues had said. "We are all individualists," he remarked; "we cannot unite; the Act showed that there was no unity in us. Such a thing as a general union of the profession now does not seem at all likely." And it is a fact that the profession never realised the promise made that they would have the advantage of collective bargaining and they do not now understand what that means. It is a fact also that when workmen engage in a battle they are, as a rule, much better informed as to their own powers and willingness to resist than the medical profession has ever shown itself to be.

At Norwich the working of the Act is neither exactly satisfactory nor the reverse. Very few cases of contracting out have been allowed, but a good number of persons applied to be allowed to make their own arrangements because the doctor who had attended them for a long series of years was not on the panel. The refusal in some of these instances was deeply resented.

The Norwich Medical Institute.

At Norwich there is a medical institute, an old-established organisation which employs three whole-time men; it is popular because it is well organised. I have been able to obtain full details, which has not always been the case when I have tried to inquire into the working of similar bodies. Out of a population of 123,288 inhabitants it appears that about 45,000 are insured, and rather more than 6400 of these insured persons belong to the institute. Adding the wives and families, the total membership of the institute is probably 11,000. This seems too large a crowd for only three medical officers to cope with, but I was asked to remember one or two things. First, the wives and families have to pass a medical examination and are not accepted as members unless the result of the examination is satisfactory. Secondly, the medical officers have no private patients to see or any dispensing to do. Thirdly, the work is carefully organised. In regard to visiting, the medical officers have divided the city into districts so that there is no overlapping and the patients live close to each other; and they see each others' patients when thought necessary. There are two dispensers, and a secretary does all the clerical work. Carriage hire is provided when necessary, and one of the medical officers having a motor car receives an annual sum to cover the cost of its upkeep.

The Sweating Question.

The medical officers of this institute are very anxious to repudiate the suggestion that they are sweated. From a statement submitted to me in regard to the financial aspect of the matter, it appears that before the Insurance Act the medical officers received a fixed salary that never exceeded £305, plus midwifery and certificate fees. When the Insurance Act came into force the medical officers suggested that they should work on a percentage basis, and this the lay committee of the institute accepted. Of the 9*s*. the dispensing department receives 2*s*. The chemists obtain 44 per cent. of the 2*s*., and the rest pays for the drugs, the upkeep of the dispensary, &c. The remaining 7*s*. goes to the medical staff. Eighty per cent. of this sum is divided equally between the three doctors. The remaining 20 per cent. covers the carriage hire, upkeep of premises, cleaning, lighting, secretary's salary, stationery, &c. The income derived from the non-insured members of the institute is also divided in a similar manner among the medical staff, only they are given a smaller percentage. In the result, the three whole-time medical men employed by the institute receive £700 a year each exclusive of midwifery.

The medical officers claim, therefore, that they are not sweated, which shows that they do not use the word in its strict meaning. Under the sweating system many workers earn high wages. Sweating is not synonomous with bad pay. It means the process by which a third party—insurance agents or medical institutions in the case of medical men—can obtain a profit out of what the patient pays for medical service before the money reaches the medical attendant. The question is not whether the institute pays a good price to its medical officers, but whether it retains for its own benefit any part of the money paid by the patients for medical attendance.

In regard to overwork, which with low wages is so often associated with sweating as to be likewise, but erroneously, considered a part of the system, the medical officers to the institute make no complaint. One of them states that his visits average from 16 to 18 a day. Without counting the signing of certificates, and excluding Sundays, he sees for consultation at the surgery some 50 patients per day. This occupies three hours—an hour and a half in the morning and again in the evening. Each of the three medical officers takes in turn Sunday duty, and they also have a half day entirely free every week. "You will understand, therefore," said one of these to me, "why I resent the statement that all medical officers of institutes are third-rate practitioners giving only shoddy service in return for miserable pay. I have previously been in private practice, and when I remember the bad debts, the bookkeeping and dispensing, and the professional out-goings, I think there is no comparison between the possibilities of good work offered in private practice and institutional practice. That will also explain why I am a believer in a State service."

Increased Prosperity of the Medical Profession.

This roseate view of institutional work may not be borne out in other parts of the country, but there are grounds for it here.

There is a large working-class population at Norwich. Street after street is occupied almost exclusively by artisans, labourers, and employees of the several large factories. Before the Act came in force a very large proportion of these people belonged to clubs or friendly societies. They were consequently well accustomed to the limitations and inconvenience of contract practice. The better-class clubs paid 5*s*. a year for medical attendance and medicine, though the institute only got 3*s*. from its members. Consequently the doctors who attend patients by contract are very much better off than before, while, as already explained, the doctors at the institute, whose maximum salary was £305, now receive £700. There are 32 doctors on the panel, the majority of every available practitioner. As wages are low in Norwich there are not many fees to be obtained from the working class, and therefore in the past, as now under the Act, a very large proportion of the medical practice was contract practice. Women, children, and dependents generally belonged and still belong to clubs. There are juvenile clubs in Norwich to-day.

To prevent abuse by enforcing a wage limit a Public Medical Service was organised which attends to the dependents of many insured persons. Thus the amount of private practice that might be obtained through panel practice is very considerably reduced. Under such circumstances one of the leading Norwich practitioners insisted that the remuneration—the 9*s*. set aside by the Act for the medical service—was in no wise excessive when all the work involved, including the cheaper work that had to be done by the side of the panel work, was fully taken into consideration. He felt convinced that if this payment was reduced a good many practitioners would leave the panel.

The Allocation of Patients.

At Norwich, as elsewhere, there are some lists which are too long in my opinion, admitting, however, that a panel doctor who has a list of 3000 insured persons and no private patients might have some leisure, while another doctor with a list of only 1000 but a good many private patients would be more overworked. The difficulty is not with the visiting. The drawback of the system, as manifest at Norwich as at other places I have visited, can be found in the surgery, where the crowd is often far too large. Yet there have been no special complaints against the possessors of long lists. At the end of the first year's working, when those who might have cause to complain could go to another medical adviser, not one-half per cent. of the insured persons at Norwich asked to change their doctor. This seemed to indicate general satisfaction. Therefore when it comes to the question of dividing the fund created by those who have not selected a medical attendant the argument is that it is a fair presumption that those who have not made their choice would follow the lead of the majority. At Norwich the number who have not made their selection amounts to less than 3000. It is proposed to divide half the money equally among all the panel doctors and to give the rest out in proportion to the lists, those who have the longest lists receiving proportionately more.

But there is not only the question of dividing the money, there is the allocation of the insured persons who have not chosen a panel doctor. It appears that this will not be attempted at Norwich, at least not for the moment, though it has been done, and from what I can hear successfully, in the county of Norfolk. At Acle, for instance, where I paid a short visit, the local practitioners met in a friendly way and went over the list of those who had not selected a medical attendant. If anyone present had a claim, such as having already attended the person on some former even if distant occasion, the name was at once put on his list. Those whom no one knew were given to the nearest practitioner, or if two practitioners lived near to each other then those persons living in their neighbourhood were divided evenly between the two. This sort of friendly arrangement, it appears, cannot be managed so easily in a big city like Norwich.

The Indifference of the Insured.

A practitioner at Norwich not on the panel, who was attached to the Public Medical Service when the Act came into force, told me that he thought that the panel doctors were working well and doing well, but he complained of the absolute carelessness of the public. When he told some of his old club patients that he was not on the panel they loudly exclaimed, "What shall we do?" He suggested they might go on this or that panel, and they readily answered "All right," but went off without seeming to care in the least, and forgot to follow the advice. "And they will forget," he added, "until they are ill." On the point of contracting out, he urged that there were instances when patients should not leave the doctor to whom they had been accustomed for many years because he did not happen to be on the panel, and he was glad to think (I may say that he was in a position to know) that at Norwich the authorities were now giving permission to contract out of the Act more freely. My impression is that they are also realising that some of the panels should be reduced.

Some practitioners whom I interviewed complained that the working of the Act was not watched sufficiently by the medical profession or the public either. Thus in the county of Norfolk out of 92,000 insured persons the panel doctors have been credited with only 85,000. The authorities attribute this discrepancy to some extent to duplication of names, and cases were quoted to me of people entered in more than one list under slightly differing names. But this sort of error can only account for a small part of the deficiency.

The general impression prevails that the Act is working better in Norfolk than in most counties; the doctors have been glad to get a substantial increase of income. The average for the county would be a list of 520 insured persons for each panel doctor, and this average is fairly well maintained except on the borders of Norwich.

Medical Referees.

In regard to the question of referees, it does not seem that a satisfactory solution has been found here. The County Insurance Committee agreed that in each case the nearest practitioner should be the referee, and that he should receive a half-guinea fee and 1*s*. 6*d*. mileage beyond the first mile. No one knew, however, whether the Insurance Commissioners would approve, and it is certain that the panel doctors themselves are doubtful about it. It appears that if the doctor himself calls in the referee he will have to pay the fee, but it is more likely that a panel doctor will resign himself to lose one person from his list rather than pay a half-guinea fee. An Approved Society might occasionally find it advisable to incur such an expenditure; yet as the referee is not to be a recognised authority, but only the nearest neighbour, it may not always be considered worth while appealing to him. The neighbour may be quite a young man who has only recently commenced practice, or for this reason or that a practitioner whose opinion in the particular case would inspire no special confidence. Again, and whatever their respective standing in the profession, it is awkward for close neighbours to sit in judgment over each other's work. The temptation will be to let each other down gently, and that is not the object for which an appeal is made to a referee. Indeed, it looks as if the proposal was a manœuvre, a means of saying that something has been done, though in actual practice it is very unlikely that the services of such referees will ever be required.

Similar Problems at Ipswich.

I conclude this series of articles with a brief note on a visit which I paid to Ipswich this week. I found here conditions exactly analogous to those which I have so often described, and I will not at the present moment enlarge upon them. There was at Ipswich the same distinct spirit of resistance to the Act, the same annoyance among certain both of employers and employees at the compulsory contributions, the same rise in income coupled with an increase of work among some of those practitioners employed in contract practice, while a good many of the insured persons in Ipswich continue to employ and pay private practitioners. The record of sickness has obviously much increased since the Act came into force, and this was especially noticeable in a small women's club the figures in relation to which I obtained. The urgent need for referees is felt, and Ipswich is contemplating an elaborate scheme for their institution. The staff of the East Suffolk Hospital, which charity receives large sums from the working men of Ipswich, have arranged that the out-patient department will see an insured person once as a casualty; and then, if he desires to remain under hospital treatment instead of going to his panel doctor, his case is submitted to the honorary staff for decision. This seems to me to be a judicious method of dealing with a situation which has been embarrassing in many towns that I have visited. The subject is one to which I hope to have an opportunity of soon returning.

MEDICAL SICKNESS AND ACCIDENT SOCIETY.—The usual monthly meeting of the executive committee of this society was held at 429, Strand, on June 19th, Mr. J. Brindley-James being in the chair. The claim account presented still showed an improvement over that of last year, and the proposals received in these first five months constitute a record in the society's experience. The new combined sickness and endowment table with reduced premiums for the first five years is also proving popular with younger members of the profession. The votes for Epsom College were dealt with at this meeting, there being two candidates for Foundation Scholarships who are the sons of deceased members. The widow of a late member was also applying for a pensionership. The society subscribes £105 per annum to the College, and consequently controls a number of votes which are all used for the relatives or friends of deceased members.

LONDON DERMATOLOGICAL SOCIETY.—The annual general meeting of this society was held on June 16th at St. John's Hospital for Diseases of the Skin, Leicester-square, W.C. The President, Dr. Morgan Dockrell, presented the council's annual report, and said that the society had had a successful year, thanks chiefly to the large amount of clinical material they had at their disposal. Forty new Fellows had been elected during the year. The result of the election of officers for the ensuing year was announced as follows:—President: Dr. W. Griffith. Vice-President: Dr. Morgan Dockrell. Honorary Treasurer: Dr. W. Knowsley Sibley. Honorary Secretaries: Dr. J. L. Phibbs and Dr. Simonds Gooding. At the clinical meeting which followed Dr. J. L. Bunch showed a case resembling a Nodular Acne of the Face, from the lesions of which the ray fungus had been grown. —Dr. W. Griffith showed a case of Erythema Iris affecting the hands and mucous membranes.—Dr. W. Knowsley Sibley showed a case of Lupus Vulgaris which had been treated for over a year with tuberculins without improvement, but which was now improving under nascent-iodine treatment.—Cases of syphilis were shown by the President and Dr. J. L. Phibbs, and a paper was read by Mr. C. H. Mills, entitled "Some Points in the Treatment of Syphilis."

Home and Foreign Notes.

(FROM OUR OWN CORRESPONDENTS.)

MANCHESTER.

Memorial to Mr. Walter Whitehead.

ON June 27th the strikingly ornate, tall, and artistic monument—erected in a triangular plot of ground which has been converted into a charming garden — was presented to Bury by Mr. Henry Whitehead, in memory of his brother, Mr. Walter Whitehead. Sir Frederick Treves formally opened the gate of the gardens surrounding the memorial. The clock tower itself is 12 feet square and rises to a height of 80 feet above the ground. At the top is a clock with four dials 5 feet 6 inches in diameter. The dials can be illuminated at night by electricity. A bronze figure, 6 feet 6 inches high, is placed in a niche over the entrance doorway. The tower is built of Portland stone, resting on a concrete foundation 30 feet square, while the base of the tower is formed of polished Aberdeen granite steps.

Salford and Maternity Centres.

The health committee of Salford has asked the council to adopt a resolution similar to the following passed by the St. Helens corporation:—

> That in the opinion of this council it is vital to the public health of the country that all schemes dealing with infant mortality and child welfare should be administered by the constituted sanitary authorities under the direction of the Local Government Board; and that the time has arrived when adequate grants should be made to those authorities to enable them to establish maternity centres and similar institutions dealing with the care of infant life.

Defective Sight in School Children.

From the last report of the school medical officer, Dr. A. Brown Ritchie, it appears that six medical men along with a number of nurses devote all their time to health matters in connexion with 185 schools in Manchester. By the new arrangements each child will be examined three times in the course of its school career. There is an improvement in the attitude of parents towards the provision of spectacles, though there are still a fairly large number of parents who require considerable pressure before they provide the spectacles necessary. Teachers take a keen interest in detecting cases of defective vision.

Memorial to the late Mr. T. H. Pinder.

A fund has been started for a memorial to the late Mr. T. H. Pinder, who for many years was connected with the Hospital for Diseases of the Ear. It has not yet been decided what form the memorial will take. A subcommittee has been appointed to confer with the hospital committee.

June 30th.

IRELAND.

Death of Mr. F. T. P. Newell, M.B. Dub., F.R.C.S. Irel.

I RECORD with regret the death, at the comparatively early age of 54, of Mr. Newell, a well-known Dublin practitioner. He had been suffering for some months past from a tumour of the neck, and the end came last week as the result of hæmorrhage. For more than 20 years Mr. Newell was a Poor-law dispensary officer in one of the city districts. For the past three or four years he was a member of the Council of the Royal College of Surgeons, and was regarded as the representative of the general practitioners on that body. During the professional struggles of the past three years his presence on the Council was of special value both to the College and to the general body of the profession, and it was in large measure due to his influence that the Council adopted a strong attitude in regard to conduct in the administration of the National Insurance Act which might be regarded as unprofessional. Mr. Newell was one of the most active members of the Dublin Local Medical Committee, and he was also a member of the Irish Medical Committee. He was an upright man, much respected both by his colleagues and the public, and held in warm affection by those who knew him best.

Belfast District Lunatic Asylum.

From the annual report for 1913 of this asylum it appears that there were 276 admissions, while 148 were discharged and 145 died. On Dec. 31st, 1913, there were 1232 inmates, 598 males and 634 females. Of those admitted, eight were over 70 years of age. The gross expenditure for the financial year ended March 31st, 1914, was £29,946 5*s.* 10*d.* More than two-thirds of the patients are now in the new colony at Purdysburn, and the remainder—with the exception of 37 at Ballymena—are in the old buildings at Grosvenor-road, Belfast.

Laurelvale Water-supply.

The Local Government Board have sent a sealed order to the Tandragee rural council, county Armagh, stating that whereas complaint had been made to them that the council had made default in providing a proper supply in Laurelvale—a district where there is an industrial population—they directed that the council shall set about the performance of their duty in the matter within a period of three months. It was decided by the Tandragee rural council to engage a civil engineer to report on the question, and a subcommittee was appointed to consult with him. For a long period this matter of the water-supply of Laurelvale has been in dispute, and typhoid has occurred at times owing, it is alleged, to the impure water from wells. It is quite time the people in the area had a reliable supply of pure water.

June 30th.

PARIS.

Students' Grievances.

THE new régime for medical studies has been in operation since November, and the first year's examinations have just taken place. The students complain of unwonted severity on the part of the examiners, and the number of rejected is certainly much greater than ever before. It would be hard to assert that the examiners have exercised intentionally undue rigor, particularly as the medical syndicates have often proclaimed that the examinations should be searching especially at the beginning of medical study, so as to eliminate promptly those students who do not show any real aptitude and so would only encumber the profession. Once a student has fully entered on his studies and has passed with greater or less effort his first examinations, he is almost certain to complete them after a longer or shorter time, for in the end the examiners are merciful to a candidate who perseveres in spite of frequent rejection. It is possible that this consideration has led them to exercise a selective faculty at the beginning of the course, in cases where a real vocation or its absence is clearly indicated. The Coöperative Association of Medical Students, however, is dismayed at the disastrous results, and has called on the doyen of the Faculty of Medicine to complain of this unwonted severity. It even asserts that the examiners have imposed on the candidates questions that ought not to be admitted in the first year. The doyen could only reply that he would consider the points raised and urge upon the students to work with greater energy, so as to raise the entire level of medical study.

An Aeroplane Ambulance.

At the great military manœuvres of last year attempts were made to use aviators in searching for the wounded after a battle. The results were very good, and many wounded were undoubtedly discovered who would have remained a much longer time without assistance under ordinary methods. Dr. Raymond, who is a Senator and himself an aviator of considerable ability, made these attempts with marked success. And now a woman aviator, Mdlle. Marvingt, has extended this idea by having a special aeroplane constructed to accommodate, besides the aviator, a medical man and also a covered litter on which the wounded man can be placed for transport. To collect the necessary sum of 36,000 francs for the construction of this apparatus she has arranged aviation meetings and conferences throughout France, the proceeds of which are to be devoted to this work, and has collected already some 21,000 francs. She thinks that this aeroplane ambulance will be of service, not only in a European war in which battles finish only with nightfall and so render a search by aeroplane very difficult, but in colonial wars also, in which many wounded run the risk of being left in the desert, hidden by the inequalities of the land which impede observation in the case of those on foot, but are easy of survey from above. It is true that landing presents peculiar difficulty in these conditions, and it is hardly likely that this new method of aid to the wounded can become general. But the effort is charitable and worthy of all sympathy.

Antityphoid Inoculation made Compulsory in the Army.

The principle of compulsion in regard to antityphoid inoculation in the army was affirmed by Parliament in a law dated March 28th. A ministerial order has now laid down the conditions of its application. All officers and men of troops quartered in regions where the appearance of typhoid fever may reasonably be looked for, from former or recent experience, must be immediately inoculated. Garrisons in which the typhoid mortality during the past five years has exceeded an average of 2·87 per 1000 are so qualified. All white troops in Algeria, Tunis, and Morocco, and all soldiers under orders to serve in Morocco, must also be inoculated. The last class will not be allowed to proceed there until they shall have undergone the complete series of preventive inoculations. All military nurses must be inoculated immediately when individual contra-indications do not exist. Troops also about to manœuvre in districts where typhoid fever has recently been present among the civil population must be inoculated. Finally, on October 1st this year all soldiers with the colours who do not belong to any of the preceding categories must be inoculated, beginning with the new recruits. All these orders must have been complied with by Dec. 1st. The Minister, having regard to the observations laid before the Senate during the discussion on the Bill, has conceded that the military medical officer shall always have the power to exempt temporarily from inoculation any one whose state of health for any reason shall appear to render the operation especially risky.

June 29th.

BERLIN.

Removal of Injurious Micro-organisms from Vaccine Lymph.

Dr. Friedberger recently read a paper before the Berlin Medical Society on the "sterilisation" of vaccine lymph by means of the ultra-violet rays. He said that a satisfactory method of removing extraneous microbes from vaccine lymph had not until now been discovered, because chemical germicides necessarily diminished the prophylactic efficacy of the lymph. This was also the case with glycerinated lymph, the addition of glycerine producing only a very slow decrease of virulent germs, so that this lymph could not be used in a fresh condition, and much of its activity was sacrificed. He had therefore endeavoured to find some method which would destroy the virulent bacteria without tedious delay and without impairing the valuable properties peculiar to the lymph. Ultimately, in conjunction with Dr. Mironescu, he discovered that the ultra-violet rays produced the effect desired. Exposure to the radiation emitted by a Kromayer lamp for 20 or 30 minutes destroyed the bacteria present in fresh vaccine lymph, the latter remaining efficacious even when the exposure to the rays was continued for one or two hours. When spores of the bacillus anthracis and of the bacillus subtilis were intentionally added to the vaccine lymph the result was that a considerable time was necessary for the destruction of those organisms, but the lymph was still efficacious for vaccination, although its activity was lessened.

A New Method of Testing the Strength of the Heart.

At a recent meeting of the Berlin Society for Internal Medicine Professor Katzenstein read a paper on a new method of testing the strength of the heart. The characteristic feature of his procedure is that he ascertains the number of the beats and the blood pressure before and after a compression of both crural arteries. When the strength of the heart is sufficient the number of the beats decreases, and the blood pressure increases after the compression. In slight insufficiency both remain unaltered, and in severe insufficiency the number of beats increases whilst the blood pressure is sinking. This method has proved valuable in many cases. It may also be used for ascertaining any damage done to the heart by narcotic compounds. When the test gives an unfavourable result general anæsthesia is contra-indicated for such patients, and only local anæsthesia ought to be employed. In nervous patients, however, the method is not reliable.

The Law Relative to Agreements Restraining Medical Men from Practice.

An important judgment was recently given by the Supreme Court of Justice in Leipzic. On the occasion of a medical strike a medical man had accepted an appointment at a sick club the medical officers of which had resigned. The Leipziger

Verband then induced him to leave his appointment by paying him 6000 marks (£300) on condition that he not only resigned this appointment but also pledged himself not to settle as a medical practitioner in Germany for the ensuing ten years without the consent of the Leipziger Verband. He did not keep this agreement, and the Leipziger Verband accordingly brought an action against him for the repayment of the money which he had received. The Supreme Court, however, in its final judgment declared that an agreement by which the right of settlement was limited by or made dependent upon the goodwill of another person was against the law, and therefore incapable of being enforced. This decision will very much hinder the action of the Leipziger Verband, because when the medical officers of a sick club resign in a body on account of some grievance and the club managers appoint substitutes it will in future be impossible to restrain the latter by money payments.

Accidental Loss of a Quantity of Radium.

A private sanatorium in Berlin has recently sustained a heavy loss by the negligence of a servant. One of the medical men attending patients in the sanatorium had applied radium of the value of 20,000 marks (£1000) to a patient. It was enclosed in a small capsule, and when the application was discontinued the capsule was put in a basin which was afterwards cleaned by a servant. The man did not know what the capsule was, and after cleaning the basin he poured the water, together with the capsule, into a sink, from which it ran into the sewer. The loss of the valuable material became known only after the lapse of some hours, and although the sewers were searched for several hours by a number of workmen and a reward of 2000 marks was promised, the valuable little capsule was not found.

June 29th.

UNITED STATES OF AMERICA.

Yale Medical School.

Yale University has received the sum of $125,000 (£25,000) for the erection and equipment of a chemical and pathological laboratory to be known as the Anthony Brady Memorial Laboratory. The announcement has also been made that members of the Brady family will establish the Anthony N. Brady Memorial Foundation of $500,000, the income of which is to be given annually to the University for a term of ten years, in order to enable the University to declare operative at the time the agreement with the General Hospital Society of Connecticut, and to conclude the alliance between the New Haven Hospital and the Medical School of Yale University. If within the ten-year period the University receives a total of $2,000,000 for medical school endowment the $500,000 will become the absolute property of the University. Over $1,110,000 have already been promised, and if $390,000 more are obtained before Jan. 1st, 1915, the General Education Board will give the $500,000 necessary to make up the $2,000,000.

Fund for Johns Hopkins University Medical School.

Mr. Abraham Flexner, of New York, representing the General Education Board founded by Mr. John D. Rockefeller, has made recently final arrangements to turn over to the Johns Hopkins University Medical School the sum of $1,500,000 to establish the William H. Welch Endowment for Clinical Education and Research. The Johns Hopkins Medical School is the first medical institution in the United States to receive money for research work from the General Education Board.

Diagnosis of Cancer.

At a meeting of the executive committee of the American Society for the Control of Cancer held recently the following resolution was adopted:—

> That it is the belief of the executive committee that the City of New York should undertake free diagnosis of specimens of tissue suspected of being cancerous.

It is stated that the New York Department of Health now has the question under consideration and will consult with its Medical Advisory Board before taking action.

The Coroner's Office in New York City.

The recent trial of a coroner in New York City for neglect of duty may lead to the abolition of the ancient office. An investigation of the department by the Commissioner of Accounts has been ordered by the Mayor of New York at the request of the City Club, and as a result the need for an independent official investigation is urged, because of the serious charges made affecting the efficiency and integrity of the performance of the coroner's function in the city.

Street Accidents in New York City.

The National Highways Protective Society has reported that during the month of May 45 persons were killed by vehicle traffic in the streets of New York. Thirty-two of those thus killed, or more than 70 per cent., were less than 16 years of age. During the month of April 5352 accidents occurred on the railroads and street railways under the jurisdiction of the Public Service Commission of New York. As a result of these accidents there were 26 deaths, as compared with 17 in April, 1913, and 22 in April, 1912. In addition 9 persons had their skulls fractured, 3 lost an arm or leg, and 142 were injured seriously.

A False Alarm.

Dispatches from Bogota state that it has been determined by bacteriological tests that the epidemic now prevailing in Colombia is not bubonic plague.

June 25th.

CHINA.

The Health of Shanghai in 1913.

THE annual report of the health department of the Shanghai municipal council, written by Dr. A. Stanley, the medical officer of health, is of value, as it concerns the only place in China where definite statistics are available to indicate the prevalence of diseases both among foreigners and Chinese. Within the area of the municipal limits (8⅔ square miles) there is a population of 14,250 foreigners and 510,000 Chinese. The death-rate among the former was 21·5 per 1000 and 15·8 for the Chinese. But it is noted that 135 of the 305 deaths recorded among foreign residents were Japanese, and that 21 of these were due to beri-beri, which rarely affects non-Asiatics. Instead of the term "non-Asiatic" one might put "non-rice-eaters," but this view, so generally accepted, does not find favour with Dr. Stanley, who still remains, by the evidence he gets in Shanghai, in favour of the opinion that beri-beri is an infective disease "having no relation to food, but infective through body vermin." A diminution in the number of cases of this disease in the municipal gaol is held to be attributable to the measures of disinfestation of body vermin among the convicts. The incidence of small-pox, typhoid fever, dysentery, tuberculosis, and scarlet fever was abnormally high. As regards scarlet fever an unfortunate factor is the extreme virulence of the infection met with in China, it being more than four times as deadly as it is in England, and there is no indication yet of a decrease in virulence. Although scarlet fever has hitherto failed to establish itself firmly in any part of Asia excepting Asia Minor, and is practically unknown in the tropics, it appears to have come to Shanghai to stay, since its introduction in 1900, probably by foreign immigrants. As would be expected with a recently introduced disease, against which evolution has afforded no natural immunity, scarlet fever has been of a virulent type among the Chinese. It is probable that the passage of the disease through the susceptible Chinese has led to an intensification of the virus, so that it is more fatal to foreigners also. There were 12 non-Chinese and 207 Chinese deaths from small-pox. In Shanghai there exists so much small-pox infection that it is advised that vaccination should be repeated every three years till it no longer takes. Over 13,000 free vaccinations were provided by the Health Office during the year under review. No city in the world is probably so favourably served as Shanghai in the disposal of refuse. Over 150,000 tons of garbage and ashes have to be removed yearly from houses in the settlement, and this is done at a very low cost. Cement bins with iron lids and doors are fixed at suitable points in all the alleys. They are both rat and fly proof, and help to minimise the fly nuisance. The former horse carts have been replaced by a small army of scavenging coolies with wheelbarrows who are able to pass practically anywhere. As a result of careful organisation the greater part of the daily mountain of house refuse is now actually a source of profit, being sold to country boatmen who buy it for agricultural purposes. It is, in fact, the cheapest manure available, the average selling price being 5 cents a ton. The cost of collection and disposal was 4½*d.* a ton, compared with 9*s.* the cost of London refuse. It is probable that the ensuing year may actually show a profit. The prevalence of tuberculosis remains at the same high level; it is the most fatal disease, among foreigners and Chinese alike, in Shanghai. A scheme is on foot for the establishment of a tuberculosis dispensary on lines of treatment which will be preventive, educative, and curative. Plague: During 1913, 13,333 rats were found dead, and of these 122 were plague infected, while nearly 153,000 rats were trapped and burnt. An active campaign of making houses rat proof is kept up, and in addition to 5875 houses dealt with in this way all food shops are now required to be rat proof as one of the conditions of licence. Nine cases of human plague with eight deaths occurred. It is considered that by these active rat-proofing measures a serious outbreak has been averted. Close on six million phosphorus baits were laid. Rabies: 41 persons underwent Pasteur antirabic treatment during the year, in 24 of which the animals responsible were proved rabid by inoculation. Two cases died subsequently from hydrophobia. one four days and the other ten days after the completion of treatment—i.e., before its effects were fully established. They had both been severely bitten. Dysentery: There was an increased prevalence of this disease during the latter part of summer. Most of the cases were amœbic in origin, and yielded to the new emetine treatment. Two deaths occurred from liver abscess among foreign residents. Bacillary dysentery was also noted.

Plague in South China.

The most rigorous regulations for the medical inspection of ships entering Shanghai from the South are at present being imposed. The outbreak of plague in Hong-Kong, serious though it is, is nothing like so dangerous to other ports as the epidemic in Canton. Bubonic plague with a high degree of virulence has been spreading over Kuangtung province, of which Canton is the capital, and the conditions there are very bad. The mortality approaches 100 per cent. The percentage of deaths from bubonic plague in South China has never been below 88·4. The plague return for the week ending May 19th in Hong-Kong shows that 241 cases were reported, and 185 deaths. For the past three weeks the number of cases of plague has exceeded those in any week for several years. In the previous week there were 215 cases and 173 deaths, while three weeks ago the returns were 203 reported cases, of which 171 were fatal. The total number of cases in Hong-Kong alone since the beginning of the year is 1474 and 1301 deaths. Since 1894, when the colony was first declared infected, each succeeding year has seen a recurrence of the disease, and since 1899 the heaviest death-rolls have been 1486 in 1899, 1651 in 1901, 1700 in 1912, and 1301 to May 19th in 1914. All these years the Hong-Kong Government has been strenuously endeavouring to eradicate plague, and leaves no stone unturned by means of its active and well-directed sanitary staff to limit infection. But a baffling feature with which the whole life of the colony is bound up is the constant coming and going of Chinese to and from the mainland in native craft, which are innumerable and very difficult to control.

The Rockefeller Foundation.

The trustees of this fund have long been interested in China, and especially in medical education in China, and this spring have sent a commission consisting of Mr. H. P. Judson, President of Chicago University, Dr. F. W. Peabody, of Boston, and Mr. R. S. Greene, United States Consul-General at Hankow, to make a study of the actual conditions surrounding medical education and report to the Foundation. This commission has been in Peking engaged in investigation, and has now left for the Yangtze Valley, where they will visit Hankow, Nanking, Changsha, Shanghai, and other important centres. The foundation is incorporated by the State of New York, and there is a sum of 100,000,000 gold dollars in the hands of the trustees, which by the terms of its charter is to be used "for the welfare of humanity." The members of the commission are examining very thoroughly into the actual amount of work done in each college with a view to the proper allotment of grants in aid, which is the form of help to be given, thus allowing existing institutions to select their own additional teachers and extend their equipment.

Medical Education in China.

At the present time a good deal of discussion is taking place in Far Eastern circles over the reported forward movement by Germany to establish her language and ideals in China to a much greater extent than has hitherto been the case. In Berlin the Reichstag in April, 1913, voted £1000 more than in former years for the establishment of German educational centres in China, and a new German-China institute has been established to bring the scientific and technical achievements of Germany to the knowledge of the Chinese people. These aims will be effected especially by the establishment and maintenance of Sino-German schools, medical, technical, and commercial, and also Sino-German sanatoriums, and by supplying German teachers to Chinese schools. As far as medical schools are concerned there are now in Shanghai and Tsingtao two subsidised colleges where a five years' course of medicine is given, with German as the teaching medium. Both these colleges have preparatory schools attached, where a thorough grounding in that language can be made before entering on the medical course. Although the British Government has not yet seen its way to extend official financial support to the educational efforts of British medical missionaries, the movement, nevertheless, in conjunction with their American *confrères* is in a healthy condition. In fact, there is every reason to be proud of the splendid sustained efforts being made by medical missionaries to establish scientific medicine in China. In all large towns the work of foreign doctors and missionaries is gradually creating a demand on the part of the Chinese for more efficacious treatment than they can get from their native empirics. Two new colleges with hospitals attached have recently been opened. In Manchuria the Mukden Medical College, which owes its existence to the fine work of the veteran missionary Dr. Dugald Christie, C.M.G., has had an extension opened by the Governor of Fengtien, H.E. Chang Hsi Man. The college has 80 students, and in addition to a fairly good educational equipment offers excellent clinical teaching by means of its hospital, which last year dealt with 47,000 out-patient visits and 2380 operations. A new feature is an X ray department, a gift from General Chang Tso-lin, the commander of the army in Manchuria. At the last entrance examination 157 candidates came forward, of whom only 40 could be admitted. This is a healthy condition of things educationally, as it ensures a high standard in those who enter. The other institution, the Tsinan-fu Medical College, formed by a union of the English Baptist and American Presbyterian Missions, has just had the foundation stone of its new hospital laid by H.E. Chin, the Military Governor of Shantung Province. Friends in England, mainly by the exertion of Mr. Harold Balme, subscribed a sum of £6000 for the erection of the hospital which, in addition to a central administrative block and a large out-patient department, fitted with five consulting-rooms and two operating theatres, will have accommodation for 100 beds in modern wards. As a sign of advance in the times I might add that the Chinese Central Government has issued regulations officially permitting human anatomy and post-mortem examinations, and that this is no mere paper affair is shown by the fact that the Peking Union Medical College has received from the local prison authorities unclaimed bodies of dead prisoners for dissection.

Peking, May 27th.

DONATIONS AND BEQUESTS.—By will the late Mr. Francis James Trewent, of Hampstead, N.W., left £1000 to a London hospital for patients suffering from paralysis, and £1000 to the Hampstead General Hospital, Haverstock-hill.—Under the will of the late Mrs. Jane Pitt, of Ullswater, the Royal Infirmary, Liverpool, will receive £500 and the Carlisle Infirmary £250.

Correspondence.

"Audi alteram partem."

THE MENTAL DEFICIENCY ACT.

To the Editor of THE LANCET.

SIR,—It seems, from the remark of Mr. Wallace, K.C., and from the letter of Sir Bryan Donkin in THE LANCET of June 20th, that a person who is mentally deficient is not mentally deficient within the meaning of the Mental Deficiency Act unless his whole history from birth or from an early age can be had. I do not know whether this has been so held by any court of competent jurisdiction, but I venture to assert that it is not only calculated to nullify much of the benefit of the Act, and to remove out of its scope many of those who ought to be within it, and who were intended to be within it, but also that it is not a necessary interpretation of the Act, and that the Act may and ought to be so construed as to escape such a futile result. I am the more concerned to show this since I am largely responsible for the definitions in the Act, each of which requires that the persons defined shall have suffered from defect from an early age, and all but one require that he shall have suffered from birth.

From this it has been inferred, so it now seems, that unless the whole career of the person is known, and his defect can be traced back in his history to an early age or to birth, the definition is not satisfied. The contention seems to me absurd. Take the frequent case of a person who suffers from congenital hemiplegia, with contracture, infantile undevelopment, and choreiform spasm of one arm and leg. The state of the limbs renders it certain on inspection of them that the physical deficiency dates from birth or from an early age; and no information from the mother, no written record of the person's history, could possibly increase our certainty that it does so date. The nature of the bodily deformity and deficiency is itself conclusive of its own inveteracy, and its existence from birth or from an early age; and so it is with many cases of deformity and deficiency of mind. When we observe certain mental defects we know at once, without investigating the history of the patient, that these defects have existed from birth or from an early age, and we no more need to investigate the history in order to determine the point, than we need to investigate the history of a red-haired person in order to determine whether the redness of his hair existed from birth or from an early age, or whether it was not brought on by profligacy and evil living.

If we can say that a person is mentally deficient, and that the deficiency is of a kind that we know by experience is inveterate, and is part of the original equipment of that person, then I maintain he is mentally deficient within the meaning of the Mental Deficiency Act.

I am, Sir, yours faithfully,

June 25th, 1914. CHAS. A. MERCIER.

THE SOCIETY OF MEMBERS OF THE ROYAL COLLEGE OF SURGEONS.

To the Editor of THE LANCET.

SIR,—I have just received a circular from the Society of Members of the Royal College of Surgeons of England asking me to vote for certain candidates—a rather belated request—at the election to the Council on Thursday next. This request is based upon the fact that these candidates have pledged themselves if elected to support the claims of the Members for an active participation in the government of the College. The circular also includes the following remarkable paragraph: "To govern a great college there is needed a body of men of wide and comprehensive intelligence. To secure a council of such men we must *avoid those persons whose only idea is to glorify their own existence and to remain deaf to all suggestions for improving the College administration* [the italics are mine], and who refuse to adopt the only course which will help to make the College of Surgeons a real power for inspiring surgical knowledge and for protecting and guarding surgical practitioners."

Could anything have been conceived in worse taste, more impolitic, or more harmful to the Members' cause than this virulent expression of feeling? There is a flavour about it of the militant tactics of those insane women known as suffragettes. It has always been the policy of the Members' association to pour vials of vituperation upon the Council. Surely, the past has shown unequivocally the worthlessness of the proceeding. What has been gained by this policy? Nothing save, perhaps, the alienation of many Fellows who otherwise, at least in part, would be willing to show active sympathy with the Members and their claims. When will the Society of Members realise that to proceed on strictly constitutional lines is the only means by which the Members can hope to gain adherents to their cause among the Fellows? Meanwhile this last ebullition of feeling against the Council will only have the effect of destroying the chances of success of those candidates for whom the Society of Members have appealed for votes.

I am, Sir, yours faithfully,
Wimpole-street, W., June 29th, 1914. PERCY DUNN.

SOME POINTS IN THE MANAGEMENT OF TRACHOMA.

To the Editor of THE LANCET.

SIR,—It may be of interest to record certain experiences in connexion with the management of trachoma in the Poor-law schools under the administration of the Westminster Diocesan Education Fund.

The authorities of the fund have two methods of dealing with this disease: (1) inspection, and (2) isolation in special schools. Under the first head 13 schools are inspected twice a year, and approximately 2200 children examined. The lids of every child are everted with a view to detecting any cases of trachoma or contagious ophthalmia. Any case of trachoma is drafted off to a special school for isolation and treatment. It is difficult to arrive at the percentage of trachoma in Poor-law schools, but I am convinced that a periodical and systematic inspection has a very marked effect in keeping down the number of trachoma cases. Stephenson's census, taken in 1896, when 13,047 children were inspected, gives a percentage of 4·91 trachoma cases. In my last inspection (I found approximately ½ per cent. of the children had trachoma on the previous inspection) I found 22 cases of trachoma—i.e., 1 per cent. Six of these cases were found in one school where there had previously been trachoma, and seven were found in one of the smaller schools, and had nearly all been admitted within the last few months. I may add that the children of these schools are drawn from the very poorest class, and a large percentage are of Irish parentage.

Secondly, with regard to ophthalmic isolation schools, the fund has such schools, one for girls and one for boys, at Chigwell. In the latter school I had last year on an average 240 boys under my care. One difficulty which may from time to time confront the surgeon in charge of such a school is a sudden inroad of cases, which the ordinary accommodation is not sufficient to meet. Such a situation arose at Chigwell on three occasions—namely, the summers of 1910, 1911, and 1912. In each year I had a number of boys put under canvas. The spot selected was a sloping field adjoining the school. The soil was gravel and the aspect west. In 1910 and 1911 30 cases were dealt with in this way. The tents were of the ordinary army bell-tent pattern, with boards. Six boys slept in each tent. There was a man in charge at night, whose duty it was also to see that the bedding was folded and the flies of the tents rolled up in the daytime. There was a lavatory adjacent to the tents, where the boys washed in running water and had access to the spray bath, as did the boys in the school buildings. Each boy had his numbered towel, &c. There was sufficient accommodation in the school for all the boys to attend classes, receive treatment, and have meals together.

In 1912 the numbers under canvas varied from a minimum of 100 to 120. This large increase was due to the fact that 87 boys had to be admitted in one month. The boys were accommodated in two large marquees. No boards were employed, but each boy had a mackintosh sheet under his bedding. A small gutter was cut round the higher side of the tent to carry off water. This year the boys were out from July to the end of October. It is interesting to recall that 1910 was a fairly average summer, 1911 was the year of drought, and 1912 was equally exceptional in the opposite respect. The type of season does not seem to have affected the welfare of the boys. In no year was it necessary to bring any boy in on account of rheumatism or chill. In 1912 there was scarlet fever in the school. Three or four of the boys under canvas became affected, and were, of course, removed to a fever hospital. In 1912 record was kept of the weights of the boys before and after their open-air sojourn. They all increased in weight except one boy, whose weight remained the same. The average increase was 7 to 8 lb. in the four months. One boy increased 28 lb.

On the whole, this method of putting the boys under canvas proved itself a very effective way of dealing with a sudden outbreak of the disease during the summer months. Stephenson, in "Epidemic Ophthalmia," p. 61, suggests that this method might be used, the tents being pitched upon a wooden or asphalt flooring. He cites two instances of epidemics having been treated in this way—namely, at the St. Petersburg Military Hospital in 1835 and 1839, under Florio, and in 1872 at the St. Stanislaus Asylum, Nancy. Boldt, in his book on trachoma, states "that if an epidemic of trachoma broke out at the seat of war, where there was satisfactory accommodation," he "would consider it imperative to treat the milder cases in tents or portable barracks, such as are, indeed, ordered for use in the treatment of epidemics on active service."

In order to meet any further epidemic the managers of the school at Chigwell have erected so-called "temporary" buildings to accommodate

120 boys in the same field where the tents were pitched. They consist of dormitories, class-rooms, lavatory, and recreation-room. The general construction is, first, cement concrete under the whole of the buildings, and then brickwork foundation walls with a superstructure of timber framing, covered externally with corrugated galvanised sheeting, and lined and ceiled internally with sheets of asbestos set out in panels and painted or distempered. The heating is by means of slow combustion stoves.

Of more special interest are the class-rooms and lavatory. There are four class-rooms, each for 25 scholars (existing class-rooms were able to accommodate the balance of the 120 boys). These are exceptionally well-lighted and cross ventilated, the windows being of a special design (suggested by Dr. Ralph Crowley). The rooms are well warmed by open fires, and large double doors open outwards at ground level, permitting if desired of readily removing the classes to the open playing fields outside. The lavatory building was of experimental and original design, specially constructed with the object of the rapid washing and bathing of the 120 boys, and has proved very successful. The boys enter from the outside straight into the dressing room. Here they strip, then pass under a warm shower into the washing room, which is provided with 40 warm sprays, each having racks for soap and a nail-brush and for three numbered toothbrushes. After washing in this room the boys pass under first a warm and then a cold shower, and into the drying room, fitted with racks for 120 towels and hair-brushes, and then again into the dressing room. The floor of this building is so constructed that it can be readily washed down with buckets of water or a hose-pipe. The attendant who has charge of the washing arrangements informs me that he is able to deal with 100 boys in 45 minutes in this way.

I am indebted to Messrs. Best and Sons, of Victoria-street, for the particulars and plans of the temporary buildings.

I am, Sir, yours faithfully,
J. F. CUNNINGHAM, F.R.C.S.Eng.
Weymouth-street, W., June 30th, 1914.

COLOURED CHLOROFORM AND ETHER.

To the Editor of THE LANCET.

SIR,—There are definite dangers due to the fact that chloroform and ether are similar in appearance and only to be distinguished by their weight and smell. Now so much ether is given by the open method different coloured drop bottles are sometimes used, but that does not prevent chloroform being put into the ether drop bottle by mistake. The greatest danger of all is when chloroform has been by mistake put into a Clover's inhaler. I have heard of two fatal accidents from this, and almost witnessed a third myself. The profession has become accustomed to coloured antiseptics; and provided the colouring reagents are absolutely innocuous to the patient, are permanent, and do not affect the properties of the chloroform and ether, there are many things to be said in their favour in the case of anæsthetics.

At my suggestion, after some months of experimenting, Messrs. Duncan and Flockhart have succeeded in producing a pink chloroform and a green ether, which are perfectly satisfactory and which they are now prepared to dispense if they are asked for them. The mixture of equal parts shows a clear brown. I have exposed them to sunlight for some weeks without them fading, and used them frequently with perfectly satisfactory results. I gave the ether by the open method for over two hours a few days ago, using the same piece of lint, and found it perfectly satisfactory, and have found the pink chloroform equally good.

Mistaking chloroform for ether probably never occurs in hospitals or in the practice of the professional anæsthetist, but surely such a mistake ought to be made absolutely impossible. At times anæsthetics are given in a bad light with indifferent assistants and for an exacting surgeon, who is inclined to flurry the anæsthetist. The green used for the ether is a pure vegetable product, 1 in 1400; the red in the chloroform is an aniline product, 1 in 200,000.—I am, Sir, yours faithfully,
P. F. BARTON, M.A., M.B.Cantab.
Wimbledon, June 25th, 1914.

ORAL SEPSIS.

To the Editor of THE LANCET.

SIR,—Dr. Robert Hutchison in his reply to Dr. Sim Wallace in THE LANCET of June 13th (p. 1721), suggests, as a small contribution to a discussion on "oral sepsis," that the pathological consequences of oral sepsis tend at present "to be greatly exaggerated." I am glad to notice that Dr. Hutchison is careful on this occasion only to make a suggestion, and that he has not, in his usual refreshing though rather dogmatic manner, made a definite assertion. May I also make a small contribution to this discussion?

During last season, as one of the physicians to the Royal Bath Hospital, I had under my care 261 cases, which I classified under the following groups: Chronic arthritis, muscular rheumatism or fibrositis, subacute rheumatism, neuritis, skin diseases, and miscellaneous.

The cases of chronic arthritis I attempted to subdivide into the following: Proliferative polyarticular or infective arthritis; degenerative or osteo-arthritis; articular gout; true rheumatoid arthritis, or metabolic osteo-arthritis (Nathan); chronic villous arthritis; and unclassified cases. Now in all these cases I carefully examined the mouth for evidence of oral sepsis, such as decayed teeth, swollen and inflamed gums, pyorrhœa and septic conditions of the tonsils. The arrangements at the hospital at present do not permit of bacteriological examinations, but the evidence of even such perfunctory examination as I carried out is worthy, I think, of Dr. Hutchison's attention. The percentage of oral sepsis in these cases may be seen from the following table:—

	Number of cases.	Oral sepsis.
Chronic arthritis:—		
1. Proliferative polyarticular arthritis	56	38
2. Degenerative or osteo-arthritis ...	42	10
3. Articular gout	5	1
4. Rheumatoid arthritis, or metabolic osteo-arthritis	3	None.
5. Chronic villous arthritis	9	2
6. Unclassified cases of arthritis ...	10	5
Muscular rheumatism or fibrositis	56	13
Subacute rheumatism	15	6
Neuritis	19	3
Skin diseases	36	2
Miscellaneous	10	3

Thus we see that out of a total of 261 cases admitted 83 suffered from some form of oral sepsis, and what is particularly noteworthy and almost startling is the fact that in the subdivision proliferative polyarticular, which we recognise as infective, 67 per cent. had oral sepsis. I do not wish for a moment to deny that there were not other forms of sepsis present, such as leucorrhœa, gonorrhœa, but the percentage of these was small in comparison.

I feel convinced that if the general practitioner would send these cases to the dentist when they first come under his notice instead of dosing them with salicylates and aspirin, we should soon see fewer of these distressing cases of severe crippling which are so common at all our spas, but the cases must be seen early and before the damage is done.

I am, Sir, yours faithfully,

Harrogate, June 20th, 1914. G. L. KERR PRINGLE.

INTRACRANIAL INJECTIONS OF SALVARSANISED SERUM IN PARENCHYMATOUS SYPHILIS OF THE CENTRAL NERVOUS SYSTEM.

To the Editor of THE LANCET.

SIR,—I have read with great interest the article in THE LANCET of May 30th written by Mr. Ballance on the introduction of salvarsanised serum into the lateral ventricle, and I am much impressed with this ingenious method. I understand, however, that Mr. Ballance would consider an injection into the subdural space over the hemisphere of at least equal value, and that he has given this method up only because he found it was difficult to inject a sufficient quantity of serum into the subdural space. Now I have myself in a few cases of general paralysis (six cases up to now) injected salvarsanised serum intracranially, and my experience is that it is not only possible but very easy to introduce as much as 30 c.c. in the subdural space without any subsequent leaking out of the injected fluid.

I shall as briefly as possible describe the method I have employed. With a ½-inch trephine I make an opening in the skull about 10 cm. above the anterior end of the left zygomatic arch, just behind the border of the hair. I then puncture the dura obliquely with a fine hollow needle, and when the cerebro-spinal fluid trickles out I fix a record syringe on to the needle and inject slowly 30 c.c. I then raise the patient to a sitting position and stitch up the wound. I do it all with local anæsthesia. It will generally be sufficient to inject about 5 c.c. of a 1 per cent. solution of novocaine in the soft parts that cover the skull. One only needs a small flap for the trephining. The bone itself is insensitive. Half an hour before the operation I give ¼ gr. morphia hypodermically, and I regard this as essential in order to keep the patient quiet during the operation. When the patient, after the injection, is raised to the sitting position it will generally be found that there is no leakage worth mentioning. I leave the trephine aperture open for subsequent injections, and it has proved to be very easy to puncture again through the old trephine opening; one has only carefully and slowly to push the needle in till the cerebro-spinal fluid trickles out, and then inject.

I do not think it necessary to remove any cerebro-spinal fluid before the injection; at least, I have not had any pressure phenomena after the injections and I have never removed more than 2–5 c.c. cerebro-spinal fluid before injecting. In the accompanying diagram I have tried roughly to indicate the localisation of the flap and the trephine opening. I suppose one might equally well trephine on the right side (in a case of left epileptiform attacks this would probably be preferable) or on any other part of the convexity of the skull; only I have chosen this site for trephining because of the situation of the eupractic regions on the left side and chiefly because of the ease with which trephining can be performed in this region. There is no muscular cover, one is well in front of the anterior branch of the meningeal artery, and also at a safe distance from the sinus sagittalis superior. The skull is rather thick in this region, which is an advantage, as one wants to leave the trephining aperture open for subsequent injections.

I think that this method has several advantages over the intraventricular injection. In the first place it is a much easier operation, and does not require any great surgical skill. Secondly, there is reason to believe that the injected fluid by subdural injection obtains a more direct access to the cerebral cortex than it does by the intraventricular injections.

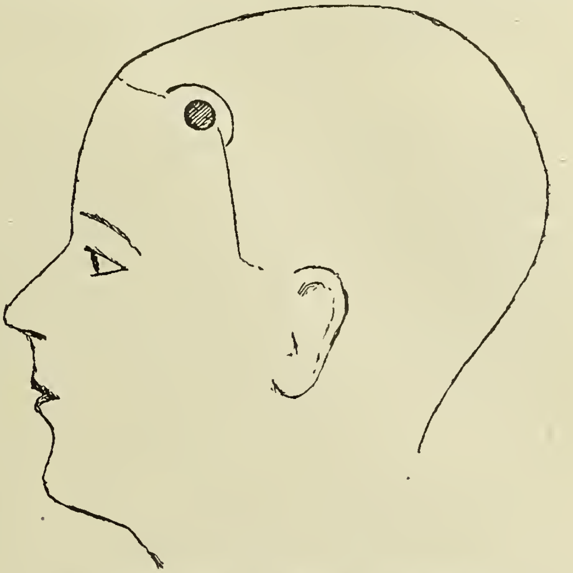

Diagram to show situation of flap and trephine opening.

As far as one can judge from Dr. Golla's experiments (as quoted by Dr. Harry Campbell in his very interesting article in THE LANCET of May 30th), a fluid injected subdurally will readily gain access to the subarachnoid space and the cortex of the brain—and as far as one can judge it will arrive at the cortex in a much less diluted and attenuated form than by intraventricular injection.

It is true one injects rather a small dose of salvarsan by injecting only 30 c.c. serum. After an intravenous injection of 0·6 grm. neosalvarsan (the dose I have generally used) one may say that the blood contains about 0·1 per 1000 neosalvarsan (the entire quantity of blood being about 6 litres), 30 c.c. will consequently only contain 3 mgrm. neosalvarsan, and it seems rational to add more neosalvarsan to the serum. How much one ought to add remains yet to be found out.

Personally I have never added any. Too short a time has elapsed to speak about the results. One thing has always to be borne in mind. Even if one kills ever so many spirochætæ, one cannot create one single new neuron. One may possibly expect a sort of regeneration of neurons which are only slightly damaged, but to expect any great improvement in the objective condition in general paralysis and tabes would be absurd. This new treatment with salvarsanised serum may possibly be able to stop the progress of the disease. Much more than that must not be expected, and therefore early diagnosis is more important than anything else. One must try to stop the disease whilst the patient is still an individual of fairly full value.

I should like to record my best thanks to the members of the honorary medical staff of the hospital for giving me the opportunity of performing these intracranial injections.

I am, Sir, yours faithfully,
G. H. MONRAD-KROHN, M.B., M.R.C.P. Lond., M.R.C.S.,
Resident Medical Officer, Hospital for Epilepsy and Paralysis, Maida Vale, W.
June 8th, 1914.

EVACUATION OF ASCITIC FLUID THROUGH A SLENDER CANNULA.

To the Editor of THE LANCET.

SIR,—In THE LANCET of June 27th, p. 1831, you mention that Dr. Buth, of Berlin, advocates tapping in ascites with a small cannula. In the second edition of my "Therapeutics of the Circulation," published three months ago, I have fully described the advantages of this process and the method of performing it. Dr. Buth's method seems exactly the same as mine, and I have described some additional precautions which I think will be useful in cases where the medical man is obliged to leave the patient for some hours.

I am, Sir, yours faithfully,
Stratford-place, W., June 29th, 1914. LAUDER BRUNTON.

THE NATIONAL MEDICAL UNION.

To the Editor of THE LANCET.

SIR,—The annual meeting of the National Medical Union took place on June 27th and the dinner followed in the evening.

The representative of THE LANCET, returning thanks for the toast of "The Press," made the remark that the value of such a union depended on unity and numbers. The membership of the union now extends to some hundreds, but to make it a success and a real force in the land it will have to increase to thousands. The principal resolution at the meeting—"That refusal of service in any capacity under the existing National Insurance Acts, 1911 and 1913, be incorporated as a primary principle in the policy of the National Medical Union"—was carried by a large majority, and it was pointed out during the meeting that there were 15,000 non-panel men in the country and 14,000 panel. It was also pointed out that in London only about 1400 men were on the panel out of 6600 names on the Medical Register, and I am informed that even those small numbers are decreased each month by about half a dozen.

A most important resolution was carried *nem. con.* to the effect that either a full-time manager or a part-time officer should be engaged at a salary to put some new life into the union, and it would depend on the guarantee fund which it would be. The fund is not very well supported, and the matter seems to me so important that I will increase my guarantee by 50 per cent. if any other man will do the same.

May I appeal to every non-panel man in the country to join at once this non-panel union? They may be tired of medical politics, but it seems to me that if the profession is not to sink to the level of "underpaid artisans" (your Commissioner for dealing with the working of the Act has stated that this was the remark made to him by a German doctor about the state of the panel men in that country) it is necessary to work for the freedom of the profession and the public; and we can only do this by union and number. But to attempt to unite panel and non-panel men is to my mind hopeless.

I am, Sir, yours faithfully,
Streatham, S.W., June 29th, 1914. E. H. WORTH.

TOUCHING FOR THE KING'S EVIL.

To the Editor of THE LANCET.

SIR,—The "IAC. 8" touch-piece, to which Dr. F. Parkes Weber alludes in his letter in THE LANCET of June 27th, was among those in the recently dispersed Hodgkin collection. I would suggest that it was struck for use in Scotland, perhaps during the 1715 campaign; otherwise it is hard to see why the Old Pretender should prefer to masquerade as James VIII. of Scotland rather than as James III. of England. I am, Sir, yours faithfully,
London, June 27th, 1914. RAYMOND CRAWFURD.

THE MEDICAL DEFENCE UNION.

To the Editor of THE LANCET.

SIR,—Having been a member of the Medical Defence Union some 28 years I venture to make some suggestions for the improvement both of the efficiency of the organisation and of the position of the members.

1. That an annual meeting of members be held at which it shall be competent for any member to bring forward motions or to ask questions, and generally discuss the business of the Union transacted during the year under consideration.
2. That an official shorthand reporter shall be present at such meeting aforesaid, and that the usual attendance book shall be signed by members before entering the meeting.
3. That an official report of the proceedings of the same shall be printed and circulated to all members.
4. That the president and council of the Union be elected at the annual meeting in question, the members of council and the ordinary members having equality both in nomination and vote. That the election be by ballot, nomination papers being previously circulated.

I am, Sir, yours faithfully,
London, June 23rd, 1914. DENNIS VINRACE.

ULTRAMICROSCOPIC VIRUS.

To the Editor of THE LANCET.

SIR,—In an annotation on the Etiology of Mumps in THE LANCET of June 27th, p. 1832, the following sentence occurs: "The investigation affords evidence that mumps is due to an ultramicroscopic virus comparable to that of poliomyelitis."

If the virus is purely chemical in nature it might be ultramicroscopic, but I have always contended that if the virus is due to the growth of a bacterial organism it matters not how minute the individual organisms may be, when they grow, as all bacteria do, in colonies composed of myriads of individuals, such colonies should be easily detected by the microscope. This has been my consistent attitude with regard to the virus, for instance, of poliomyelitis mentioned in the sentence quoted above. Has not Flexner[1] (with the assistance of Noguchi and others at the Rockefeller Institute, New York) succeeded in cultivating and identifying the virus (micro-organism) of poliomyelitis? This has been accomplished on lines similar to that devised by Noguchi for the cultivation of spirochetæ. Two cultivating media are used, and in the second minute colonies are visible, even to the naked eye, clouding the medium. Under the microscope a globular organism is found in pairs, chains, or clusters. We are further informed that by Giemsa's stain the organism can also be demonstrated in infected tissues. The disease has been reproduced experimentally in monkeys.

When once a suitable medium for cultivation and a suitable stain have been discovered, a cultivable organism should in time be recognised, in colonies at any rate.

I am, Sir, yours faithfully,

Norwich, June 26th, 1914. J. T. C. NASH.

AN EXPLANATION.

To the Editor of THE LANCET.

SIR,—In the course of a speech made by me at Leeds in November last and in the press correspondence which ensued thereon in which I dealt with the Insurance Act and the method in which it was being carried out by the medical profession, I felt it my duty to call attention to the conduct of certain doctors in Yorkshire.

It has been pointed out to me that the words I used have been interpreted by certain persons as casting a reflection upon Dr. Walker and Dr. Erhardt of Crosshills, near Keighley, and I willingly take this opportunity of stating that I did not make, and never intended to make, any imputation upon either of these gentlemen.

I would further wish to state that there is, so far as I am aware, no cause for complaint against either of these two gentlemen, who are carrying out the Act loyally and honestly, and I would desire to express sincere regret that any words of mine could possibly have been thought to be applicable to them.—I am, Sir, yours faithfully.

F. HANDEL BOOTH,
Chairman of the Council of the
Faculty of Insurance.

London, W.C., July 1st, 1914.

⁂ We are glad to publish Mr. Handel Booth's expression of regret, and hope that he will be more careful of his words in the future.—ED. L.

ILFORD AND ITS LATE MEDICAL OFFICER OF HEALTH.—On June 23rd a representative gathering of local medical practitioners took place in the Seven Kings Hotel, Ilford, under the auspices of the Ilford Medical Society. Mr. C. F. H. Stovin was the guest of honour. Mr. H. E. Watts, the President, occupied the chair, and in proposing "Long life, happiness, and properity to our late medical officer of health, Mr. Stovin," spoke of the cordial relations which had always existed between the medical officer of health and the general practitioners in the district, of their great appreciation of his services in the interests of the public health of the parish, and of their genuine regret that circumstances had arisen which necessitated his leaving them. Mr. G. N. P. Carrell, the senior practitioner present, supported the toast. The President then presented Mr. Stovin, on behalf of the society, with a silver salver suitably inscribed with words of appreciation from 36 of Mr. Stovin's professional brethren in the district. Mr. Stovin, after acknowledging the gift, proposed the toast of "The Ilford Medical Society," and the honorary secretary, Mr. Percy J. Drought, replied.

THE NATIONAL INSURANCE ACT.

PROPRIETARY MEDICINES AND THE INSURANCE ACT.

IT is to be observed that a falling off in the sale of the inland revenue stamps applied to proprietary or so-called "patent" medicines, which was stated by Mr. Lloyd George to have taken place and was attributed to the Insurance Act, has not been maintained. The Chancellor of the Exchequer at the same time (in connexion with last year's Budget) spoke of the evidence given before the Select Committee on Proprietary Medicines as a contributing cause of the decline in the trade referred to. Be this as it may, the sale of stamps during the financial year which ended on March 31st was the largest hitherto known, amounting to £360,376, an increase of £32,000 upon the figures of 1912–13. At the same time, however, the rise in the number of licences for the retail sale of these articles has increased but little, and there is no evidence of any connexion between the increased sale of articles to which stamps must be applied and the working of the National Insurance Act. As to this, it seems possible that insured patients, who have before not consulted a medical man, may have done so, and having obtained from him information as to what they are suffering from described in general terms, may have been tempted to make use of such knowledge in order to doctor themselves with advertised "cures" and "remedies"—a regrettable and dangerous course. This seems to be a reasonable explanation, if there is such an increase as that referred to in the sale of preparations strictly of a medicinal character. At the same time it would be interesting to know whether there has not been also a rather marked increase in the sale of proprietary articles which would not take the place of medicines prescribed to insured persons, but which nevertheless are sold under stamps. It may be suggested, for example, that attention drawn to the necessity for taking care of the teeth has caused a large increase in the advertisement, and presumably in the sale of proprietary dental preparations.

HOSPITALS AND THE INSURANCE ACT.

At the fifth annual conference of the British Hospitals Association, held at the Royal Victoria Infirmary, Newcastle-upon-Tyne, Dr. G. H. Hume, vice-president of the infirmary, initiated an interesting discussion in a speech which had for its subject "The Voluntary Hospital on its Trial." Dr. Hume spoke of the Insurance Act as responsible for much of the increased pressure upon the voluntary hospitals, in that it might not unfairly be said to provide treatment mainly for trivial cases and to leave the serious cases to be dealt with at the hospitals, and that it also was having its effect in precipitating the change of mutual attitude of givers and recipients. There was a growing reluctance to give, and on the part of the working-classes when they were contributors there was a growing unwillingness, if they became in-patients, to pay anything further for their treatment. Insured persons, again, believed that they had a right to have hospital treatment free, which at least was intelligible. He considered that hospitals had a claim for provision towards their expenses to be brought about by an amending Act. He suggested the division of the country into hospital areas, each with at least one institution of the first rank, and that these should be under a hospital authority so far as they were maintained by public money. He would have the necessary funds raised by county and borough rates with a Government subvention. Mr. W. G. Carnt, in commenting upon this, assured the meeting that the voluntary system was not a failure at Manchester, where he is superintendent of the Royal Infirmary. He deprecated any departure from the voluntary system. Sir Henry Burdett gave strong support to the maintenance of the voluntary system which, he declared, no Chancellor of the Exchequer alive would ever be strong enough to destroy. He compared the resulting attitude towards the patient under the voluntary system with that obtaining abroad, and declared that he would rather die than live in a country where they had State hospitals. State-aid had always meant that the professor dominated and that humanity suffered, while the one great blessing of the voluntary system was that the first consideration was the patient. Dr. D. J. Mackintosh, speaking of the Western Infirmary, Glasgow, mentioned a falling off there of £123 in the first year under the Act, owing to refusals by insured working men to continue contributing. New subscriptions, however, due to ship-building prosperity had more than made up for this.

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[1] Journal of the American Medical Association, 1913, vol. i., p. 362.

THE NATIONAL MEDICAL UNION.

On Saturday, June 27th, there was a well-attended meeting of the National Medical Union, and in the evening a banquet was given at the Café Monico, when a larger concourse of members assembled. Mr. V. T. Greenyer, of Brighton, as chairman of the council of the Union, presided at the dinner, and after the usual loyal toasts Dr. John Playfair, representing the Edinburgh Medical Guild, proposed the toast of the evening, "The National Medical Union." It had originated, he said, at Manchester in 1912 as a local body, but in the course of time and with the help of the honorary secretary, Mr. Robert Carswell, the Manchester Society had united with the Edinburgh Medical Guild and the London non-panel medical societies. The Union thus became, he said, "a central federation of the forces organised to resist the panel and uphold the best traditions of the profession." Alluding to the feeling of the medical profession against the Act, he said that he was agreeably surprised to find that the majority of medical men were not on the panel. In England 11,820 practitioners were on the panel, but 12,976 had refused to join. In Scotland 2151 were not on and 1756 were on the panel. Taking England, Scotland, and Wales together there were 15,663 non-panel and 14,472 panel doctors. Out of 15,000 doctors it should be easy for the Union to recruit a few thousand more members. Dr. Porter and Dr. James Smith, while they pleaded for the cause of individualism, which they said the Insurance Act had sacrificed, also advocated the formation of a strong, well-disciplined Union. Dr. J. Brassey Brierley said that the National Medical Union had come to stay, their members were increasing, and when the time was ripe for a general reconstruction in medical politics the Government would come to them for help. The chairman thought the fact that so many panel doctors felt the necessity of forming themselves into a strong trade union indicated that the Act was not working satisfactorily. Dr. F. J. Smith responded for "The Guests." As a teacher of medicine he thought the Act was doing harm, for though the minority of the panel doctors were doing their best, medical practice was degenerating into a mere money-making business—"profession be damned, I can earn £1000 a year by having 3000 insured persons on my list," was his way of illustrating this phase, adding, "panel practice is a short cut to £400 or £500 a year by asking a given number of people what is the matter with them and giving them prescriptions in duplicate." Dr. Smith was convinced that a large number of panel doctors did not do their work properly, and thought that the medical student, with such examples before him, would learn as little as possible, and ask why he should do more when he could earn a good living without doing it. The banquet concluded with the toast of "The Press," to which Mr. Adolphe Smith, as representing THE LANCET, responded. He referred to the fact that during the last 12 months he had visited places all over the kingdom and interviewed pro-panel and anti-panel practitioners in all centres, and had been received with equal urbanity by either while studying the existing conditions.

ELECTION OF MEDICAL REPRESENTATIVES UPON THE LONDON INSURANCE COMMITTEE.

Ballot papers for the election of medical representatives to serve upon the London Insurance Committee have now been issued to medical practitioners in the County of London by the National Insurance Commission. The election will be carried out according to the system of proportional representation. The following are the duly nominated candidates whose names appear upon the ballot papers, which when filled in must reach the returning officer, 29, Queen Anne's-gate, London, S.W., not later than 12 noon on Monday next, July 6th: R. V. Donnellan, L.R.C.S., Lewisham Park, S.E.; Major Greenwood, M.D., Hackney-road, N.E.; D. Barty King, M.D., Devonshire-street, W.; W. H. F. Oxley, M.R.C.S., East India Dock-road, E.; and Alfred Welply, M.D., Seven Sisters-road, N.

PROVISION OF SHELTERS IN LONDON.

The London Insurance Committee informs the borough councils that the Local Government Board is prepared to make grants towards the cost of providing shelters for the treatment of consumptive patients in the backyards attached to their homes.

WE are asked to state that the successful action of Dr. Alfred Salter against the London Insurance Committee, recorded in our last issue, was carried out on his behalf by the Medical Defence Union.

THE CLINICAL CONGRESS OF SURGEONS.—Mr. A. H. Tubby, for the Royal National Orthopædic Hospital, and Mr. Stephen Mayou, for the Central London Ophthalmic Hospital, have joined the general committee.

THE President and Council of the Royal Society have accepted the offer of Miss L. E. and Miss M. W. Lawrence to present £4000 to the society in trust to devote the interest arising therefrom to the furtherance of research into the cause and cure of disease in man and animals. The donors desire to associate the gift with the memory of their father, Sir William Lawrence, F.R.S., surgeon to St. Bartholomew's Hospital, and their brother Sir Trevor Lawrence, K.C.V.O., treasurer of St. Bartholomew's Hospital.

Medical News.

UNIVERSITY OF OXFORD.—In the undermentioned examinations the following candidates were approved :—

FIRST B.M. EXAMINATION.

Organic Chemistry.—J. P. B. Harold, P. S. Hougbton, J. E. B. Morton, M. E. Shaw, G. K. Stone, and W. F. Skaite.

Human Anatomy and Human Physiology.—C. W. W. Armstrong, G. Cranstoun, J. L. Dunstan, C. K. J. Hamilton, J. F. Haines, R. M. Humphreys, R. W. Lusb, B. G. v. B. Mellé, D. H. Skinner, A. E. Thomas, K. F. D. Waters, and C. D. Wood.

SECOND B.M. EXAMINATION.

Materia Medica and Pharmacology.—H. E. A. Boldero, C. J. A. Buckell, R. W. J. A. Cushing, S. C. Dyke, H. S. Jeffries, C. P. Sells, and C. P. Symonds.

Pathology.—A. C. Ballance, H. E. Bamber, J. B. Batt, H. E. A. Boldero, L. G. Brown, C. J. A. Buckell, C. H. Carlton, F. B. Chavasse, G. Cranstoun, A. W. Dennis, S. C. Dyke, K. M. Dyott, O. H. Gotch, C. H. L. Harper. H. M. Oddy, O. G. Parry-Jones, O. B. Pratt, G. P. Selby, S. W. F. Underhill, H. St. H. Vertue, A. L. Watts, and H. A. B. Whitelocke.

Forensic Medicine and Public Health.—C. H. Carlton, V. T. Ellwood, F. C. Gladstone, C. H. L. Harper, C. W. B. Littlejohn, G. A. Maling, E. E. Mather, O. G. Parry-Jones, M. O. Raven, G. S. Robinson, and G. P. Selby.

Medicine, Surgery, and Midwifery.—J. C. Davies, C. Dean, A. W. Dennis. C. W. B. Littlejohn, E. E. Mather, H. M. Pope, M. O. Raven, G. P. Selby, and A. B. Thompson.

DIPLOMA IN PUBLIC HEALTH.

Part I.—F. S. Carson, G. M. Cogswell, H. B. Gibbins, W. H. Hewlett, J. Inkster, C. F. B. Kebbell, F. J. H. Martin, L. M. Maycrs, R. S. Miller, H W. Parnis, W. R. S. Roberts, and A. H. Savage.

Part II.—N. A. Coward, H. B. Gibbins, W. Gilmour, J. Inkster, F. J. H. Martin, J. Powell, E. L. N. Rhodes, W. R. S. Roberts, and A. H. Savage.

UNIVERSITY OF SHEFFIELD: FACULTY OF MEDICINE.—The following are the results of examinations held recently :—

First Examination for the M.B., Ch.B. Degrees.—James N. Gale, John V. Mainprize, Robert H. B. Mathews, John Ryan, Alice White, and Ethel White.

Second Examination for the M.B., Ch.B. Degrees.—Mary Andrews, Frederick G. E. Hill, and Florence E. Millard.

M.B., Ch.B. Final Examination.—Part B, completing examination: William B. Allen (Second Class Honours), Gordon F. Stones, Josiah R. Turner, Derwent C. Turnbull, and Charles H. Wilson.

Diploma in Public Health.—John R. McGregor, Ernest T. K. Walker, and Percival D. Warburton.

UNIVERSITY OF DURHAM: FACULTY OF MEDICINE.—At the Convocation on June 23rd the following degrees were conferred :—

Doctor of Medicine.—James Kenworthy Johnston Haworth, Eva Lumb, and Ralph Stuart Renton.

Doctor of Medicine for Practitioners of Fifteen Years' Standing.—William Oliver Beddard, William Horton Date, John Flynn, Alfred John Hesterlow, William Massingherd Middleton Jackson, James Ryan McFerran, Edwin Maynard, and John Jesudasen Srinavasagam Pillay.

Master of Surgery (M.S.).—Joseph Jopling Brown and James Carruthers Young.

Bachelor of Medicine (M.B.).—Cyril Armstrong and Ishmael Gustavus Cummings, College of Medicine, Newcastle-upon-Tyne; Henry Hawes Elliot, Guy's Hospital; Charles Norman Gover, Frank Wilson Harlow, Maurice Henry de Jersey Harper, and Cyril Jacobs, College of Medicine, Newcastle-upon-Tyne; Hubert Vere Leigh, Guy's Hospital; Francis Metcalfe, College of Medicine, Newcastle-upon-Tyne; Eric Knowles Ryan, University of Sheffield; and Herbert Joseph Shanley, Kirton Ivor Seager Smith, and James Calvert Spence, College of Medicine, Newcastle-upon-Tyne.

Bachelor of Surgery (B.S.).—Cyril Armstrong and Ishmael Gustavus Cummings, College of Medicine, Newcastle-upon-Tyne; Henry Hawes Elliot, Guy's Hospital; Idris David Evans, Charles Norman Gover, Frank Wilson Harlow, Maurice Henry de Jersey Harper, and Cyril Jacobs, College of Medicine, Newcastle-upon-Tyne; Hubert Vere Leigh, Guy's Hospital; and Francis Metcalfe, Herbert Joseph Shanley, Kirton Ivor Seager Smith, and James Calvert Spence, College of Medicine, Newcastle upon-Tyne.

Bachelor of Hygiene (B.Hy.).—Arthur Hyde Wear and Stanley Worthington.

The following received the Diploma in Public Health (D.P.H.) :—

Arthur Hyde Wear and Stanley Worthington.

The following received the Licence in Dental Surgery (L.D.S) :—

John Thomas Smith and Sidney Wilkinson, College of Medicine, Newcastle-upon-Tyne.

At the Second Examination for the degree of Bachelor of Medicine, the following candidates were successful :—

Anatomy and Physiology.—First Class Honours: William Andrew Hewitson, College of Medicine, Newcastle-upon-Tyne. Second Class Honours: Harold Mason Leete, College of Medicine, Newcastle-upon-Tyne. Pass List: Percy Vernon Anderson, William Duncan, Ernest Craig Dunlop, Mordecai Jacob Erdberg, Charles Gordon Irwin, Malcolm Cyril Joynt, Freda Newman, George Fleming Philip, and Harold Ivan Sterne-Howitt, College of Medicine, Newcastle-upon-Tyne.

At the Third Examination for the degree of Bachelor of Medicine the following candidates were successful :—

Materia Medica, Pharmacology and Pharmacy, Public Health, Medical Jurisprudence, Pathology and Elementary Bacteriology.—Second Class Honours: Henry Evers, John Alexander Charles, and Arthur Edwin Ralne, College of Medicine, Newcastle-upon-Tyne. Pass List: John Francis Carter Braine, Guy's Hospital; John Brumwell, Harry Cecil Broadburst, George Albert Clark, Horace George Bennett Dove, and John Horsley, College of Medicine, Newcastle-upon-Tyne; and Hugh Gordon Sparrow, St. George's Hospital and College of Medicine, Newcastle-upon-Tyne.

Materia Medica, Pharmacology and Pharmacy, Public Health and Medical Jurisprudence.—Mary Russell Campbell, Reginald Arthur Hooper, Norman Alexander Martin, Carl Damien Newman, William Oxley Forster Sinclair, Alfred Cresswell Taylcr, and Robert Welch, College of Medicine, Newcastle-upon-Tyne.

Pathology and Elementary Bacteriology.—Lionel Basil Frere, Harold Kingston Graham-Hodgson, and James Dixon Johnson, College of Medicine, Newcastle-upon-Tyne; Douglas Oliver Richards, Guy's Hospital; and Alfred Smirthwaite, College of Medicine, Newcastle-upon-Tyne.

COMPLIMENTARY DINNER TO DR. JOHN BROWNLEE.—Last week a large company, mainly composed of Glasgow medical men, but representative also of the other professions in the city, met in the Grosvenor Hotel, Glasgow, to do honour to Dr. John Brownlee, lately physician-superintendent of Ruchill Hospital, on the occasion of his appointment as statistician to the Medical Research Committee under the National Insurance Act.

ST. THOMAS'S HOSPITAL MEDICAL SCHOOL.—The distribution of prizes at this school was made on Tuesday last by Sir Clifford Allbutt, Regius professor of physic at the University of Cambridge, who spoke hopefully of the future of the profession of medicine, which he considered would be enormously uplifted in the near future by the establishment of clinical and scientific centres all over the country. These, he said, would make the services of specialists available for every general practitioner at his need, while the necessity also of establishing a Ministry of Public Health was insisted upon.

RESEARCH DEFENCE SOCIETY.—The annual meeting of this society was held in the rooms of the Royal Society of Medicine on June 30th. The new President, Lord Lamington, in delivering his presidential address, said that the whole question of cruelty to animals should be considered in relation to the question as to how far it might be brutalising to the human mind. He referred to the predatory instincts found in animals, and said it might be presumed that if the wishes of dogs and cocks could be consulted they would enjoy nothing better than a good fight, but the law rightly held that whatever pleasure the animals might find in fighting it should not be allowed because of its brutalising effect on the human witnesses. He was honestly convinced that not physical pain so much as alarm to their instinct of self-preservation caused them suffering; anyone could see that they seemed indifferent to their wounds when unalarmed. All must recognise that pain was not felt with the same intensity by the lower creatures as by man, and even uncivilised man did not feel pain to the same degree as civilised man, while certain African races appeared totally insensible to pain and would on no account take an anæsthetic for an operation. In considering vivisection there could be no pain when the animals were experimented on under an anæsthetic and killed while under it. Only 5 per cent. of the experiments were of a surgical nature and these were done under an anæsthetic, and in many of them the animal was killed while under it. 95 per cent. of all experiments were of the nature of inoculations, and as to the question of pain in such, he had seen guinea-pigs infected with cancer moving about and feeding apparently without discomfort. The report of the Royal Commission showed that the actual pain caused was infinitesimal and in no degree comparable to that caused by the yearly mutilation of farm animals in millions of cases. In support of this he cited the evidence of Sir John MacFadyean before the Commission. In conclusion, he drew attention to benefits that had been derived from experiments on animals, alluded to the fact that in this way distemper among dogs might become curable, and pointed to the business of the society as the educating of public opinion to the true character and method of experiments on animals. The report stated that the membership of the society now exceeds 5000. At the conclusion of the meeting moving pictures of various disease-producing organisms were shown.

Literary Intelligence.—The W. B. Saunders Company announce for early publication a new work on Anoci-association by Professor G. W. Crile and Dr. W. E. Lower, assistant professor of genito-urinary surgery, Western Reserve University.

Death of a Centenarian.—The death occurred at Chichester on June 26th of Mrs. Elizabeth Coote, who was born on April 5th, 1812. On her 100th birthday she had a motor-car ride for the first time in her life. She was a native of Sussex.

Presentation to a Medical Man.—Dr. Evan Alban, who practised for many years at Lindfield, Sussex, and has now gone to Wales to reside, has been presented by his many friends at Lindfield and the surrounding district with a cheque for £100 and an illuminated address.

Tuberculosis Society.—We are asked to state that a meeting under the auspices of this society will be held at Leeds in the town hall at 7.45 p.m. on Wednesday, July 8th. Tuberculosis officers and practitioners specially interested in tuberculosis are invited to attend with a view to joining the society. A discussion on "The Future of the Tuberculosis Service" will be opened by the President, Dr. Halliday G. Sutherland.

St. George's Hospital.—The introductory address at the opening of the winter session of St. George's Hospital Medical School on Oct. 1st will be delivered by the Master of Christ's College, Cambridge, Mr. A. E. Shipley, F.R.S., in the large lecture theatre, at 3 p.m. The Master of Christ's will also present the prizes to the successful students. On the same evening the annual dinner will be held at Princes Restaurant, Piccadilly, at 6.30 for 7 o'clock, when the Right Hon. Sir Gerard Lowther, G.C.M.G., joint treasurer of the hospital, will take the chair.

Dr. J. E. Blomfield presided over a complimentary dinner given at the Crown Hotel, Sevenoaks, by the practitioners of Sevenoaks, Tonbridge, and the surrounding district to Mr. Arthur Maude, of Westerham, and Mr. E. G. A. Walker, of Ightham, in recognition of their prolonged and valuable services to the medical profession both in the local administration of the British Medical Association and in connexion with the National Insurance Act. Mr. Maude, who is resigning the chairmanship of the Kent medical committee and retiring from practice, was afterwards presented with a set of silver dessert dishes, inscribed with the words, "Pignus amicitiæ et gratitudinis."

Central Midwives Board.—Special meetings of the Central Midwives Board were held at Caxton House, Westminster, on June 9th and 10th, Sir Francis H. Champneys being in the chair. A number of midwives were struck off the roll, the following charges, amongst others, having been brought forward: The midwife disregarding the wish of the patient's relatives for medical assistance, and neglecting to take the pulse or temperature of a patient at her visits. A registered medical practitioner having been sent for on account of there being threatened danger the midwife did not await his arrival nor faithfully carry out his instructions as required by Rule E. 6; discontinuing attendance upon a patient at a time when she was dangerously ill. A child suffering from discharge from the eyes the midwife did not explain that the case was one in which the attendance of a registered medical practitioner was required, nor did she hand to the husband or the nearest relative or friend present the form of sending for medical help, properly filled up and signed by her, in order that this might be immediately forwarded to the medical practitioner, as required by Rule E. 20 (5). Attending a patient wearing a skirt of non-washable material, as required by Rule E. 1; being unable to take the pulse or temperature of patients, and consequently being unable to comply with Rule E. 13. With intent to avoid inspection by the local supervising authority the midwife neglected in the month of January in this year, and subsequently, although practising, to notify her intention to practise as a midwife as required by Section 10 of the Midwives Act, 1902. Medical aid having been sought for the child the midwife neglected to notify the local supervising authority thereof, as required by Rule E. 21 (1); not keeping the register of cases as required by Rule E. 23; paying no visits to the patient on the fifth, seventh, and ninth days; neglecting to disinfect the hands and forearms as required by Rule E. 3 when making an internal examination of the patient, and neglecting to adopt the antiseptic precautions required by Rule E. 7 before making the first internal examination of the patient; neglecting to wash and swab the patient's external parts as required by Rule E. 7. The case being one of puerperal fever the midwife continued to attend other patients without having undergone any disinfection to the satisfaction of the local supervising authority, as required by Rule E. 5; neglecting to explain to patients that the attendance of a registered medical practitioner is required in cases where the rules require the midwife to do so; neglecting to visit patients with due regularity, or to attend to their cleanliness, comfort, or proper dieting, as required by Rule E. 11. That being in attendance at a confinement the midwife, well knowing that the child was stillborn, falsely informed the father of the child and made false statements to other persons that the child had been born alive and had lived for a stated space of time; and describing and notifying as stillborn children who have, in fact, been born alive.—A meeting of the Central Midwives Board was held at Caxton House, Westminster, on June 18th, Sir Francis H. Champneys being in the chair. Jurisdiction of the Board: A letter was considered from a certified midwife forwarding a copy of a notice sent to her by the Cleveland Division of the North of England Branch of the British Medical Association. The Board decided that it be pointed out to the certified midwife that medical practitioners are not under the jurisdiction of the Board. Signing of cases: Correspondence attending the sending in of a schedule by a candidate for the examination of June 15th in which she had falsified the names and dates of several of the patients attended by her and had then certified them to be correct and true in all respects was considered. The Board decided amongst other matters that as regards the signature of the medical practitioner as to the correctness of the cases the facts be communicated to the General Medical Council. Examinations: A letter was considered from the honorary secretary of the medical committee of the Birmingham Maternity Hospital asking the Board to arrange for the holding of six examinations each year at Birmingham. The Board directed that the application be granted. Qualifying cases: A letter was considered from the resident medical officer of a recognised training school asking the Board whether a portion of the 20 necessary cases taken two years ago may be counted as qualifying a candidate to enter for the examination of the Central Midwives Board. The Board decided that the resident medical officer be informed that the proposed procedure is contrary to the intention of the Board, and is in its opinion highly undesirable.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Milk and Dairies Bill.

A number of amendments have been introduced by the Standing Committee of the House of Commons into the clause in the Milk and Dairies Bill prohibiting the sale of tuberculous milk. The effect is that in order to succeed the prosecution will have to prove that the farmer or dairyman has received notice that the milk was infected or the product of a diseased cow, or that he knew it to be so, or that by the exercise of ordinary care he could have ascertained the fact. In regard to the mixed milk from a number of cows, Mr. Herbert Samuel, the President of the Local Government Board, said that he proposed that the department should be authorised to make regulations to prevent danger arising from the sale of such milk or its use in manufactured products.

On Monday, June 29th, the committee had under consideration Clause 2, which contains provisions for the extension of the power to make orders respecting milk and dairies. Mr. Astor brought forward a proposal for the granting by local authorities of annual certificates of registration of dairymen and the suspension or revocation of such certificates where a dairyman had been guilty of repeated or serious offences against the Act. This proposal was strongly opposed, and was ultimately negatived without a division.

Milk and Dairies (Scotland) Bill.

On Thursday, June 25th, the Scottish Standing Committee of the House of Commons adopted a provision which is designed to define the powers of a local authority to trace contaminated milk coming from an area outside its own. This took the form of a subsection to Clause 4 of the Milk and Dairies (Scotland) Bill. It was in the following terms: "When the medical officer of health or the sanitary inspector of any district is of opinion that any milk consigned to the district from any other district is contaminated or impure, or when the medical officer has any reasonable ground for believing that any milk consigned as aforesaid is likely to cause any infectious disease or other illness, it shall be lawful for the medical officer of health, sanitary inspector, or veterinary inspector to the first-named district, to inspect the dairy from which such milk has been consigned, and to examine the cattle therein, and the dairyman and persons in his employment shall give all reasonable facilities and assistance to such officers for such inspection and examination." Some complaint was made that this would have the effect of reducing powers of inspecting milk supplies already possessed by Glasgow and Edinburgh under private Acts, but the retention of those powers may be discussed at a later stage in the proceedings.

Excellent progress was made with the Bill on Tuesday, June 30th. Few alterations were made in the text. An amendment was introduced at the instance of Captain GILMOUR to protect the name "milk" against being applied to milk substitutes.

Vital Statistics for 1912.

The seventy-fifth annual report of the Registrar-General of Births, Deaths, and Marriages in England and Wales in 1912 has been presented to Parliament. In it it is stated that the birth-rate in 1912 was 23·8 per 1000, and was 3·0 below the average of the preceding decennium. It was the lowest rate on record, being no less than 0·6 below that of 1911 which was the next lowest. The provisional figures for 1913, however, indicate a rise of 0·1 per 1000 upon the rate of 1912, this being the first year since 1908 to show an increase. The report adds that in view of the fact that the rise in 1908 proved to be only a temporary check to the general downward tendency it would be unsafe to conclude that there is any present indication of a real check in the decline of the birth-rate. The death-rate in 1912 was 13·3 per 1000, and was 1·9 per 1000 below the average for the 10 preceding years. It was the lowest on record, being 0·2 per 1000 below the lowest previously recorded, that of 1910. Infant mortality was 95 per 1000 births, being 30 per 1000 below the average of the preceding decennium. It was the lowest rate on record, being 10 per 1000 births below the lowest rate recorded, that for the year 1910. The provisional infant mortality rate for 1913, when the summer conditions were less favourable to infant life, is 109 per 1000 births. It is noted that the death-rates from enteric fever, diphtheria and croup conjointly and diarrhœal diseases were the lowest recorded. Cancer caused a higher death-rate both among males and among females than in any preceding year, but the rate from tuberculosis as a whole was the lowest on record.

HOUSE OF COMMONS.

WEDNESDAY, JUNE 24TH.

Glasgow Chemists' Accounts.

Mr. WATT asked the honourable Member for St. George's-in-the-East, as representing the Insurance Commissioners, whether the drug fund in Glasgow had turned out £2000 short for the first quarter of this year, with the result that the chemists on the panel there had been forced to accept a reduction on their accounts of 25 per cent.; whether he was aware that this swept away the whole margin of the profits of these chemists; and would he say what remedy he proposed to adopt to remedy this state of affairs.—Mr. WEDGWOOD BENN replied: The chemists in the area referred to have been paid in full for the period ending on March 14th last, but I would remind my honourable friend that the state of the drug fund cannot be fully ascertained until after the close of the medical year, and any payments in the meantime are in the nature of advances.

London Panel Fund Surplus.

Mr. WEDGWOOD BENN informed Mr. JOWETT that he understood that the London Insurance Committee was still considering its decision as to the precise method to be adopted in regard to the distribution of the panel fund surplus.

The Budget Grants.

Mr. WORTHINGTON EVANS asked the Secretary to the Treasury in what proportions the £750,000 proposed for the extension of the tuberculosis arrangements to dependents of insured persons, tuberculosis laboratories, and nurses was to be divided amongst the three items mentioned.—Mr. MONTAGU replied: It is proposed that of the sum referred to £400,000 should be allocated to tuberculosis services, £250,000 to nursing, and £100,000 to pathological laboratories.

Mr. WORTHINGTON EVANS: Have these grants been abandoned or are they in the amended Budget?—Mr. MONTAGU: They have not been abandoned. They are in the Finance Bill.

Small-pox at Pretoria.

Mr. TENNANT (Under Secretary of State for War) in reply to Mr. JOHN WARD said: So far as the Army Council are aware only one case of small-pox has occurred in the Bedfordshire Regiment at Pretoria. The man had undergone primary vaccination on enlistment in October, 1906. The case occurred in May, 1914, and the man had not been revaccinated since 1906. In the circumstances no change in the present regulations in regard to vaccination appears to be called for.

THURSDAY, JUNE 25TH.

The Mortality of Seamen.

Replying to Major ARCHER-SHEE, Mr. BURNS (President of the Board of Trade) wrote: The investigations into the mortality of seamen are being conducted by Mr. E. G. Moggridge, Mr. E. W. Colvill, Mr. C. Hipwood, Mr. T. F. Jenkins, and Captain A. H. Young, of the Board of Trade; Dr. A. H. Newsholme, of the Local Government Board; and Dr. T. H. C. Stevenson, of the General Register Office. They are considering the mortality among seamen on British merchant ships, as shown in the vital statistics, with a view to reporting what steps are desirable to diminish that mortality and how far such steps will need legislation. They will, if necessary, take evidence.

MONDAY, JUNE 29TH.

The Excessive Sickness Inquiry.

Mr. WEDGWOOD BENN stated in reply to Mr. CHARLES BATHURST that he was informed that the Departmental Committee upon excessive sickness in connexion with the National Insurance Act had finished taking evidence and hoped to report at an early date.

National Insurance and the Government of Ireland Bill.

Mr. NEWMAN asked the Chancellor of the Exchequer whether the proportion of the proposed grants due to Ireland in respect of National Health Insurance, feeding of school children, nursing, and health research would be specifically allocated in respect of the above enumerated or similar services, or would in the event of the Government of Ireland Bill becoming an Act be automatically added to the transferred sum and be at the disposal of the Irish Government.—Mr. LLOYD GEORGE answered: Subject to the provision of Clause 5 (2) of the Government of Ireland Bill all public services in Ireland in connexion with the administration of the National Insurance Act are matters reserved to the Government of the United Kingdom. The proposed grant in respect of National Health Insurance will be administered by that Government. The equivalent grants to Ireland corresponding to the grants in Great Britain for new educational services, tuberculosis, and pathological laboratories will be added to the transferred sum, and be at the disposal of the Irish Government.

TUESDAY, JUNE 30TH.

The Tariff to Chemists in Scotland.

Mr. WATT asked the honourable Member for St. George's-in-the-East, as representing the Insurance Commissioners, whether the tariff paid to chemists in Scotland under the National Insurance Act was the same as that paid to chemists in England, and whether the chemists in Scotland had shown the necessity because of the different circumstances existing there of having a Scottish tariff of prices instituted.—Mr. WEDGWOOD BENN replied: The tariffs in force in England were the subject of local negotiations with the various areas, and they afford no ground for a comparison of the circumstances of England as a whole with those of Scotland.

BOOKS, ETC., RECEIVED.

BAILLIÈRE, TINDALL, AND COX, London.

Practical Hormone Therapy. A Manual of Organotherapy for General Practitioners. By Henry R. Harrower, M.D., with Foreword by Professor Dr. Artur Biedl, Vienna. Price 15*s.* net.

CHAPMAN AND HALL, LIMITED, London.

The House on Wheels. By Elizabeth Sloan Chesser, M.B. Price 2*s.* net.

HODGE, WILLIAM, AND CO., Edinburgh and London.

The Trial of Mary Blandy. Edited by William Roughead. Price 5*s.* net.

JARROLD AND SONS, London.

How to Keep Fit. A Series of Special Lectures to Young Men delivered at the Central Y.M.C.A., London. By W. McAdam Eccles, M.S., M.B., F.R.C.S.; Sir Robert W. Burnet, M.D., F.R.C.P., J.P.; Sir Dyce Duckworth, Bart., M.D., F.R.C.P.; Sir R. Douglas Powell, Bart., K.C.V.O., M.D.; Sir George Henry Savage, M.D., F.R.C.P.; James Cantlie, M.A., M.B., F.R.C.S., D.P.H.; and Sir Francis H. Champneys, Bart., M.D., F.R.C.P. Price 1*s*. net.

LANE, JOHN, London and New York. **BELL AND COCKBURN**, Toronto.

The New Optimism. By H. de Vere Stackpoole. Price 3*s*. 6*d*. net.

LAURIE, T. WERNER, LIMITED, London.

Tales of Two Countries. By Maxim Gorky. Price 6*s*.

MATTHEWS, A., AND CO., LIMITED, Chancery-lane, W.C.

Matthews's Manual of Nursing Homes and Hydros of the British Isles and Guide to Spas and Health Resorts. Price 2*s*. 6*d*.

SAFÂR, JOSEF, Wien und Leipzig.

Militärmedizin und ärztliche Kriegswissenschaft. Price M.8. Von der Abteilung heraugegeben und für dieselbe redigiert von generalstabsarzt Dr. Zdislaus Ritter v. Juchnowicz-Hordynski und Stabsarzt phil et med Dr. Erhard Glaser. Heft I., Kriegs- und Militärchirurgie sowie Verbandkunde. Heft II., Militärgesundheitspflege und Heeresseuchen. Heft III., Beiträge zum Truppensanitätsdienst. Heft IV., Interne Krankheiten. Heft V., Geistes- und Nervenkrankheiten. Heft VI., Ohren-, Nasen- und Halskrankheiten. Heft VII., Zahnheilkunde. Heft VIII., Die Salvarsanbehandlung beim k.u.k. Heere.

ST. CATHERINE PRESS, THE, 34, Norfolk-street, Strand, W.C.

Why Early Death? By M. C. Sykes, M.D., F.R.C.S.E., D.P.H. Lond., F.C.S. Price 6*d*. net.

SAUNDERS (W. B.), COMPANY, London.

Infant Feeding. By Clifford G. Grulee, A.M., M.D., Assistant Professor of Pediatrics at Rush Medical College, Chicago. Illustrated. Second edition. thoroughly revised. Price 13*s*. net.

Collected Papers by the Staff of St. Mary's Hospital, Mayo Clinic, 1913. By W. J. Mayo, M.D., C. H. Mayo, M.D., and their Associates. With 335 illustrations. Price 24*s*. net.

Chemical Pathology. By H. Gideon Wells, Ph.D., M.D., Professor of Pathology in the University of Chicago, and in Rush Medical College, Chicago. Second edition, thoroughly revised. Price 15*s*. net.

SPON, E. AND F. N., London.

The Evolution of Greater Britain's Antiseptic House and Town Sewage-Drainage Systems of the Twentieth Century and After—for all Time. With Descriptions of Inherent Defects of the Nineteenth Century Systems and How to Overcome those Defects at Great Saving of Expense. By Isaac Shone, Civil, Mining, and Sanitary Engineer. Price 25*s*. net.

SPRINGER, JULIUS, Berlin.

Abwehrfermente. Das Auftreten blutfremder Substrate- und Fermente im tierischen Organismus unter experimentellen physiologischen und pathologischen Bedingungen. Von Emil Abderhalden (Halle). Price M.12.

UNIVERSITY PRESS, Cambridge.

The Life, Letters, and Labours of Francis Galton. By Karl Pearson, Galton Professsor, University of London. Vol. I.: Birth. 1822, to Marriage, 1853. Price 21*s*. net.

Know Your Own Mind. A Little Book of Practical Psychology. By William Glover. Price 2*s*. net.

The Philosophy of Biology. By James Johnstone, D.Sc. Price 9*s*. net.

VIGOT FRÈRES, Paris.

Les Anomalies de l'Urine. Par A. Escaich. Price Fr.3.

WILSON, EFFINGHAM, 54, Threadneedle-street, E.C.

Partnership (Law and Practice). By H. C. Emery. Price 5*s*. net.

Dictators of Mexico. By John De Kay. Price 2*s*. 6*d*. net.

YEAR BOOK PRESS, 31, Museum-street, W.C.

Directory of Women Teachers and other Women connected with Higher and Secondary Education. 1914. Price 7*s*. 6*d*. net.

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

ASHBY, HUGH T., M.B., B.C. Cantab., M.R.C.P. Lond., has been appointed Honorary Physician to the Salford Royal Hospital.

DAVIES, H. W., M.B., B.S. Lond., has been appointed House Surgeon at University College Hospital.

DEAKIN, H. V., M.R.C.S., L.R.C.P. Lond., has been appointed House Physician at University College Hospital.

DE SOUZA, D. H., M.D., D.Sc., M.R.C.P., has been appointed Demonstrator in Physiology at King's College, University of London.

DICKSON, W. E. CARNEGIE, M.D. Edin., F.R.C.P. Edin., has been appointed Director of the New Pathological Department of the Royal Hospital for Diseases of the Chest, City-road, E.C.

GREGOR, ALEXANDER, M.D. Aberd., has been appointed a Medical Referee under the Workmen's Compensation Act, 1906, for County Court Circuit No. 59.

HUDSON, R., M.D. Durh., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Pontymister District of the county of Monmouth.

JONES, HOWARD, M.B., B.S. Lond., M.R.C.S., L.R.C.P., has been appointed Honorary Anæsthetist to St. Mark's Hospital for Diseases of the Rectum.

MORLEY, JOHN, Ch.M., F.R.C.S. Eng., has been appointed Honorary Assistant Surgeon for Children at the St. Mary's Hospitals, Manchester.

NYHAN, CHARLES, L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer of Health of Brynmawr.

POSTLETHWAITE, J. M., L.R.C.P. Lond., M.R.C.S., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Whalley District of the county of Lancaster.

REES, F. H., M.B., B.S. Lond., has been appointed Obstetric Assistant at University College Hospital.

RICKARDS, J., M.B., Ch.B. Vict., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Brackley District of the county of Northampton.

ROBERTS, ROBERT ELLIS, M.B. Lond., has been appointed Medical Officer of Health to the Mynyddislwyn Urban District Council.

RUSSELL, J. R., M.D. Durh., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Westerham District of the county of Kent.

SEDGWICK, RICHARD ERNEST, M.D. Cantab., has been appointed a Medical Referee under the Workmen's Compensation Act, 1906, for County Court Circuit No. 3.

SKERRETT, FRANK B., M.B., B.Sc. Lond. & Vict., D.P.H., M.R.C.S., has been appointed Assistant Medical Officer of Health and Chief Assistant School Medical Officer of the County Borough of West Ham.

STEADMAN, F. ST. J., D.P.H., L.R.C.P. Lond., M.R.C.S., L.D.S., has been appointed Assistant Dental Surgeon to the Royal Dental Hospital.

SUTCLIFFE, LIONEL E., M.B., Ch.B. Sheff., has been appointed Second Honorary Anæsthetist to the Chesterfield and North Derbyshire Hospital.

SYMONS, JOHN, M.R.C.S., L.S.A., has been appointed a Medical Referee under the Workmen's Compensation Act, 1906, for County Court Circuit No. 59.

UNDERWOOD, B., M.B., B.S. Lond., has been appointed Clinical Assistant in the Dental Department at University College Hospital.

WATT, R. H., M.D. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Langholm District of the county of Dumfries.

WILLIS, MORLEY, F.R.C.S. Eng., has been appointed a Medical Referee under the Workmen's Compensation Act, 1906, for County Court Circuit No. 18.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ABERGAVENNY, MONMOUTHSHIRE ASYLUM.—Locum Tenens Assistant Medical Officer. Salary 6 guineas per week, and all found.

ARGYLL AND BUTE DISTRICT ASYLUM, Lochgilphead.—Medical Superintendent. Salary £500 per annum, with house and allowances.

BARROW-IN-FURNESS, NORTH LONSDALE HOSPITAL.—House Surgeon. Salary £150 per annum, with residence, board, and laundry.

BEDFORD COUNTY HOSPITAL.—Assistant House Surgeon. Salary £100 per annum, with board, lodging, and laundry.

BETHLEM ROYAL HOSPITAL, Lambeth-road, S.E.—Second Assistant Medical Officer, unmarried. Salary £275 per annum, with apartments, board, and laundry.

BIRKENHEAD BOROUGH HOSPITAL.—Senior House Surgeon. Salary £120 per annum, with board and laundry.

BIRMINGHAM GENERAL DISPENSARY.—Resident Medical Officer, unmarried. Salary £240 per annum, with apartments, fire, light, and attendance.

BIRMINGHAM, QUEEN'S HOSPITAL.—One House Physician and Two House Surgeons for six months. Salaries at rate of £50 per annum, with board, lodging, and washing.

BOARD OF CONTROL.—Medical Superintendent of a State Institution for Defectives of Dangerous or Violent Propensities shortly to be opened near Liverpool. Salary £800 per annum and unfurnished house.

BOLINGBROKE HOSPITAL, Wandsworth Common, S.W.—House Surgeon for six months. Salary £75 per annum, with board, residence, and laundry.

BOLTON INFIRMARY AND DISPENSARY.—Third House Surgeon. Salary £110 per annum, with apartments, board, and attendance.

BOOTLE BOROUGH HOSPITAL.—Senior and Junior House Surgeons. Salaries £120 and £100 respectively, with residence, board, and laundry.

BRADFORD ROYAL INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with board, residence, and washing.

BRENTFORD UNION INFIRMARY, WARKWORTH HOUSE, AND SCHOOLS, Isleworth, W.—Second Assistant Medical Superintendent, unmarried. Salary £175 per annum, with usual residential emoluments.

BRIGHTON, ROYAL ALEXANDRA HOSPITAL FOR SICK CHILDREN.—House Surgeon. Salary at rate of £100 per annum, with board, lodging, and washing.

BRISTOL ROYAL INFIRMARY.—Honorary Ophthalmic Surgeon.

BUXTON, DERBYSHIRE, DEVONSHIRE HOSPITAL.—Assistant House Physician for six months. Salary £100 per annum, with apartments, board, and laundry.

CAMBERWELL TUBERCULOSIS DISPENSARY, 19, Brunswick-square, S.E.—Assistant Medical Officer. Salary £250 per annum.

CARDIFF, KING EDWARD VII.'S HOSPITAL.—Two House Surgeons for six months. Salary at rate of £60 per annum, with board, residence, and laundry.

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, London, S.W.—Surgeon to In-patients.

CHELSEA INFIRMARY, Cale-street, S.W.—Second Assistant Medical Officer. Salary £140 per annum, with board, washing, apartments.

Colchester, Essex County Hospital.—House Physician. Salary £100 per annum, with board, residence, and washing.

Derby Mental Hospital.—Senior and Junior Assistant Medical Officer. Salaries £250 and £200 respectively, with board, apartments, and washing.

Devonport, Royal Albert Hospital.—House Surgeon, unmarried. Salary £150 per annum, with board and laundry.

Durham County Hospital.—House Surgeon. Salary £150 per annum, with board and lodging.

East London Hospital for Children and Dispensary for Women, Shadwell, E.—Medical Officer to Casualty Department for six months. Salary at rate of £100 per annum, with luncheon and tea. Also House Physician. Salary at rate of £75 per annum, with board, residence, and laundry.

Essex Education Committee.—Medical Inspector of School Children. Salary £300 per annum.

Evelina Hospital for Sick Children, Southwark, S.E.—House Surgeon for four months. Salary at rate of £75 per annum, with board, residence, and washing.

Gloucestershire Education Committee.—School Medical Inspector. Salary £250 per annum.

Halifax Royal Infirmary.—Second House Surgeon and Third House Surgeon, unmarried. Salary £120 and £100 per annum respectively, with residence, board, and washing.

Hertford County Hospital.—Resident Medical Officer, unmarried. Salary £100 per annum, with board, washing, and rooms.

Hospital for Consumption and Diseases of the Chest, Brompton, S.W.—Assistant Physician. Also Assistant Resident Medical Officer. Salary £100 per annum, with board and residence. Also House Physician for six months. Salary 30 guineas.

Huddersfield Royal Infirmary.—Assistant House Surgeon. Salary £80 per annum, with board, rooms, and washing.

Hull Royal Infirmary.—Casualty House Surgeon. Salary at rate of £80 per annum, with board and lodging. Also Assistant House Surgeon. Salary at rate of £100 per annum, with board and lodging. Also Honorary Assistant Ophthalmic Surgeon.

Indian Medical Service.—Thirteen Commissions.

King Edward VII. Sanatorium, Midhurst, Sussex.—Second Assistant Medical Officer, unmarried. Salary £150 per annum, with board, lodging, and attendance.

King's Lynn, West Norfolk and King's Lynn Hospital.—House Surgeon. Salary £150 per annum.

Lambeth Parish Infirmary Workhouses, Brook-street, Kennington-road, S.E.—Fourth and Sixth Assistant Medical Officers. Salary at rate of £160 and £150 per annum respectively, with residential allowances.

Leeds Public Dispensary.—Junior Resident Medical Officer. Salary £130 per annum, with board, residence, and laundry.

Leeds Tuberculosis Association.—ResidentMedical Officer at Sanatorium, Gateforth, near Selby, for six months. Salary at rate of £100 per annum, with board, lodging, and washing.

Liverpool City Infectious Diseases Hospital.—Assistant Resident Medical Officer, unmarried. Salary £150 per annum, with board, washing, and lodging.

Liverpool School of Tropical Medicine.—Research Assistant at Runcorn Research Laboratory. Salary £150 per annum.

Liverpool Stanley Hospital.—Two House Physicians and a House Surgeon. Salary £75 per annum each, with board, residence, and laundry.

Maidstone, Kent County Asylum.—Fourth Assistant Medical Officer, unmarried. Salary £250 per annum, with quarters, board, attendance, washing, &c.

Maidstone, West Kent General Hospital. — Assistant House Surgeon, unmarried. Salary £80 per annum, with board, lodging, and washing.

Manchester, Hulme Dispensary, Dale-street, Stretford-road.—House Surgeon. Salary £180 per annum, with apartments, attendance, coal, and gas.

Manchester Northern Hospital for Women and Children, Park-place, Cheetham Hill-road.—House Surgeon. Salary £120 per annum, with apartments and board.

Manchester Royal Eye Hospital.—Junior House Surgeon. Salary £80 per annum, with residence, board, and washing.

New Hospital for Women, Euston-road.—Female Obstetric Assistant. Board, lodging, and washing provided.

Northampton General Hospital.—Two House Surgeons, unmarried. Salary £120 per annum each, with apartments, board, washing, attendance, &c.

Nottingham General Hospital.—Assistant House Physician for six months. Salary at rate of £100 per annum, with board, residence, and laundry.

Ogmore and Garw Urban District Council.—Medical Officer of Health. Salary £325 per annum.

Plymouth, South Devon and East Cornwall Hospital.—House Physician for six months. Salary £90 per annum, with board, residence, and washing.

Portsmouth Royal Hospital.—House Surgeon for six months. Salary £90 per annum, with board, &c.

Preston, County Asylum, Whittingham, Lancs.—Junior Assistant Medical Officer and Assistant Medical Officer, unmarried. Salary £250 per annum, with board, apartments, &c.

Preston County Borough.—School Medical Officer. Salary £350 per annum.

Prince of Wales's General Hospital, Tottenham, N.—Junior House Physician and Junior House Surgeon for six months. Salary £75 per annum each, with residence, board, and laundry.

Queen's Hospital for Children, Hackney-road, Bethnal Green, E.—House Surgeon for three months. Salary £80 per annum, with board, residence, and washing.

Retford, State Criminal Lunatic Asylum.—Assistant Medical Officer, unmarried. Salary £225 per annum, with quarters, coals, light, and attendance. Also Medical Locum Tenens. Salary £5 5s. per week, with quarters, coal, light, and attendance.

Rochdale Infirmary and Dispensary.—Senior and Junior House Surgeons, unmarried. Salary £120 and £110 per annum respectively, with board, residence, and laundry.

Rotherham Hospital.—Senior and Junior House Surgeons. Salaries £200 and £100 respectively, with board, lodging, and washing.

Royal Free Hospital, Gray's Inn-road, W.C.—Female Assistant Anæsthetist. Salary £75 per annum.

Royal Naval Medical Service.—Twenty-five Appointments.

Royal Waterloo Hospital for Children and Women, S.E.—Surgeon to Out-patients. Also Junior Resident Medical Officer. Salary at rate of £50 per annum, with board and washing.

St. Mary's Hospital for Women and Children, Plaistow, E.—Assistant Resident Medical Officer, Salary at rate of £100 per annum, with board, residence, and laundry.

Salford County Borough.—Junior Resident Medical Officer at Ladywell Sanatorium, Salford. Salary £150 per annum, with apartments, &c.

Salford Royal Hospital.—House Surgeon, Junior House Surgeon, and Casualty House Surgeon. Salary at rate of £100 per annum each, with board and residence.

Salisbury (General) Infirmary.—House Surgeon, unmarried. Salary £100 per annum, with apartments, board, and lodging.

Samaritan Free Hospital for Women, Marylebone-road, N.W.—Resident House Surgeon. Salary £80 per annum, with board and washing.

Scarborough Hospital and Dispensary.—Senior House Surgeon. Salary £100 per annum, with board, residence, &c.

Sheffield, East End Branch of the Children's Hospital (Out-patient Department).—House Surgeon. Salary £120 per annum, with board and residence.

Shrewsbury, Salop Infirmary.—House Physician. Salary at rate of £110 per annum, with board and apartments.

Somerset County Council.—Assistant Tuberculosis Officer. Salary £300 per annum.

Sunderland Royal Infirmary.—Two Junior House Surgeons. Salary £100 per annum each, with board, residence, and laundry.

Surrey County Council.—Assistant Medical Officer of Health. Salary £400 per annum.

Swansea General and Eye Hospital.—Two House Surgeons. Salary £125 per annum, with board, washing, and attendance.

Trinidad and Grenada, British West Indies.—Two Assistant Medical Officers in Campaign against Ankylostomiasis. Salaries £400 per annum.

Truro, Royal Cornwall Infirmary.—House Surgeon, unmarried. Salary £100 per annum, with rooms, board, and washing.

Univerrsity of London, University College.—Lecturer and Demonstrator in Anatomy. Salary £350 per annum.

University College Hospital, Gower-street, W.C.—Junior Surgical Registrar. Salary £80 to £100 per annum.

Victoria Hospital for Children, Tite-street, Chelsea, S.W.—House Physician and House Surgeon for six months. Salary £40, with board and lodging.

Walsall and District Hospital.—Assistant House Surgeon. Salary £110 per annum, with board, residence, and laundry.

Warwickshire and Coventry Joint Committee for Tuberculosis.—Tuberculosis Medical Officer. Salary £500 per annum.

West African Medical Staff.—Appointments. Salary £400 per annum, with free quarters. Gibraltar: Second Assistant Colonial Surgeon. Salary £350 per annum, with free quarters.

West Bromwich and District Hospital.—Assistant Resident House Surgeon and Anæsthetist, unmarried. Salary £100 per annum, with board, residence, and washing.

West End Hospital for Diseases of the Nervous System, Paralysis, and Epilepsy, 73, Welbeck-street, W.—Clinical Assistants to the Out-patients' Physicians.

West Ham and Eastern General Hospital.—Junior House Physician and Junior House Surgeon. Salary at rate of £75 per annum, with board, residence, and washing.

West Hartlepool, Cameron Hospital.—House Surgeon, unmarried. Salary £150 per annum, with board and rooms.

Westminster Union Infirmary, Fulham-road, S.W.—Third Assistant Medical Officer. Salary £140 per annum, with board, residence, and washing.

Weston-super-Mare Hospital.—House Surgeon, unmarried. Salary £120 per annum, with residence, board, and laundry.

Willesden Urban District Council.—Consulting Ophthalmic Surgeon. Salary at rate of 1 guinea per hour. Also Assistant Medical Officer of Health and Assistant School Medical Officer. Salary £300 per annum.

Winchester, Royal Hampshire County Hospital.—House Physician. Salary £80 per annum.

Wolverhampton and Midland Counties Eye Infirmary.—House Surgeon. Salary £120 per annum, with apartments, board, and laundry.

The Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies for Certifying Surgeons under the Factory and Workshop Acts at Harris, in the county of Inverness; and at Southwell, in the county of Nottingham.

Births, Marriages, and Deaths.

BIRTHS.

Adams.—On June 28th, at Labuan, Straits Settlements, the wife of J. Wilmot Adams, M.B., C.M., of a daughter.

Finn.—On June 29th, at Ebury-street, Eaton-square, S.W., the wife of Allan Finn, M.D., F.R.C.S., of a son.

Green.—On June 26th, at Romford, the wife of Charles David Green, M.D. Lond., F.R.C.S. Eng., of a daughter.

MARRIAGES.

Hunt—Stubbs.—On June 25th, at St. Gabriel's, Westminster, Edwin Guy Hunt, M.D., M.R.C.S., L.R.C.P., to Kate Millicent Stubbs.

Mitchell—Bruce.—On June 27th, at St. Barnabas, Kensington, W., T. J. Mitchell, Captain R.A.M.C., to Blanche Katherine, eldest daughter of the late Robert Bruce, M.D., F.R.C.S.E., Edinburgh.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

CARBOLIC ACID INJECTIONS IN TETANUS.

To the Editor of THE LANCET.

SIR,—I have only recently returned from China. In reply to Dr. F. Carden Brodie's letter in your issue of May 30th last, with reference to my paper in THE LANCET of May 23rd the following table, which was accidentally omitted, shows the dosage given :—

Day after admission.	Temperature, Fahr.		Pulse.		Times.	Injection.		Anæsthetic given.
	M.	E.	M.	E.		Amount. oz.	Strength. %	
1st day	99·0°	100·5°	124	108	2 A.M. 2 P.M. 10 P.M.	1½ 2 2	1 2 2	Yes. ,, ,,
2nd ,,	99·0°	101·0°	108	124	10 A.M. 2 P.M. 10 P.M.	2 2 2	2½ 2½ 2½	,, ,, ,,
3rd ,,	99·0°	100·5°	116	108	10 A.M. 6 P.M.	2½ 2½	3 3	,, ,,
4th ,,	99·0°	102·0°	114	130	2 A.M. 10 A.M. 6 P.M.	2½ 2½ 2½	3 3 3	,, ,, ,,
5th ,,	101·2°	99·8°	130	140	10 A.M. 10 P.M.	2½ 2½	3 3	,, ,,
6th ,,	98·6°	100·0°	120	136	—	None given.		—
7th ,,	99·0°	101·2°	124	110	10 A.M.	3	3	Yes.
8th ,,	98·6°	100·0°	104	112	—	None given.		—
9th ,,	99·0°	99·5°	104	104	—	,,	,,	—
10th ,,	99·0°	101·5°	102	116	2 A.M.	2½	3	Yes.
11th ,,	98·6°	99·0°	108	112	10 A.M. 10 P.M.	1½ 2½	3 3	,, ,,
12th ,,	100·8°	99·0°	100	124	2 P.M.	2½	3	,,
13th ,,	99·0°	99·0°	96	128	—	None given.		—
14th ,,	99·0°	100·0°	100	106	2 P.M.	2½	3	Yes.
15th ,,	99·5°	99·0°	108	120	2 P.M.	2½	3	,,

I am, Sir, yours faithfully,
W. GRAHAM REYNOLDS.
St. Mary's Hospital, W., June 22nd, 1914.

HEALTH AND SANITATION IN CEYLON.

A SUPPLEMENTARY report on the affairs of Ceylon for the year 1912 (delayed on account of fresh arrangements in connexion with the publication of the Blue-book of the colony) has just been presented to Parliament. It shows that the estimated population on Dec. 31st was 4,189,000. There is an excess of males over females, the proportion being 113 males to 100 females. The birth-rate for 1912 was 33 per mille, and was lower than the average (38). It appears to be gradually declining. The death-rate for the whole island was 32 per mille, and was in excess of the average (28). The Ceylon rate appears to be lower than that of Bombay, but higher than rates in Bengal, Madras, Jamaica, and British Guiana. The infantile mortality was 215 per 1000 births, compared with an average of 183. Snakebite, homicide, and suicide each accounted for 50 deaths per 1,000,000 of the population. There were 29 executions—i.e., 7 per 1,000,000, as compared with 4 per 1,000,000 in England and Wales. The tea, rubber, and cocoa estates contain a population of about 578,200, mostly of Tamils immigrant from Southern India. The estate death-rate rose to 40 from an average of 35, and in one district was as high as 72. The chief causes of death were fever (chiefly malarial), diarrhœa, dysentery, pneumonia, and phthisis. There were only 13 deaths from cholera, as against 277 in 1911 and 22 in 1910. Deaths from small-pox numbered 15, as against 89 in 1911 and 29 in 1910. Ankylostomiasis claimed 1843 victims, as against 2001 in 1911. Measures have been taken for the prevention of malaria by the free distribution of quinine, the circulation of leaflets, and lectures and demonstrations to the public through the officers of the Medical Department and the headmen. Ankylostomiasis, which is extremely prevalent amongst estate coolies, especially in the low country, has been and is receiving considerable attention on the part of the inspecting medical officers. A large number of estates have been visited by them, and both prophylactic and medical treatment are being adopted. Parangi (yaws) has been treated successfully with salvarsan in some of the hospitals, and arrangements are being made to introduce it to other hospitals. Vaccination is systematically carried on throughout the island by a special staff. During the year 140,501 subjects were vaccinated. The percentage of successful primary vaccinations to total inspected was 93·3, while that of successful re-vaccination cases was 71·7. Stringent precautions are taken under the auspicies of the plague committee to prevent the introduction of plague into Ceylon, which has hitherto been immune from the disease. One case of plague in a European was landed at Galle in July, the patient recovering. There were 14 deaths from hydrophobia, as against 38 in the previous year. The Ceylon Government gives an annual grant to the Pasteur Institute at Coonoor, and poor persons bitten by rabid animals and unable to bear the expense of the journey are sent there at the cost of the Government. Concerted action is being taken by the local authorities to stamp out rabies by enforcing the registration of dogs and by the destruction of homeless vagabond dogs (pariahs).

The drainage of Colombo has been undertaken by Government at the request of the municipal council, the necessary funds being advanced by Government on loan, while further assistance is being given by the contribution of a part of the expenditure as a free grant. The scheme provides for a complete system of sewers and rain-water drains throughout the city and for the disposal of the sewage by bacterial treatment upon modern lines. With the assistance of Government, partly by way of grant, partly of loan, various local bodies have undertaken the provision of an improved water-supply for the towns under their control.

There is a marked variation in climate between the different parts of Ceylon. In the low country, with a mean temperature of the order of 80° F., a noticeable feature is the small range of both temperature and pressure. There is, however, wide divergence between the moist conditions in the south-west of the island, where the annual rainfall is often over 100 inches, and the dry zone areas of the north, north-west, and south-east. Inland, with altitudes reaching 8000 feet, the temperature is cooler and shows a bigger daily range; there is a corresponding change in vegetation, and the conditions are altogether more akin to those in the temperate zone. The rainfall of 1912 was below normal in the north and north-east, and above it in the south and south-west. Ratnapura again headed the list in absolute amount—viz., 149·95 inches, which is practically identical with the average for that station. Colombo observatory, with 101·14 inches on 195 days, was well above normal. The mean temperature at Colombo was 81·0° F., and at Kandy 76·6°. The highest temperature reached in the island was 100·2° on August 10th at Anuradhapura. The highest on record is 103·7° at Trincomalee on May 12th, 1890.

There are 76 Government hospitals, the number of beds in them ranging from 30 to 425. In addition, there are 418 out-door Government dispensaries and 279 estate dispensaries supported by the planters, who get their drugs free up to a value of 50 cents per cooly per annum. The Lunatic Asylum is situated in Colombo. There are 714 inmates. The Leper Asylum is situated about six miles from Colombo, and contains 398 patients. A small establishment for lepers exists in the eastern province, and contains 36 patients. A large leper settlement is to be founded there shortly. In association with Government a home for incurables (containing 80 beds) is worked by a committee of Government officials and representatives of the public.

The Medical College accommodated in 1912 148 medical and 90 apothecary students. The full course of training for medical students is five years. A diploma in medicine, surgery, and midwifery (which can be registered in the United Kingdom) is granted to successful students. In association with the college there are a bacteriological institute with a small clinic for tropical medicine attached, a laboratory for the Government analyst, an ophthalmic hospital, a lying-in home, a woman's hospital, a children's hospital, and special hospitals for the insane, lepers, and infectious diseases.

SEA-BATHING AND COLD BATHS.

SEA-BATHING began to be popular in England in the "seventies" of the eighteenth century. In 1779 Margate is referred to as "a place of great resort for sea-bathing." Our quotation is from "A Tour Through the Island of Great Britain," eighth edition, a work begun by Daniel Defoe and continued by Samuel Richardson. Later we read, "Brighthelmstone is now become a polite place, and very convenient for sea-bathing. Several machines have been built." In other early guide-books of this period the machines are elaborately described and illustrated, and it is to be noticed that the little dome-like tent, still sometimes seen at the back or sea-door of the machine, was intended to ensure privacy for persons in the costume of Adam or even of Eve. The sea-bath was adventured on for hygienic purposes. It was supposed by its more enthusiastic advocates, such as Dr. White, a writer on the subject in 1775, to cure quite a number of diseases. The sea-bath did not reach the continent until many years later. At the time of the Restoration, after Waterloo, certain English families, driven from their own country by creditors, brought the custom to Dieppe. All the gouty and lame among the new immigrants are said to have gone to the bleak northward-facing beach in the month of August, and there, leaving their clothes in heaps, they "bravely presented their heads and shoulders to the waves." In other words, the men bathers struck out to sea. They soon found Gallic imitators. Remarkable salt-water cures were recorded. Certain famous French physicians took the custom under their protection and fashion did the rest. Hence, when Vitet published his "Guide to Dieppe" in 1844—it is quite a work of literature —he was able to refer to an annual exodus of sea-bathers to all the French seaside towns and villages. Such baths, says this writer, are not the remedy of every ill; it would certainly be easier to cite the illnesses to which they are hostile than to make out a list of those which they can successfully combat or root out. The *établissement* at Dieppe dates from 1821, but although patronised by the famous Duchesse de Berry, it was probably for long regarded as somewhat of a fad. Indeed, as we travel eastward in Europe we find that wonder at the English bathing habit increases apace. From Paris eastwards it is common form to say that "the English must be a very dirty people" to require so many baths, and as we reach Vienna we find the bath regarded as an occasional luxury only. Yet the ancient Teutons, according to Tacitus, were the original users of the cold river bath. How can we account for the shyness in this matter of their direct descendants? And how is it that the Gaul, the inheritor of Roman tradition, is not an ardent advocate of the bath?

A WARNING.

To the Editor of THE LANCET.

SIR,—By the advice of the police I am warning your readers against a man of gentlemanly and plausible address who consulted me on June 24th, paying his fee by a cheque on the Tottenham Court-road branch of the London City and Midland Bank. This draft was returned marked "no account," and the book from which it was torn is one issued some years ago by the bank. It appears, further, that another doctor besides myself has similarly been defrauded recently. The man is of medium height, dark, heavily jowled, and wearing a short moustache. He gave the name of "J. Howard Stewart" and his age as 38 and 9 months, but he may use other aliases.

I am, Sir, yours faithfully,
MACLEOD YEARSLEY.

Queen Anne-street, W., June 30th, 1914.

THE NIGHTINGALE FUND: PROPOSED NEW SCHEME OF SCHOLARSHIPS FOR NURSES.

THE Nightingale Fund owes its origin to the recognition by the nation of the work done by Miss Nightingale in the Crimea. The sum offered to her she applied in various ways for the improvement of nursing, and particularly in founding the school for the training of nurses. This school was connected with St. Thomas's Hospital, where it still remains, and has served as the model for the numerous training schools which now exist both here and abroad. The fund is administered by a council acting under a trust deed drawn up in the lifetime of Miss Nightingale herself, and was applied at its inception to pioneer work in nurse training, and the council is strongly impressed with the belief that this object should remain as one of its guiding principles to-day. The pattern set by Miss Nightingale in 1860 has been widely followed, and in the ordinary training of nurses no more pioneer work remains to be done. The council has therefore been considering whether there be not something yet lacking in nurse training in which their fund could enable them once more to lead the way.

It is from the ranks of trained nurses that must be drawn those who are called to fill the higher posts in the profession—matrons, superintendents, inspectors, and the like; and while the demand for these grows ever with the growth of the movement, it becomes increasingly difficult to find a due supply of fit and proper persons to fill such posts. Many women to-day are admirable nurses, but their training has not reached beyond nursing; for filling the higher posts a wider knowledge of administration and social work is needed, which the existing training schools do not give. Nor are they to be blamed for the omission; so multifarious have the items become which now go to the training of a nurse, that they have no time for it. It is this further and fuller training that the Nightingale council now propose to offer in the form of scholarships to be called Nightingale scholarships. The scheme is not yet fully matured, but its outline is briefly this: the council will offer every year a limited number of scholarships to nurses who have obtained a certificate after three years' training in some recognised school. These scholarships will entitle the holders to a year's training at the Household and Social Science Department of King's College for Women in the University of London. This department, which will be carried on in the new buildings now in course of erection on Campden Hill, has specially applied itself to the teaching required. Its specially fitted laboratories are in close proximity to the experimental kitchen and laundry which form a portion of the hostel where the practical arts are taught. The college has met the council in every way in the preparation of a suitable course, so conceived as to embrace both theory and practice. Every endeavour will be made to keep in view the object of the course—namely, to equip trained nurses to undertake the responsible positions they are likely to be called on to fill. The subjects chosen will, to this end, be dealt with largely from the practical point of view; and, as experience adds to knowledge, this, the first scheme, will no doubt be modified later, both by omission and addition. It is also intended to ensure the elasticity of the scheme by introducing the principle of alternative subjects, so that a scholar shall be able to select such courses as shall seem most likely to help in the ambitions she may have placed before herself. The value of the scholarships will be adjusted to meet the tuition fees, to provide maintenance during the year, and to compensate in some degree for the salary the year's training will oblige the scholar to forego. The new buildings of the college include a hostel in which scholars would be able to reside should they so wish. The scheme is experimental, and its continuance must depend upon its success; we cannot but think that the want of such higher practical training is a real one, and nurses will gladly avail themselves of the new opportunities. Its very tentativeness should help to its success, for if, as the council believes, the principle be a wise one, its application can be varied with the years until an ideal scheme be evolved.

THE EYESIGHT OF RECRUITS.

To the Editor of THE LANCET.

SIR,—Can any of your readers tell me where I can obtain information on this matter? What I more particularly want to know is the percentage of men who are rejected on account of myopia. I am, Sir, yours faithfully,
J. A. WILSON, M.D. Glasg.

Glasgow, June 29th, 1914.

A HARD CASE.

Dr. S. C. Lawrence, medical officer of health of Edmonton, writes on behalf of a widow in poor circumstances who has to go out to work daily, but unfortunately she has a boy, aged 3 years, who is frequently having severe epileptic fits. This condition compels her either to refuse work or pay a neighbour 4*s.* weekly to look after him. This is (either way) a heavy tax on her slender purse, and makes her efforts to support the other children and herself futile. Dr. Lawrence asks for suggestions as to where this boy might be sent to, either free or at a very small charge, which may be addressed to him at the Town-hall, Lower Edmonton, N.

THE STORAGE AND PRESERVATION OF FOOD.

WE have received an inquiry from a reader who, fearing the worst with the *respublica* in the near future, desires to know how he may store up food against a time of famine or want, or of high prices, or when strikes occur which will affect the purchasing power of money. He especially mentions flour, currants, and beans as things which he would like to preserve. The story of ensilage which interested farmers greatly in the "sixties" and "seventies" partly answers the question. It is generally stated that for cattle the idea in its modern form originated in M. Auguste Goffart's book published in France in 1877, translated into English in 1879. In THE LANCET of Jan. 11th, 1862, it is stated that "amongst the novelties in the botanical world I may mention the following, which possibly may be of use to agriculturists:—The *Journal de Fécamp* publishes a letter from M. St. Réquier, a farmer of the neighbourhood, as to the possibility of preserving green fodder for a length of time. He digs a pit in a stiff clay soil, with slanting sides, so as to preserve in form an inverted pyramid; he then cuts his hay, clover, or whatever description of crop he desires to preserve, and causes it to be tightly jammed into the hole and then covered over with soil again. In this way he has preserved fodder for upwards of two months, and states that in rainy years, when only bad hay can be obtained, the plan may be resorted to with considerable saving." We think that in this paragraph "two months" should have read "two years." The question of providing a *cache* for stores of human food is a little different in a country where to hide your food in an igloo snow-house or ice-cave is impossible That artificial refrigeration costs money is the reply to our correspondent's question. The storage of meat is said to be 1*d.* per stone per month. A joint of meat has just been exposed at Smithfield market after having been kept refrigerated for 18 years, and apparently it is still good enough for human food. At the beginning of this year a family at the mouth of the Thames shared the remains of a wedding cake 50 years old. We have also heard of the mummy wheat of the time of the Pharaohs, used as seed, but all these pale into insignificance at the memory of somebody cutting and eating a steak from a mammoth whose age was computed to be tens of thousands of years of preservation in the solid ice. Tinning food is the modern method of preserving it, and we do not know the greatest age of any tinned food which has been considered wholesome enough for food, but as we stated in an annotation in The Lancet of Feb. 25th, 1911, on canned goods and the public health, it has been shown that the quantity of tin dissolved increases with the age of the goods, because the acid juices continue to act upon the metal, but with other substances it might be possible to avoid or postpone this contamination. Some retailers say that certain foods improve by prolonged keeping—e.g., sardines. There is no doubt that in the packing and preserving of fruit some colonists could give us a few hints. The following are a few of the things employed: tissue paper or wood shavings, cotton- or wood-wool, dry moss, cork dust and muslin, charcoal, and ice. The colonial authorities have provided extensive cold storage stores on shore, and the shipping companies have done a good deal by providing refrigerating chambers of special construction, although all these precautions are more or less nullified unless the colonist packs dry and well-chosen goods. Every housewife knows how difficult it is to keep the mould from the cheese, from the bread in the pan, and from the bottled pickles, fruits, and jams. Freezing or chilling is the sheet-anchor of food preservation nowadays, and millions of pounds' worth of frozen meat, rabbits, hares, and fish are transported, and salting or smoking is resorted to with meats and sun-drying or the artificial exhaustion of moisture with fruits; but it is known that in prolonged storage these things will often lose weight and engender a condition of staleness. The difficulty of keeping food arises from the fact that where the food is there will the living things be gathered together to feed on it, and the farmer and colonist have a continual fight at great expense against the fruit flies, flesh flies, devastating insects of all kinds and fungi and blights of extraordinary pertinacity in order even to be able to get the produce as far as our tables, and when we have got it there we in our turn find the fight continued to preserve it. Evidently food is not meant to be kept for any great length of time, at all events only for winter storage.

P. H.—When thallium pomade is used there is always the risk of absorption, though this occurs only very rarely. The effect of absorption might show itself either by a general depilatory action or by effect on the general system.

Communications not noticed in our present issue will receive attention in our next.

METEOROLOGICAL READINGS.

(*Taken daily at 8.30 a.m. by Steward's Instruments.*)

The Lancet Office, July 1st, 1914.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
June 25	30·27	W.	...	121	75	56	58	60	Cloudy
„ 26	30·37	N.E.	...	118	74	54	57	62	Fine
„ 27	30·27	S.E.	...	121	79	56	58	63	Fine
„ 28	30·36	W.	...	125	80	59	62	67	Fine
„ 29	30·23	N.W.	...	127	83	60	65	70	Fine
„ 30	30·13	S.W.	...	131	87	66	66	75	Fine
July 1	29·89	S.E.	...	134	90	68	66	75	Fine

The following magazines, journals, &c., have been received:—Canadian Medical Assooiation Journal, Annales Paulistas de Medicina e Cirurgia, Interstate Medical Journal, Indian Medical Gazette, Journal of State Medicine, Archives of Internal Medicine, Klinic für Psychische und Nervöse Krankheiten, Mercy and Truth, Archiv für Schiffs- und Tropen-Hygiene, Journal of Nervous and Mental Diseases, South African Medical Record, Journal of the Royal Sanitary Institute, Ophthalmoscope, American Journal of Orthopedic Surgery, Therapeutic Gazette, &c.

Medical Diary for the ensuing Week.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

Monday.—4 p.m., Dr. G. Little: Clinique (Skin). 5.15 p.m., Lecture:—Mr. L. Mummery: Chronic Obstruction of the Large Bowel.

Tuesday.—4 p.m., Dr. G. Rankin: Clinique (Medical). 5.15 p.m., Lecture:—Mr. J. W. T. Walker: Urinary Antiseptics.

Wednesday.—4 p.m., Mr. P. P. Cole: Clinique (Surgical). 5.15 p.m., Lecture:—Dr. A. Wylie: The Diagnosis and Treatment of Tubercular, Syphilitic, and Malignant Disease of the Larynx.

Thursday.—4 p.m., Dr. W. H. Willcox: Clinique (Medical). 5.15 p.m., Lecture:—Dr. A. F. Tredgold: Mental Deficiency Act.

Friday.—4 p.m., Dr. H. W. Lyle: Clinique (Ear, Nose, and Throat).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

Monday.—10 a.m., Dr. Simson: Diseases of Women. 10.30 a.m., Medical Registrar: Demonstration of Cases in Wards. 12 noon, Dr. Bernstein: Pathological Demonstration. 2 p.m., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Dr. Pritchard: Bacterial Therapy Department. Mr. B. Harman and Mr. Gibb: Diseases of the Eye. 5 p.m., Lecture:—Mr. Addison: Tumours and Diseases of Bone.

Tuesday.—10 a.m., Dr. Robinson: Gynæcological Operations. Dr. Owen: Demonstration of Cases in Wards. 12 noon, Mr. T. Gray: Demonstration of Fractures, &c. 2 p.m., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin. 5 p.m., Clinical Lecture:—Dr. Davis: Diseases of the Throat.

Wednesday.—10 a.m., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 11 a.m., Mr. Souttar: Demonstration of Minor Operations. 12 noon, Lecture:—Mr. Souttar: Abdominal Diagnosis. 2 p.m., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations. Dr. Simson: Diseases of Women. Mr. Gibb: Diseases of the Eye. 5 p.m., Lecture:—Mr. Addison: Tumours and Diseases of Bone.

Thursday.—9 a.m., Dr. Bernstein: Bacterial Therapy Department. 10.30 a.m., Dr. Simson: Gynæcological Demonstration. 12 noon, Lecture:—Dr. G. Stewart: Neurological Cases. 2 p.m., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Mr. B. Harman: Diseases of the Eye. 5 p.m., Lecture:—Mr. Addison: Tumours and Diseases of Bone.

Friday.—10 a.m., Dr. Robinson: Gynæcological Operations. 10.30 a.m., Surgical Registrar: Demonstration of Cases in Wards. 12.15 p.m., Lecture:—Dr. Bernstein: Applied Pathology. 2 p.m., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin. 5 p.m., Clinical Lecture:—Dr. Davis: Diseases of the Nose.

Saturday.—10 a.m., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Operations of the Eye. 12 noon, Lecture:—Mr. Souttar: Surgical Anatomy of the Abdomen. 2 p.m., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations.

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnonght Hospital, Greenwich.

Monday.—Out-patient Demonstrations:—10 a.m. Dr. H. B. Carlill: Medical. Mr. H. Curtis: Surgical. 12 noon, Mr. G. N. Biggs: Throat, Nose, and Ear.——2.15 p.m., Mr. W. Turner: Surgery. 3 p.m., Mr. W. Turner: Operations. 3.15 p.m., Sir Dyce Duckworth: Medicine. 4.15 p.m., Mr. R. Lake: Throat, Nose, and Ear.

Tuesday.—Out-patient Demonstrations:—10 a.m., Dr. C. E. Zundel: Medical. Mr. Cole: Surgical. 12 noon, Dr. H. MacCormac: Skin.——2 p.m., Mr. L. McGavin: Operations. 2.15 p.m., Mr. R. Carling: Surgery. 3.15 p.m., Dr. G. Rankin: Medicine. 4.15 p.m., Sir Malcolm Morris: Skin.

Wednesday.—Out-patient Demonstrations: 10 a.m., Dr. H. B. Carlill: Medical. Mr. Cecil Rowntree: Surgical. 11 a.m., Mr. R. E. Bickerton: Eye.——2 p.m., Mr. L. V. Cargill or Mr. Choyce: Operations. 2.15 p.m., Dr. F. Taylor: Medicine. 3.15 p.m., Mr. Cargill: Eye Clinique. 4.30 p.m., Mr. C. C. Choyce: Surgery.

Thursday.—Out-patient Demonstrations:—10 a.m., Dr. H. R. Prentice: Medical. Mr. H. Curtis: Surgical. 12 noon, Mr. G. N. Biggs: Throat, Nose, and Ear.——2 p.m., Mr. R. Carling or Mr. W. Turner: Operations. Dr. A. Davies: Pathological Demonstration. 3.15 p.m., Dr. R. Wells: Medicine.

Friday.—Out-patient Demonstrations;—10 a.m., Dr. C. E. Zundel: Medical. Mr. Cole: Surgical. 12 noon, Dr. H. MacCormac: Skin.——2 p.m., Mr. L. McGavin: Operations. 2.15 p.m., Sir John Rose Bradford; Medicine. 3.15 p.m., Mr. L. McGavin: Surgery.

Saturday.—Out-patient Demonstrations: 10 a.m., Dr. H. R. Prentice: Medical. Mr. Cecil Rowntree: Surgical. 11 a.m., Mr. R. E. Bickerton: Eye.——10 a.m., Col. Barry: Radiography.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

Monday.—Clinics:—10.30 a.m., Surgical Out-patient (Mr. E. Gillespie). 2.30 p.m., Medical Out-patient (Dr. T. R. Whipham); Gynæcological (Dr. Banister). 3 p.m., Medical In-patients (Dr. R. M. Leslie).

Tuesday.—2.30 p.m., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. Howell Evans); Nose, Throat, and Ear (Mr. H. D. Gillies). X Ray and Electrical Methods (Dr. Metcalfe). 3.30 p.m., Medical In-patient (Dr. A. J. Whiting).

Wednesday.—Clinics:—2 p.m., Throat Operations (Mr. Gillies). 2.30 p.m., Children's Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. Dorell).

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson); X Rays and Electrical Methods (Dr. Metcalfe).

FRIDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld): Surgical (Mr. E. Gillespie); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. G. P. Chappel).

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, Medical School, City-road, E.C.

MONDAY.—1.30 P.M., Department for the Prevention of Consumption. 2 P.M., Cardiac Department, Dr. Stott; Out-patient Department, Dr. Phear, Dr. S. Thompson. 3 P.M., Wards, Dr. Phear.

TUESDAY.—9 A.M., Laryngological Department, Mr. Mant. 1.30 P.M., Department for the Prevention of Consumption. 2 P.M., Out-patient Department, Dr. M. Leslie, Dr. B. King; Operations, Mr. A. Evans. 3 P.M., Wards, Dr. White. 4 P.M., Wards, Dr. M. Leslie.

WEDNESDAY.—2 P.M., Wards, Dr. A. Davies; Out-patient Department, Dr. Drysdale, Dr. Keilie. 4 P.M., Wards, Dr. Drysdale. 4.30 P.M., Roentgen Ray Department, Dr. Jordan.

THURSDAY.—9.30 A.M., Dental Department, Mr. G. Thomson. 10 A.M., Cardiac Department, Dr. Stott. 1.30 P.M., Department for the Prevention of Consumption. 2 P.M., Out-patient Department, Dr. Phear, Dr. S. Thompson. 4.30 P.M. Laryngological Department, Mr. Mant.

FRIDAY.—1.30 P.M., Department for the Prevention of Consumption. 2 P.M., Wards, Dr. Calvert; Out-patient Department, Dr. M. Leslie, Dr. B. King.

SATURDAY.—10 A.M., Out-patient Department, Dr. Drysdale, Dr. Keilie. 11.30 A.M., Roentgen Ray Department, Dr. Jordan.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.

WEDNESDAY.—4.30 P.M., Dr. Miller: The Morbid Anatomy of Tuberculous Lesions in Relation to Morbid Physical Signs.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.

Course of Demonstrations for Post-Graduates:—

WEDNESDAY.—4 P.M., Dr. W. A. Chaplin; Demonstration of Cases in the Wards.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.

TUESDAY.—3.30 P.M., Clinical Lectnre:—Dr. H. Howell: Facial Neuralgia and its Treatment.

FRIDAY.—3.30 P.M., Clinical Lecture:—Dr. H. Howell: Recent Methods of Treatment of Parasyphilitic Disease.

CENTRAL LONDON THROAT. NOSE, AND EAR HOSPITAL, Gray's Inn-road, W.C.

TUESDAY AND FRIDAY.—3 P.M., Mr. Stuart-Low: Diseases of the Ear.

THE THROAT HOSPITAL, Golden-square, W.

MONDAY.—5.15 P.M., Special Demonstration of Selected Cases.

THURSDAY.—5.15 P.M., Clinical Lecture.

MANCHESTER HOSPITALS POST-GRADUATE CLINICS.

TUESDAY.—MANCHESTER AND SALFORD HOSPITAL FOR SKIN DISEASES, Quay-street.—4.30 P.M., Dr. W. Dyson: Tuberculosis of the Skin (II.).

WEDNESDAY.—ROYAL INFIRMARY—4.30 P.M., Mr. Ray: Tumours of the Inguinal and Scrotal Regions.

THURSDAY.—ANCOATS HOSPITAL—4.30 P.M., Mr. Platt: Infantile Paralysis.

For further particulars of the above Lectures, &c., see Advertisement Pages.

A DIARY OF CONGRESSES.

WE shall publish this diary from time to time that our readers may have under their hands the dates of the approaching scientific Congresses. It is unnecessary to issue the lists of all these functions week by week, and we propose to make only such gatherings as will occur in the immediate future the subject of regular announcement. The following Congresses, Conferences, and Exhibitions are announced:—

May 1st–Nov. 1st (Lyons).—International Town Hygiene Exhibition.
" 15th–Oct. 15th (Berne).—Swiss National Exhibition.
May–October (London, Shepherd's Bush).—Anglo-American Exposition.
June 24th–July 9th (London, Royal Agricultural Hall).—Fourth International Rubber and Allied Industries Exhibition.
June–July (Groningen).—University of Groningen 300th Anniversary Celebration.
July 6th–11th (Blackpool).—Twenty-ninth Congress of the Royal Sanitary Institute.
" 7th and 8th (Leeds).—Sixth Annual Conference of the National Association for the Prevention of Consumption, &c.
" 7th–10th (St. John, N.B.).—Canadian Medical Association.
" 8th–10th (Oxford).—Ophthalmological Congress.
" 15th–20th (Edinburgh).—Congress of the Royal Institute of Public Health.
" 21st–23rd (Chester).—British Pharmaceutical Conference.
" 27th–31st (London).—Fifth Annual Session of the Clinical Congress of Surgeons of North America.
" 28th–31st (Aberdeen).—Eighty-second Annual Meeting of the British Medical Association.

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R.—Royal Commission on Venereal Diseases, Lond., Secretary of; Messrs. J. D. Riedel Co., Lond.; Messrs. Roberts and Co., Lond.; Mr. Frank Richards, Vancouver; Mr. P. B. Roth, Lond.; Royal Schools for the Deaf and Dumb, Manchester, Superintendent of; Royal Medical Benevolent Fund, Lond., Secretary of; Royal Institution of Great Britain, Lond.; Research Defence Society, Lond., Hon. Secretary of: Dr. Athole Ross, Lond.; Royal Waterloo Hospital, Lond., Secretary of; Royal Portsmouth Hospital, Secretary of; Royal Infirmary, Manchester, Secretary of; Rochdale Infirmary, Secretary of; Miss H. Rider, Wellingborough; Mr. William Russell, Lond.

S.—Messrs. Spiers and Pond, Lond.; Dr. F. M. Sandwith, Lond.; The Sanatorium, Mundesley, Secretary of; St. Mary's (Islington) Infirmary, Lond., Medical Superintendent of; Messrs. Sansom Brothers, Mansfield; Messrs. G. Street and Co., Lond.; Mr. S. Stephenson, Lond.; Stockport Infirmary, Secretary of; Sheffield Royal Infirmary, Secretary of; South Devon and East Cornwall Hospital, Plymouth, Secretary of; Southend Waterworks Co., Secretary of; Salford Corporation, Clerk to the; St. Andrew's Hospital, Northampton, Clerk to the; Sheffield, School Medical Officer of; Professor W. Stirling, Manchester; Stretford, Medical Officer of Health of; Dr. W. C. Sullivan, Retford; Society of Members of the Royal College of Surgeons of England, Lond.; Surrey County Council, Kingston-on-Thames, Clerk to; St. Mary's Hospital for Women and Children, Secretary of; Sheffield Children's Hospital, Secretary of; Sunderland Royal Infirmary, Secretary of; Somerset County Council, Weston-super-Mare, Secretary of; Order of the Hospital of St. John of Jerusalem In England, Lond., Secretary-General of; Dr. J. Schwalbe, Berlin; St. George's Hospital Medical School, Lond., Dean of; Society of Apothecaries of London, Clerk to; Dr. J. Pollock Simpson, Lond.; Dr. Halliday Sutherland, Lond.; Mr. Sydney Stephenson, Lond.

T.—Dr. J. C. Thresh, Chelmsford; *The Times*, Lond.: Mr. C. Taylor, Retford; Mr. W. S. Tietjen, Lond.; Messrs. Tindall and Jarrold, Chelmsford.

U.—University, Sheffield, Registrar of; University, Leeds, Secretary of; University College, Provost of; University ot Durham College of Medicine, Newcastle-on-Tyne, Secretary of Examinations of.

V.—Messrs. J. W. Vickers and Co., Lond.

W.—Dr. S. A. K. Wilson, Lond.; Mr. E. H. Worth. Lond.; Messrs. Widenmann, Broicher, and Co., Lond.; West London Medico-Chirurgical Society, Hon. Secretaries of; Mr. Harford Willson Blackpool; Fleet-Surgeon Ward, R.N., Chatham; Messrs. J. Woodhead and Sons, Huddersfield; Mr. E. S. Weymouth, Lond.; Messrs. J. Williams and Son, Bradford; West Norfolk and Lynn Hospital, Kings Lynn, Secretary of.

Y.—Mr. Macleod Yearsley, Lond.

Z.—Dr. C. E. Zundel, Lond.

Letters, each with enclosure are also acknowledged from—

A.—Dr. J. Adams, Eastbourne; Ancoats Hospital, Manchester, Secretary of; Alliance Bank of Simla, Lahore; Dr. G. Athanasian, Ismid; Mr. E. Arnold, Lond.; Mr. G. H. Adam, West Malling; Apollinaris Co., Lond.

B.—Mr. W. Bryce, Edinburgh; Mr. G. Sherman Bigg, Lond.; Dr. R. Brewitt-Taylor, Lond.; Berkshire Education Committee, Reading, Treasurer to the; Messrs. F. P. Baker and Co., Lond.; *Birmingham Daily Post*, Manager of; Mr. A. Boulton, Horncastle.

C.—Dr. J. Cates, St. Helens; Messrs. G. Christy and Co., Lond.; Mr. A. H. Croucher, Eastbourne; Dr. B. J. Courtney, Castletown; Central London Throat and Ear Hospital, Secretary of; Messrs. J. and A. Carter, Lond.; Miss Craven, Southport.

D.—Messrs. W. Dawson and Sons, Lond.; Durham County Council, Education Committee, Accountant to the: Derbyshire Education Committee, Accountant to the; Derby Borough Asylum, Rowditch, Clerk to the; Derby County Council, Accountant to the; Dr. H. K. Dawson, Ashstead; Dr. J. H. Davies, Port Talbot.

E.—Express Publicity Co., Lond.; Messrs. England and Co., Hull; Egptian Government, Cairo, Director of Accounts; E. B.

F.—Mr. H. D. Field. Norbury; Dr. R. Felix, Rose Hill.

G.—Dr. C. D. Green, Romford; Dr. A. S. Gubb, Aix-les-Bains; Dr. S. Gill, Formby.

H.—Mr. J. T. Hosford, Lond.; Dr. C. G. Havell, Felixstowe; Dr. W. C. Hayward, Port Said; Hunts County Council, Huntingdon, Clerk to the; H. M. S.; Mr. R. W. Hewson, Stafford; Mr. H. F. Hyde, Worthing; Messrs. Heenan and Froude, Manchester; Dr. W. M. Harman, Winchester; Messrs. T. J. Hewlett and Son, Lond.

J.—Jenny Lind Infirmary, Norwich, Hon. Secretary of; Dr. R. Jackson, St. Helens; J. A. H.

K.—Messrs. C. Knight and Co., Lond.; Captain H. C. Keates, I.M.S., Multan; Dr. J. H. Kellogg, Battle Creek; Mr. C. W. Kay, Lymington; Messrs. Knoll and Co., Lond.

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M.—Mr. S. McMahon, St. Colomb; Major R. McCarrison, Kasauli; Dr. D. McCarrol, Norwich; Dr. G. Michael, Beni Suef; Manchester Corporation, Treasurer to the; M. C. W.; Mr. S. Mozumder, Worthen; Mrs. Maude, Hampton Court.

N.—Northampton General Hospital, Librarian of.

P.—Mr. E. T. Perkins, Lond.; Pudukkottai, India, Chief Medical Officer of; Mrs. Page, Lond.; Portsmouth Lunatic Asylum, Clerk to the; Philmar Co., St. Louis; Dr. J. H. Pringle, Glasgow; Messrs. C. Pool and Co., Lond.

R.—Messrs. G. Robertson and Co., Lond.: Dr. C. Russ, Lond.; Mr. W. Graham Reynolds, Lond.; Messrs. Robertson and Scott, Edinburgh.

S.—Dr. S. Samuel, Leeds; Swansea Education Committee, Clerk to the; Saarbach's News Exchange, Mainz; *South Wales Argus*, Newport, Manager of: Sunderland Borough Asylum, Ryhope, Clerk to the; Saccharin Corporation, Lond.; Messrs. Smith and Son, York; Scholastic, Clerical, and Medical Association, Lond.. Secretary of; Messrs. Smith and Son, Lond.

T.—Mr. A. H. Turner, Golborne; Dr. T.; Mr. H. Tilley, Lond.

V.—Messrs. Van Houten, Lond.

W.—Dr. A. Waring, Nottingham; Messrs. Wyllie and Son, Aberdeen; Dr. E. Walker, Westray; Messrs. F. Williams and Co., Lond.; W. H. B.

Z.—Dr. L. V. Znaniecki, Strassburg.

A Lecture

ON

THE CAUSES OF INSANITY.[1]

By F. W. MOTT, M.D. Lond., LL.D. Edin., F.R.S.,

PATHOLOGIST TO THE LONDON COUNTY ASYLUMS.

Mr. President and Gentlemen,—The increase of insanity and feeblemindedness is a matter deeply concerning the race and its future, and a most disturbing factor in the minds of the ratepayers; and can it be wondered at when we consider that last year alone (1913) the total cost of maintenance of London pauper lunatics under the control of the London County Council amounted to over three-quarters of a million (£755,198). This does not include the cost incurred by the Metropolitan Asylums Board for the housing and maintenance of imbeciles, idiots, and incurable cases of insanity, which would raise the annual expenditure to at least a million. Soon to this sum will have to be added a fresh charge for the life segregation of mental defectives—a very necessary procedure which from the ratepaying, as well as from a eugenic, point of view will well repay the outlay.

The first duty of the State is to prevent disease; failing that, to cure disease; and failing that, to prolong life and to relieve suffering. Have the representatives of the ratepayers in the past fulfilled this maxim, or have they not rather begun at the wrong end and spent huge sums of money to prolong the lives of the derelicts of humanity in unnecessarily costly buildings? Asylums have been built at a cost of £300–£500 per bed, and it may well be asked whether the money might not have been more advantageously spent on "brains instead of bricks." We want to educate the public conscience to the value of scientific research, for we cannot hope to prevent or cure insanity or feeblemindedness until we know the causes underlying the diseases of the mind and mental deficiency.

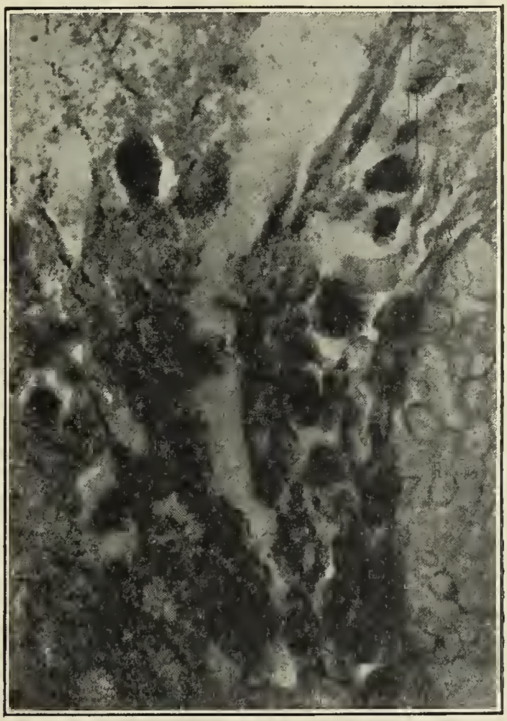
Syphilis and Mental and Nervous Disease.

The history of the progress of medical science demonstrates the fact that the application of the biological, physical, and chemical sciences to the study of the causes of disease has led to discoveries by means of which prevention and successful treatment have resulted. When I was appointed pathologist to the London County Asylums syphilis as a cause of mental disease was not mentioned in the reports. My hospital experience had taught me that it was by far the most important cause of organic disease of the nervous system; and this led me to make researches in this subject in respect to asylum patients. In a few years by dint of constant research, especially by the study of numbers of cases of the juvenile forms of general paralysis of the insane in the subjects of congenital syphilis, I came to the conclusion that syphilis is the essential cause of this terrible malady, and that if there were no syphilis there would be no general paralysis or tabes. This premise has been proved by the fact that in every case of general paralysis the cerebro-spinal fluid gives a positive reaction, and in 75 per cent. of the cases of tabes. The other 25 per cent. in which it is not present is not a proof that it never had been present. The discrepancy in the percentages between the two diseases can be explained by the fact that tabes is a very slow process of destruction, and for reasons which I have indicated in my report to the Neurological Section of the International Congress of Medicine and therefore need not go into here, the poison of the spirochætal activity may not necessarily be formed in the nervous system.

Spirochætes in Brains of General Paralytics.

Since the discovery of Noguchi and Moore of spirochætes in 12 out of 70 brains of general paralytics, confirmed by myself and many other observers, any doubt as to syphilis being the essential cause has been dispelled. In fact, in a series of 100 brains of persons dying from this disease I have found the spirochæte in 66, in some cases more numerous than in the primary sore. According to my experience they are more numerous and found with greater ease in cases dying soon after admission. They exist in scattered foci all over the grey matter of the cortex, but especially can they be found in those regions where the earliest signs of adhesions of the membranes occur—namely, the frontal lobes. The colonies are perhaps not more than a millimetre to a few millimetres in size, and when they exist the grey matter has a softer consistence and a pinkish appearance. Microscopically there is more evidence in the neighbourhood of the spirochætal colonies of inflammatory reaction, and one sees the perivascular sheaths filled with lymphocytes and plasma cells. Sometimes the spirochætes may be found surrounding the perivascular spaces in great numbers, as this photomicrograph shows. (Fig. 1.)

Fig. 1.



Section of cortex of a patient dead of general paralysis, stained by a modified Levaditi method. A portion of the lumen of a small vessel is seen filled with blood corpuscles. Around is the inflamed lymphatic sheath filled with lymphocytes and plasma cells. In this are seen several spirochætes (indistinct). Outside this is a clear space which is an artifact produced by the brain separating from the sheath of the vessel. In the brain substance are seen great numbers of spirochætes stained black. (Magnified 1400 times.)

It is very easy to demonstrate the presence of the spirochætes by taking a little of the grey matter, rubbing it up in a mortar with salt solution, and examining the emulsion with the dark-ground microscope. If the preparation is made from a brain obtained soon after death the organisms can be seen moving. They differ in no way morphologically from the spirochætes obtained from the primary sore or from a congenital syphilitic organ. By Neisser-Pollak puncture method Förster and Tomaczewski have obtained living spirochætes in the small cylinder of brain removed during life in 40 per cent. of 60 cases. If we had time to search there is no doubt spirochætes could be found in every case; for we know that the cerebro-spinal fluid in practically every case of general paralysis gives a positive Wassermann reaction.

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[1] Being the Cavendish Lecture delivered before the West London Medico-Chirurgical Society on June 19th, 1914.

Lesions and Remissions in General Paralysis.

There is reason to believe that the spirochæte enters the central nervous system when generalisation takes place in the secondary period, and it remains latent for a number of years; it then takes on active multiplication with production of toxins resulting in an encephalitis with mental and motor phenomena of irritation. But this encephalitis is accompanied by a neural destruction and a degree of dementia and paresis proportional to the neuronic destruction. We know that then the patient may remain more or less demented a number of years until a recurrence occurs, due no doubt to a fresh development of the parasites, or he may die from some intercurrent disease. Sometimes, however, after an attack of acute mental and motor irritation phenomena, or a loss of consciousness, the patient makes an apparent recovery (without any specific treatment) and is discharged from the asylum, only to return again on account of a recurrence of symptoms. We must suppose that nature itself has arrested the multiplication of the specific organisms by the production of spirillocidal antibodies.

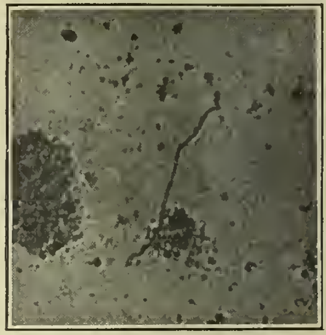
What, then, has caused the recurrence? Either the organism has survived as an extra- or intracellular resistive spore, or the explanation of Ehrlich may be the correct one—viz., some few of the spirochætes are resistive to that particular antibody and remain undestroyed, awaiting a favourable moment of a lowered resistance of the tissues to start multiplying. (Fig. 2.) Owing to the extreme minuteness of this organism it is very difficult to investigate the question of spore formation. An immense number of granules may be seen in the brain and in the proliferative cells of the inflamed perivascular sheaths; these may be spores, but I am inclined to think they are granules shed by the spirochætes which are undergoing plasmolysis. Occasionally, however, I have seen in sections and films spirochætes stretched out with granules in their interior (*vide* Fig. 2).

If these cases with remissions had been treated by any of the numerous spirillocidal methods of intravenous or intrathecal injections of arsenobenzol compounds they would have been claimed as therapeutic cures. Candidly I do not think any marked success has attended any of the methods of treatment so far employed. Indeed, several cases in which I found enormous numbers of spirochætes in the brain had been treated with large doses of salvarsan prior to admission to the asylum. We must then rather look to the prevention of the spread of syphilis and its early diagnosis and treatment by modern methods as the most hopeful way of combating this terrible malady.

Incidence of General Paralysis.

Of the total admissions to the asylums of the County of London every year about 10 per cent. are general paralytics; more than 15 per cent. of the male admissions are general paralytics, and these are recruited from men of all social grades who, prior to the onset of the disease, for the most part were efficient and productive social units of civic worth and capacity. True, the females are largely recruited from the unfortunate class of women, many of whom are mental defectives. Many of the women so affected have been driven to prostitution by seduction, desertion, and destitution, but by no means all female paralytics are immoral women, for a good number are the innocent wives of men by whom they have been infected and who are unaware of the real cause of the disease. Moreover, the histories of the families of paralytics show that not infrequently they have transmitted syphilis to their offspring. Incidentally I may remark that of the 60 juvenile paralytics I have collected in 20 per cent. one of the parents, usually the father, was a paralytic.

FIG. 2.



Film of brain emulsion stained by Fontana method, showing spirochæte which has lost its coils and is filled with granules. (Magnified 1400 times.)

I have made an inquiry regarding the incidence of general paralysis in the two sexes in London parishes,[2] and I have found that the females are relatively more numerous in the poorer East-end parishes, and there is a correlation between female paralysis and degraded poverty. Now it is interesting to note that the higher you rise in the social scale the less often do you meet with general paralysis in the female sex. This is not the case with the male sex. In the juvenile form, where the chances of syphilitic infection are equal, the sexes are equally affected. The incidence of general paralysis in a population is a measure of the incidence of syphilis.

In connexion with the different class of female to male affected by this disease and the large number of female general paralytics who are prostitutes, I may mention that these facts may be correlated with observations I made some years ago on the convolutional pattern of the brains of male and female paralytics; for I was struck by the fact that, as a rule, the male paralytic generally possessed a well-convoluted brain of above the average, whereas the female paralytic possessed very frequently a small brain of simple convolutional pattern indicative of an imbecile.

Economic Considerations.

If it were not for the fact that there is no accumulation of general paralytics in the asylums, as the death-rate equals the admission-rate, the cost of maintenance from this disease alone would be enormous. But it must be remembered that many cases of organic dementia, imbecility, idiocy, epilepsy, and brain-softening are due to syphilis. Moreover, it is the most potent cause of nervous disease—e.g., tabes is always syphilitic, hemiplegia, paraplegia, and likewise aphasia are very often due to syphilis; and the sufferers with these diseases do not die in a short time, as is the case in general paralysis, but have to be maintained for numbers of years in asylums, infirmaries, and institutes for incurables. Numbers of other incapacitating diseases due to syphilis might be mentioned—e.g., aneurysm and aortic disease.

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[2] THE LANCET, Nov. 15th, 1913, p. 1374.

As an asset to the nation the value of each individual depends upon the amount of physical and mental work he or she can produce, and the capacity for breeding and rearing healthy children. Now venereal disease, especially syphilis, although in the majority of instances, from its direct effects, it does not prevent a man or woman working, by making them bedridden, nevertheless by direct or indirect effects on the vital organs it diminishes considerably the efficiency and length of productive usefulness of the individual; and in at least 15 per cent. of persons affected by syphilis causes, when no treatment or insufficient treatment is adopted, fatal incapacitating diseases which render the individual prior to death a monetary burden to the State for a number of years, not to mention the great infant mortality and mental and physical disabilities in the offspring that survive. From an economic and productive point of view the State and municipal authorities could save in the end enormous sums of money by a wise expenditure in preventing the spread of this disease and by promoting cure in the early stages, thereby preventing generalisation in the blood and lymph streams and infection of the central nervous system. Those of my readers who are interested in the subject of general paralysis of the insane in the light of recent research I would refer to my article on the Nature of the Condition termed Parasyphilis.[3]

The Anatomical Substratum of Mind in Relation to Insanity and Idiocy.

When we examine the brain of a general paralytic dement, or a senile dement, or a case of organic dementia from cerebral softening, both naked-eye and microscopic evidence show a destruction of the cerebral cortex—the anatomical substratum of the higher functions of the organ of mind—and proportional to the dementia are the decay and destruction of the nerve cells and fibres. Likewise in idiocy and low grades of imbecility we find a simple convolutional pattern which means a less extensive area of the cerebral cortex; moreover, microscopic examination shows a failure of development of cells and fibres, due in the majority of cases to an inborn germinal deficiency. The dement, whether a paralytic or senile dement, is an individual who was born rich but is now poor in the anatomical basis of mind, whereas the idiot and low-grade imbecile were born poor in the material basis of mind and could never be other than destitute. For I may remind you that at birth the convolutional pattern peculiar to the individual is present, and all the neurones which are to grow and develop and become the storehouse of memory of experiences are there. And it is an interesting fact that just as there is a similarity in the bodily formation and physiognomy of relatives, so there is a similarity in the folds and fissures forming the convolutional pattern of the brain. "Like tends to beget like" in the morphology of the organ of mind.

It is not surprising, therefore, that my observations, based upon a large amount of material and investigations, lead me to form the conclusion that the principal causes of mental deficiency may be summed up in the fact that, as regards the functions of the organ of mind, "like tends to beget like." Although occasionally in a family where mental deficiency is not expected an idiot or an imbecile is born (and in such cases not infrequently we obtain a history of syphilis or alcoholism or both in the parents), mentally defective children, particularly if more than one occurs in a family, are usually the offspring of parents who are imbecile or of low-grade mentality.

Inquiry as to Mental Deficiency and Insanity.

I have instituted an inquiry regarding mental deficiency and insanity. As the subjoined table shows, 2074 insane parents in the London County asylums had 4430 children under 16, 3543 being of school age. Among these there were 50 children in the mentally defective schools. This gives only a percentage of 2·1 of insane parents with mentally defective children, and a percentage of 1·4 children of insane parents of school age who were mentally defective. A considerable, but as yet unascertained, percentage of these children owe their mental deficiency not to a germinal hereditary defect but to congenital, pre-natal, or post-natal causes.

Number of children over school age	355
,, ,, of school age	3543
,, ,, under school age	532
Total number of children	4430
,, ,, parents	2074

Average number of children under 16 years of age to each parent = 2·1.

Number of mental defectives = 50 out of 4430 = 1·1 per cent.

50 mentally defective offspring from 45 insane parents.

Percentage of parents in asylums with mental defectives in special schools = 2·41.

These figures show that mental deficiency is not so closely correlated with insanity of the parents as was suspected; moreover, I may remark that it was not an uncommon thing to learn that the children of an insane parent were unusually bright and intelligent.

Now if we compare the results of this inquiry with the results obtained by an investigation[4] of the pedigrees of 50 mentally defective children from an East-end special school we find that here again there was only one parent insane (2 per cent.), but there were 11 grandparents (22 per cent.). If, however, there was no insanity in the parents the condition of the homes, the low wage-earning capacity of the fathers, and the very few who were in continuous employment, as well as the low standard as a rule reached by the parents in the schools showed mental inefficiency. The prevalence of alcoholism, tuberculosis, and syphilis in numbers of members of the stocks afforded evidence of environmental causes of degeneracy. The number of grandparents affected supports the truth of Morel's doctrine on the intensification of mental deficiency in successive generations, which theory is supported by my statistical results of anticipation or antedating in the case of insanity, which is the tendency to the occurrence of the mental disorder at an earlier age and in a more intense form in successive generations; this will be considered more fully later.

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[3] Archives of Neurology and Psychiatry, vol. vi.

[4] By the kindness of the Hon. Rupert Guinness, who initiated and defrayed the expenses of this inquiry, I am permitted to refer to these facts. A full report of this inquiry will shortly be published.

THE RACE POISONS IN RELATION TO DEGENERACY.

Although mental deficiency is not limited to any social grade, and an idiot or imbecile may even sometimes crop up unexpectedly in a family in which both maternal and paternal stocks are apparently sound, yet as a rule it is the sediment of our large overcrowded cities and the rural districts where feeblemindedness is most to be found. "Birds of a feather flock together," and among the lower inefficient grades of society there will always be a tendency for people of feeble intelligence, weak will-power, slender sagacity, and deficient moral sense to mate and breed. The social environment is necessarily bad and unhygienic; consequently they are very prone to be affected by the race poisons—syphilis, alcohol, and tuberculosis —which tend to an increase of the bodily and mental deficiency in the next generation. In this way it is possible that these race poisons may tend to weed out poor types, but it is also probable that they tend to produce poor types.

It may be a biological heresy, but it is firmly rooted in the minds of practising physicians that a chronic saturation of the blood by the race poisons, specially when operating in successive generations, can *per se* cause degeneracy in healthy stocks by a pathological mutation of the germ plasm. Biologists may assert that one is assuming an acquired character can be inherited, and you must prove that the poison is not acting on the individual by reviving a latent neuropathic taint. I admit the great difficulties attending a proof that would satisfy some eminent authorities, still Galton himself admitted the possibility of continuous saturation of the blood by poisons modifying the germ plasm, and Professor Arthur Thomson in his work on heredity comes to this conclusion.

If we consider the matter from a physiological point of view it may be assumed that a chronic blood poisoning would disturb the biochemical interrelations of all the organs of the body, including the ductless glands and the sexual organs. It cannot be supposed that the continuous disturbance of the normal biochemical dynamics of so complex a mechanism can have no effect, after its operation in successive generations, upon the specific energy of the master tissues, germ cells and brain cells, seeing that they are supplied by the same blood and lymph as the rest of the organs and tissues of the body. My investigations of pedigrees of the insane and the feebleminded certainly support this conclusion. Many pedigree charts of defectives show a drunken mother or father, but particularly the former, with a family of healthy or comparatively healthy firstborn; then as the effects of the poison become intensified the later born children are either dying in infancy or mentally defective. Every effect owns a cause, and it seems as reasonable to attribute degeneracy to specific nutritional deficiency of the germ cells brought about by environmental agencies as to call it spontaneous variation. However, I have two pedigrees (Figs. 3 and 4) which are almost of the nature of an experiment which, so far as is possible, afford proof of my proposition. One relates to a woman who had two husbands, the other to two brothers who married two sisters.

Although higher-grade imbeciles are deficient in intellectual and moral qualities they are not deficient in animal propensities, and they are very fertile. Large families are the rule, but owing to the race poisons, maternal ignorance, and neglect, the infant mortality is proportionally high, so that the average number of surviving children attending the schools only exceeds by a trifle the average number in families in which all the children are in the normal schools.

CAUSES OF PSYCHOSES OR TRUE INSANITY.

Having thus given some consideration to the causes of mental defect and mental diseases with recognisable morphological defects or destruction of the organ of mind (amentia and dementia), I will pass on to the consideration of the causes of the true psychoses or disorders of mind, in which so far no adequate explanation by morphological changes in the brain exists.

The causes of these functional disorders fall into two groups: (1) the toxic, and (2) the degenerative (neuropathic), but, of course, the two conditions are more often than not combined. The toxic causes are (*a*) exogenous, and (*b*) endogenous. The field of inquiry concerning the latter (endogenous) compared with the former (exogenous) is beset with many difficulties, because the source and mode of introduction of poisons from without can be ascertained, whereas the genesis of the endogenous poisons is much more obscure and complicated by the general disturbance of the biochemical harmony of the physiological interrelations of the organs of the body. Indeed, many of the pathological conditions, bodily and mental, which arise from the introduction of poisons into the body, especially when they are taken habitually, are due not only to the poisons introduced from without, but to microbial poisons and the toxic products caused by disorders of alimentation, of metabolism and of inefficiency of elimination of waste products with the installation of a vicious circle.

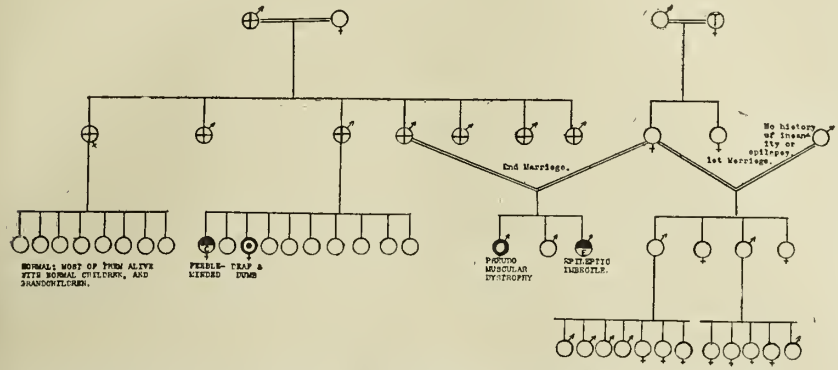
Time does not permit of my dealing fully with the intoxication insanity brought about directly by alcohol and lead acting as principal factors. I may, however, remark that the characteristic true alcoholic psychosis (Korsakow psychosis), and regarded by Kraepelin as chronic delirium tremens, is not a common class of case in our asylums, and I have but seldom found cases in the post-mortem room. Alcoholic insanity is more often transitory and the cases are intercepted in the infirmaries. Although alcoholism plays an important part in the degeneracy of a stock, yet as the sole cause or even the principal cause of a large proportion of *admissions to asylums* I am very sceptical; indeed, I have brought forth a mass of evidence, clinical, pathological, and statistical, to show that a relatively small quantity of alcohol, the quantity which is taken daily by many physicians, magistrates, and pillars of society generally without any apparent harmful effects, is quite sufficient to make a potential lunatic or epileptic antisocial, and thereby necessitates segregation.

Neuropathic Inheritance.

I do not wish to imply that alcohol is not a potent evil to society, for I am in entire agreement with Sullivan's conclusion in his work on "Alcoholism."

"To sum up, then, we find that the extent of the alcoholic evil is represented by a considerable contribution to the amount of suicide; by a share in the causation of crime, which though small in relation to the total mass of delinquency, is of extreme importance by reason of the specially grave character of the offences comprised in it; by a comparatively small part in the causation of insanity; and, lastly, by an indefinite but certainly considerable influence in the production of impaired development which underlies the perverted conduct of the socially unadaptable classes."

FIG. 3.


NORMAL: MOST OF THEM ALIVE WITH NORMAL CHILDREN, AND GRANDCHILDREN.
FEEBLE-MINDED
DEAF & DUMB
2nd Marriage.
1st Marriage.
No history of insanity or epilepsy.
PSEUDO MUSCULAR DYSTROPHY
EPILEPTIC IMBECILE.

This pedigree relates to a woman with two families. By her first husband, with no history of the neuropathic taint in his family, she has healthy children and grandchildren, many of whom are grown up. She then married a man who was a drunkard, one of a family of drunkards; his father was a drunkard. One of his brothers, a drunkard, had ten children, and of these one was deaf and dumb and another an imbecile, otherwise there was nothing in the family indicating a hereditary taint. The offspring of this woman by the second husband were as follows: a boy with pseudo-muscular dystrophy, a normal boy, and a feeble-minded epileptic imbecile. A glance at the pedigree seems undoubtedly to show that the father's germ plasm was accountable for these defects, and drink in successive generations the probable cause.

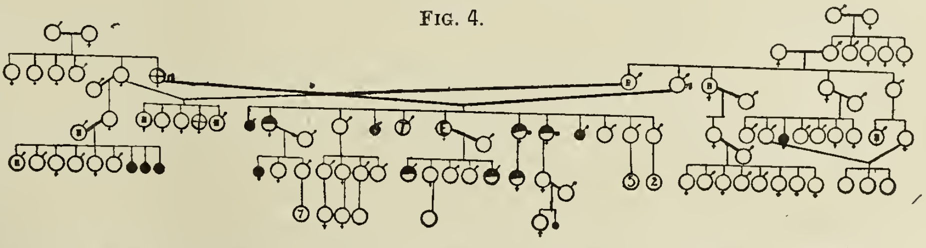
Every practitioner knows of individuals born of sound stocks that no acquired conditions (which are usually assumed to be the cause of insanity) can render permanently insane—for example, head injury, exhaustion from worry and overwork, sexual excesses, emotional shocks, deprivation, destitution, syphilis, alcoholism, microbial infections, auto-intoxications, diseases of disordered metabolism, and toxic conditions arising from inefficient elimination of waste products. Delirium may be the result of many such conditions, and this may persist for some time until the cause is removed; then the patient recovers sooner or later his normal mentality. Should, however, there be a neuropathic inheritance any of these causes, single or combined, may lead to a temporary or even permanent derangement. Indeed, we know that there frequently occur members of a neuropathic stock whose mental equilibrium may be disturbed without the occurrence of any one of these conditions, even without any apparent cause; except it be assumed that there is a disturbance of the normal physiological processes concerned with the functions of reproduction and occurring especially at the critical periods of life—namely, early adolescence and the involutional period, and also in the female during the puerperium, parturition, and lactation.

EVIDENCE OF ANTEDATING.

From these facts it may be deduced that the neuropathic inheritance and disorders of the functions of the sexual glands play a dominant part in the causation of the true insanities. For years past I have been studying the neuropathic inheritance by means of pedigrees made by myself and collaborators, also by means of the card system of a collective investigation of nearly 4000 relatives who are at present in or have been discharged from, or who have died in the London County Asylums, and I have observed that there is, as this graph shows, a marked correlation between the age at onset of insanity and the critical periods of sexual life. In the insane parents of insane offspring you will observe that the maximum is at the involutional period of life, in the offspring it is at the adolescent period, under 25.

This evidence of anticipation by statistical methods was commented upon by Professor Karl Pearson in a letter written to *Nature* on Nov. 12th, 1912, entitled "On an Apparent Fallacy in the Statistical Treatment of Antedating in the Inheritance of Pathological Conditions." He criticises my statistics on mathematical grounds, but I do not regard this as a question of mathematics, but one of observed facts and experience. When Sir George Savage with his vast experience says this accords with his views, and when we find that other distinguished alienists have noted this anticipation it seems to me not the question of biometrics at all. I will quote from a very able French writer: "C'est d'abord l'hérédité vésanique, et l'on a signalé de nombreux exemples montrant que les enfants d'un aliéné non seulement etaient prédisposés à devenir aliénés à leur tour, mais encore entraient souvent

FIG. 4.



This pedigree is of interest in showing the marriage of two brothers with two sisters. In the first instance the male suffered with heart affection, which was transmitted to the offspring. In the second case the female suffered from cirrhosis of the liver and paraplegia, and was probably alcoholic and possibly syphilitic. The result was three insane and one epileptic offspring. From the first insane daughter the issue was probably unaffected; but from the next daughter, who had masked epilepsy, of five children born two were insane. The next two insane daughters each gave birth to an illegitimate child by the same father; one of these children became insane at adolescence, whereas the other has married, and has an apparently healthy child. H denotes heart affection; plain circles, healthy; circles in quadrants, alcoholic; half black circles, insane; small black circles, died in infancy or born dead.

dans la folie à un âge plus jeune que leur père par une sorte d'accumulation."

Now, granting that Professor Pearson's conclusions are right and that my statistics show no antedating, I would remark that numbers of pedigrees which have been taken by myself and independent observers show this tendency in successive generations for the insanity to occur at an earlier age in an insane stock. Professor Pearson in one way does not deny the fact that there is a tendency for an insane stock to be either ended or mended, which is really the practical point which we have to decide, for he says: "In the case of insanity is the man or woman that develops insanity at an earlier age as likely to become a parent who develops it at a later age? I think there is not a doubt as to the answer to be given. Those who become insane before 25, even if they recover, are far less likely to become parents than those who become insane at later ages; many of them, considering the high death-rate of the insane, will die before they can become parents of families." But the objection which Professor Pearson raised does not apply, it seems to me, when a comparison is made between the age at onset of insane offspring of insane parents with all the admissions to the asylums, and a graph can be constructed very similar in many respects to that obtained when the comparison of offspring and parents is made.

HISTOLOGICAL CHANGES IN THE OVARIES IN DEMENTIA PRÆCOX.

Now, it is an interesting fact that in certain types of insanity, especially the primary dementia of adolescence, there occur in quite young females a great diminution of ova, signs of absence of maturation of the ova, and marked fibrosis of the gland. I consider this to be further evidence of "anticipation," by which the children of insane parents are affected at a much earlier age than the parents and in a more intense form. Dr. Laura Forster has been working in the laboratory at Claybury for the past two years on the histology of the ovaries of 100 cases of females suffering from different forms of insanity and dying during the child-bearing period of life. Her observations strongly support the view I have put forward regarding the early involution change of the ovaries in dementia of adolescence.

The observations of Ceni support the conclusion that there is a close functional correlation between the brain and the reproductive organs. He removed one hemisphere from hens; the birds surviving traumatic shock were killed after periods varying from a few months to three years, and their ovaries were subsequently examined histologically. The primary shock had the effect of causing them to cease laying eggs for a few months. In the following year they began to lay again, but in the second year fewer eggs were laid or they ceased altogether from laying. The birds were otherwise healthy. Microscopic investigation of the ovaries showed a premature progressive involution. Ceni infers from these experiments that intimate dynamic relations exist between the brain and the reproductive glands. It is more difficult to show changes in the male sexual organ, and at present an investigation is being made. The masturbation which so frequently occurs may interfere with the results.

PSYCHO-PHYSIOLOGY OF THE SEXUAL GLANDS AND BRAIN.

Now let us regard the question from a psycho-physiological aspect. In the insanity of adolescence are the brain and sexual glands simultaneously functionally disordered, or is the deficiency and disorder of the one the cause of the derangement of the other? It has long been recognised by alienists that the primary dementia of adolescence may arise from an auto-intoxication possibly of sexual origin. In women it coincides with menstrual disorders. The reality of the auto-intoxications is demonstrated by vaso-motor disturbances, febrile attacks, digestive troubles, furred tongue, nausea, and pyrosis, which frequently occur at the period of onset of the attack; but this, to my mind, explains nothing, because these symptoms of auto-intoxication are common conditions in insane persons. But let us consider the question from a biological standpoint. The germ cells are the transmitters, not merely of morphological characters, but also of the raw material of mental characters of ancestors. There may be a failure of specific energy of the germ cells, and this dynamic deficiency shows itself in the two master tissues, sexual glands and brain, at the time when all the latent energy of these organs is stimulated to a supreme effort for the reproduction of the species.

Biochemistry and physiological experiments are throwing a new light on the intimate and subtle functional association of all the organs of the body brought about by the internal secretions or hormones, specially those of the ductless glands, which we know play an important rôle in the metabolism, growth, and functional activity of the central nervous system. In proof of this I need only mention the known facts concerning the thyroid glands and their absence in relation to cretinism and myxœdema, and of hypothyroidism and hyperthyroidism in relation to certain nervous and mental disorders especially affecting women. Again, there are certain forms of disease of the pituitary body which are associated with abnormalities of the sexual organs; besides there are other facts based upon clinical observation and experiment showing the correlation of function between the sexual glands and the pituitary body which I need not dwell upon here, but they suffice to support the view that hormones produced by the sexual glands may serve, not only to excite the growth of the secondary morphological sexual characters, but to arouse in the central nervous system the vague instinctive desire connected with the sexual appetite.

All the higher as well as the baser sentiments have their roots in the desire for propagation even more than preservation, for Nature is unmindful of the individual, mindful only of the species. Painting, sculpture, poetry, music, literature, and the drama owe their inspiration and fervour to the sexual passion, yet social conditions, traditions, and customs conspire to throw a veil over the tree of life, the openly expressed knowledge of which has been regarded as forbidden fruit. Modern social conditions tend to repress or suppress the natural physiological gratification of the sexual passion, especially in women. When this happens the *desire* is not suppressed, but causes a silent undercurrent of sexual passion which, although it may not be manifest to the external world, nevertheless occupies a large place in the conscious and subconscious self; it suffuses silent thought and consciousness with an emotional tone which may find outward expression in æsthetic or religious observances or fanatical agitation; its suppression is one of the causes of insanity, especially in subjects with the neuropathic taint, for it tends to continued mental depression and the instatement of an anxiety-neurosis which in its turn leads to a disorder of the vital functions and a disturbance of the biochemical relations of the whole body, causing an auto-intoxication; thus a vicious circle may be established by the interaction of a disordered mind and a disordered body.

Evolution of Character in Man.

The raw material of character possessed by every individual is a complex of the characters derived from species and sex—the outcome of evolution, and fixed and organised by heredity, but modified by special racial and family traits. All stable foundations of character have their roots in the desires, emotions, and instincts connected with preservation of the individual and the species, but modified in accordance with the functional and bodily differences of the two sexes. They are the oldest phylogenetically and ontogenetically; they are common to all human beings, and are the main source of all human activities. This fact has been poetically expressed by Schiller in the following lines:—

Durch Hunger und durch Liebe
Erhält sich die Weltgetriebe.

The special racial and family characters are of later development, therefore are less fixed, stable, and organised in the nervous system, consequently are more liable to mutation.

The last to come are the family characters, which are most subject to mutation and therefore most influenced by adaptation to environment and sexual selection in the struggle for existence. The character of the civilised man, which places him above the primitive savage, is mainly due to racial and family characters which by the evolution of language and the use of the hand as an instrument of the mind have built up the great social heritage which he utilises in the preservation of the individual and the species. Occasionally, for no known reason except atavism, we find an idiot born of intellectual parents. As there is no danger of propagation it does not much matter. In the feebleminded, like the savage, the animal propensities constituting the roots and stem of the tree of life are vigorous for propagation; but the fruits, intellectual and moral, do not ripen sufficiently to be of any productive value; consequently, like weeds, they tend to use up nutrition, materially despoiling the fruitful trees and contaminating the social heritage. The constantly expanding social mind colours the hallucinations, delusions, illusions, obsessions, and phobias of the insane civilised human being, thereby obscuring the real source of the mental disorder, which lies deep down in the roots of character, connected with a germinal inborn failure of the harmonious interrelation of the biochemical processes of organs, the normal functioning of which is indispensable for the appetites, desires, instincts, and emotions associated with reproduction.

Insanity among Primitive Peoples: Dementia Præcox.

In primitive and semi-primitive people the animal instincts and passions naturally stand out in relief. Their ideas are limited to concrete sensations, and when they suffer with obsessions they are sensory in character. They are often particularly liable to hypnotic conditions and suggestion; owing to a lack of highest control and an environment of mysticism, superstition, and witchcraft, the fear of natural phenomena, which they cannot explain, enters largely into their mentality. P. C. J. van Brero, who has had a long experience at Lawang Asylum, Java, points out the difficulties of obtaining information regarding the prevalence of different forms of insanity among primitive and semi-primitive peoples, and of appraising the value of such accounts as exist by various writers, owing to their using a different nomenclature. Nevertheless, it appears that they suffer, although to a less extent and with a different colouring, the same forms of insanity, and apparently the primary dementia of adolescence, dementia præcox, is the commonest form.

Among these people it cannot be an effect of the non-gratification of the sexual instincts, owing to failure of opportunity occasioned by social conditions; yet its appearance in individuals in early adolescence, who up to the time of puberty were normal, points to some intimate relation of the disease to the sexual functions. We know that this form of insanity is evidence in most cases of an ancestral neuropathic taint. In a large proportion of the cases of insane parents and offspring which I have collected I find the offspring are suffering with this form of insanity. In 80 per cent. of the cases of dementia præcox the onset occurs before 25. In cases where there are two or more members of the same co-fraternity suffering with insanity it is nearly always this form of insanity of adolescence, and it frequently terminates in dementia. It is noteworthy, too, that in a large proportion of cases the age of onset of the offspring of insane parents is the same or within a few years of the same. This corresponds to family nervous diseases. The sexes are about equally affected. Over-pressure at school and college is often (I think erroneously) attributed as the essential cause of the disease, although I do not deny there is not infrequently a history of such over-pressure. Again, masturbation is very common, so much so that it is thought to be the cause of the onset of the disease and of the anergic stupor that so commonly occurs in these cases, but it is more probable that this is a sign of the disease and not a cause.

Now it is very interesting to note that up to the time of puberty the majority of patients affected by dementia præcox have been intelligent individuals and full of promise. Aschaffenburg, cited by Christain, gives the following proportion per cent. of dementia præcox: 27 men and 21 women were of an average intelligence prior to the onset; 55 males and 66 females were intellectually good and even remarkable; 18 males and 13 females presented a psychic development below the average without, however, being idiots or imbeciles. These and other statistics tend to show that there is not a congenital feeblemindedness but some germinal defect, possibly of durability of the sexual glands, which has a profound influence on the function of the brain, causing at first mental disorder, and lastly dementia. Had time permitted I should have liked to say something regarding maniacal-depressive insanity and involutional melancholia.

Every case of insanity should be regarded as a biological problem, and it can only be solved by a full consideration of what the individual was born with and what has happened after birth.

CENTRAL LONDON THROAT, NOSE, AND EAR HOSPITAL.—Dr. Wyatt Wingrave will deliver a lecture on Cerebro-spinal Fluid—Normal and Morbid, at 3 P.M. on Friday, July 17th, at this hospital, Gray's Inn-road, W.C.

THE TREATMENT OF ANKYLOSTOMA ANÆMIA.

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With a Note by
A. R. FERGUSON, M.D., C.M. Glasg.,
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ON taking over charge of the medical wards in the large Cairo Hospital of Kasr-el-Ainy some years ago I was struck by the varying and often disappointing results of treatment in the large number of cases of ankylostomiasis admitted, which approach 400 annually. Since the outstanding symptom of this disease is anæmia, I instituted regular blood examinations in each case to test the efficacy of the treatment adopted.

My observations are based on a study of over 300 cases. These all represent patients severely ill with ankylostomiasis and not simply harbourers of the parasite or cases of ankylostoma infection, to follow the distinction made by Boycott.[1] So long as no serious degree of anæmia is present the average Egyptian peasant (fellah) is usually able to continue work and does not apply for hospital treatment unless suffering from some other disease. A fall of hæmoglobin below 50 per cent., however, is a serious handicap on exertion, but the fellah generally delays until he is entirely incapacitated before journeying to hospital. Thus I found in my series that the average hæmoglobin value on entry was only 22 per cent., and in one-fifth it did not exceed 10 per cent. That patients can get about with such intense anæmia must be ascribed to the increase of blood volume described by Haldane, so that the total deficiency of hæmoglobin is considerably less than appears. The average colour index was reduced to 0·4. I have never yet seen a case of ankylostomiasis in which the high colour index typical of pernicious anæmia was approached, though instances have been reported.[2] For the hæmoglobin estimation I at first employed Oliver's instrument and his daylight reading scales, but I now use Talquist's simple method, which is sufficiently accurate and time-saving.

Long before the parasitic cause of endemic anæmia was discovered patients were treated with iron in the hope of benefiting this chlorotic type of anæmia. Dock and Bass[2] narrate instances from the Southern States where decided, though only temporary, improvement resulted. In my series I have only met with one case of pure ankylostomiasis in which a slight improvement did follow the administration of iron before any worms were expelled. (Chart VI.) This failure may be due to the severity and long duration of the anæmia in hospital patients. Yet cases of severe secondary anæmia due to loss of blood in bilharziasis commonly show decided improvement on hæmatinic treatment, although the hæmorrhage from bladder and intestine can rarely be arrested. However, rest in bed and attention to diet probably do much to relieve the drain on the system and to enable the bone marrow to make good the loss. From the point of clinical diagnosis it may be stated that a marked anæmia dependent on no obvious cause, and which resists hæmatinics, is almost invariably due to ankylostomiasis in this country. The successful treatment of such patients depends primarily on a correct diagnosis and the expulsion of the ankylostoma worms. In every case of anæmia the stools are examined for ova by the microscope, and if none be found a culture is made and the result noted after an incubation of five days at summer temperature to obtain developed larvæ. When time is important the centrifuge method described by Dock and Bass for isolating ova from stools may be used. Examination of the blood for eosinophilia is of little value in this country where all forms of helminthiasis are rife. The choice of anthelmintic, the dosage, and the method of administration vary with different physicians. The careful work of Schüffner and Vervoort[3] on a large scale at Delhi gave the following results for a single administration, and is in harmony with the experience of most other workers:—

Drug.	Dose.	How given.	Worms expelled.
	grm.		Per cent.
Thymol.	5	One gramme two-hourly. Followed by castor oil.	83
Beta naphthol.	3	As above.	68
	4	As above.	74
Eucalyptus. Chloroform. Castor oil.	3 3·5 40	Mixture. In two portions at interval of half an hour.	38
Oleum chenopodii.	3	In three doses of 16 drops on sugar every two hours. Followed by castor oil 17 grm. with chloroform 3 grm.	91
Oleum chenopodii.	3	As above, but without castor oil and chloroform.	84

Personally I generally use a mixture of thymol (3 to 4 grm.) with beta naphthol (3 grm.). The addition of beta naphthol reduces the dose of thymol necessary and ensures a thorough breaking up of the crystals, which often tend to pack together in the cachets. Oleum chenopodii is expensive and has a peculiarly disagreeable flavour, most repulsive to patients, so I have not persevered with its use.

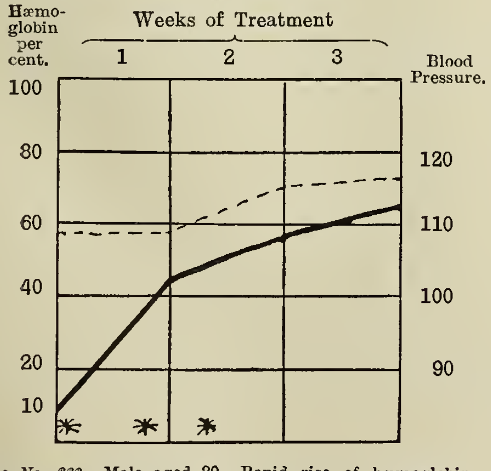
Whatever drug be chosen as vermicide, a preliminary preparation of the patient by fasting and purgation is strongly advisable. The usual course consists of milk diet for one day, with a saline purge in the evening in order to free the upper intestinal tract from food and mucus and so expose the worms, which often lie buried. The vermicide is then given early the next morning on an empty stomach in divided doses and the drug swept out by a second purge two hours after the last dose. Until this is finished the patient is kept in bed.

In order to free the intestine of the worms it is usually necessary to repeat the vermicide, often several times. Ashford and King at Porto Rico found two courses generally sufficient; Sandwith in Egypt averaged 2·6; and Dock and Bass found over three courses necessary in half their patients. It is advisable to allow from four to seven days to elapse before the treatment is repeated. Personally I prefer the shorter interval, as it favours a cumulative effect of the drug on the worms. When practicable the stools are examined for the worms expelled after each course, and when no more are forthcoming a microscopical search for ova is made to see if any (female) worms remain. This should be deferred until some days after vermicidal treatment, since the drug may temporarily disable the egg-laying capacity of worms without killing them. Since it is more important to know whether worms remain than the number of those discharged, I consider this search imperative and cultivate the stools whenever possible, to obtain a certain result. When the worms prove resistant to one vermicide, it is advisable to employ an alternative drug.

Expulsion of the worms is followed by gradual disappearance of the anæmia in most cases of ankylostomiasis. The rise of hæmoglobin is more often irregular than uniform, depending on the proportion of worms got rid of by successive doses of vermicide. A decided improvement is commonly seen after the second dose; for if a patient has 300 worms, for example, 200 of which are expelled by the initial dose, the 100 that remain are generally sufficient to maintain the anæmia. As a rule, a rise in the number of red corpuscles precedes the rise of hæmoglobin, and the number of corpuscles reaches normal long before the hæmoglobin standard is attained. This response to anthelmintic treatment occurs readily in young and vigorous subjects recently infected. But in the severe chronic cases that form the majority of hospital in-patients, satisfactory improvement may not occur or may be delayed for some months. Hence the patient is not conscious of any benefit accruing from his stay in hospital, and, owing to the liability of reinfection after discharge, may be none the better for the treatment.

In order to obtain a rapid cure of the anæmia in moderate cases, and to get any decided improvement in severe cases, hæmatinic treatment is generally essential. Since the anæmia is of a marked chlorotic type the administration of iron is strongly indicated to supply the deficiency of hæmoglobin. Under the influence of iron a rapid amelioration is usually seen, even in patients with severe anæmia, and before all the worms are expelled. There is generally an immediate rise in hæmoglobin value of from 20 to 30 per cent. in the first week, and a slower increase later. A typical case is here shown (Chart I.).

CHART I.

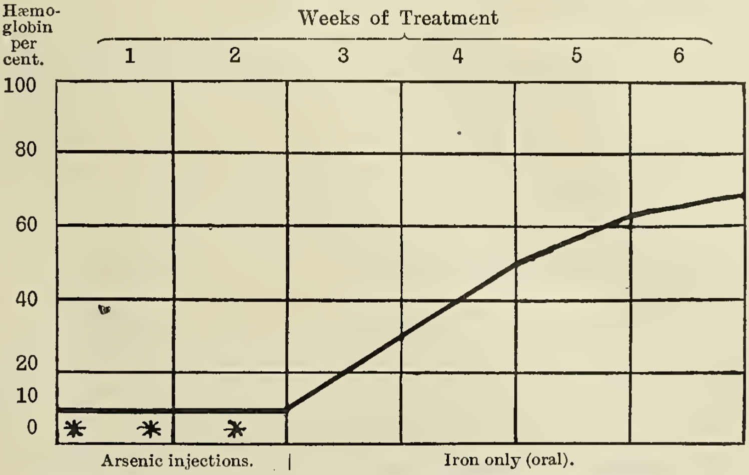


Case No. 232.—Male aged 20. Rapid rise of hæmoglobin (thick line) followed by rise of blood pressure (dotted line). Asterisks indicate administration of vermicide.

In young subjects with vigorous bone marrow the transformation in appearance is startling. In one such patient a single dose of thymol and the administration of reduced iron raised the hæmoglobin value from 10 to 60 per cent. in one week. This increase may be partly explained by a rapid reduction of the hydræmia shown to exist by Haldane, with concentration of the blood elements. But the rise of hæmoglobin in such cases treated with iron is proportionally greater than the rise in the number of red corpuscles, so that the colour index rises quickly, pointing to a high degree of activity on the part of the bone marrow. This is rarely seen when iron is withheld, the colour index remaining low for a long time.

Chart II. shows the usual result of withholding iron in a severe case. Although all the worms had been expelled and arsenic given, no rise of hæmoglobin occurred until iron was substituted, when the response was immediate.

CHART II.



Case No. 176.—Male, aged 39. Asterisks denote administration of vermicides. All worms expelled.

An interesting case is shown in Chart III. Here iron and arsenic were given at first for just three days, with immediate benefit, but were afterwards omitted. In spite of the complete expulsion of worms the hæmoglobin value actually sank, but rose again rapidly as soon as hæmatinic treatment was resumed.

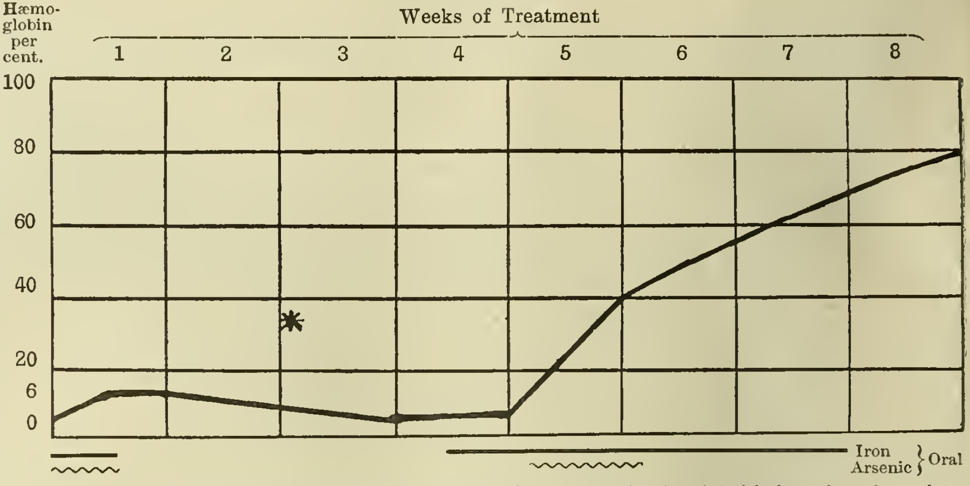
When iron is given from the first, any rise in hæmoglobin value is a most useful guide to the expulsion of the worms. A halt on the upward curve generally means that worms still remain and that further anthelmintic treatment is necessary as shown in Chart IV.

Methods of giving Iron.

The organism quickly responds to iron as a rule, and the form in which it is presented makes but little difference. Comparative tests in my series showed that the stronger forms are well taken and give the most satisfactory results. Thus reduced iron, ferric perchloride, and ferrous sulphate yield an average hæmoglobin increase of from 9 to 13 per cent. weekly, the difference depending largely on individual powers of recuperance. The carbonate of iron (Blaud pills) and the ammonio-citrate are slightly inferior in action, perhaps owing to their styptic properties.

Organic compounds present no advantages over the simple forms of iron. Preparations of hæmoglobin are generally useless; any improvement that may occur under their administration would seem to occur equally well without. Manganese is similarly ineffective as in chlorosis.[4] By the courtesy of Dr. J. Lyn Dimond[5] and of Messrs. Oppenheimer, of London, I was enabled to test a colloid preparation of iron. This was ineffective in the very small doses that can ordinarily be given hypodermically, although large doses like those of citrate have some effect. However, since oral medication is so satisfactory in ankylostoma anæmia, special methods of administration of iron are uncalled for.

CHART III.

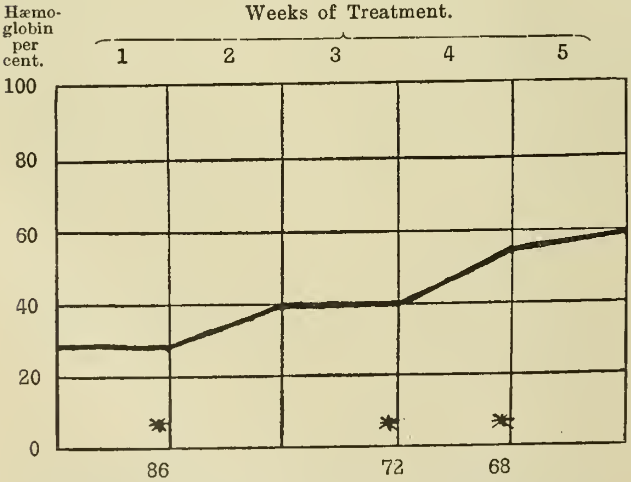


Case No. 211.—Male, aged 25, severely ill with much œdema but no albuminuria. Asterisk shows date of complete expulsion of worms. Lines below denote administration of hæmatinics.

Eosinophilia.

The anæmia characteristic of ankylostomiasis has already been described briefly; a few remarks may be added on the eosinophilia which is nearly always present. This is a characteristic feature of worm infections in general, and occurs in response to the absorption of their products. When worms live free in the intestine the absorption of this material by their host is often small, and eosinophilia may be slight. But when the worms live in the tissues of the host (e.g., trichiniasis, bilharziasis) the absorption is much greater and the eosinophilia pronounced. It then varies directly with the number of living worms present, and inversely with the degree of anæmia existing at any time.[6] In ankylostomiasis, when the worms are settled in the intestine, their relation to the host is intermediate between these two classes. There is usually a high eosinophilia in the early weeks of infection, which falls when the responsive powers of the marrow are impaired by chronic anæmia. On treatment by vermicides the eosinophilia, if high, falls with expulsion of the worms; but if the eosinophilia be low it may increase when the anæmia improves. Thus in many cases the eosinophilia may fall at first following expulsion of worms and rise again later owing to the improved reaction of the marrow to any that remain. Persistent eosinophilia lasting for months or years after the complete expulsion of worms is not uncommon, and is probably due to the presence of larvæ from dermal infection, which may remain for years arrested or wandering in the tissues, and never reach the intestine.

CHART IV.



Case No. 39.—Male, aged 35. Asterisks denote administration of vermicide; the figures give the pulse-rate. At the end of the second week ova were still found in the stools.

Other Symptoms.

The rapid improvement in the blood condition brought about by successful treatment is followed by a disappearance of the various subjective symptoms, such as headache neuralgic and joint pains, palpitation, and epigastric pain. But while the anæmia may be quickly relieved the symptoms commonly continue for some weeks afterwards. Such organic changes as fatty degeneration of the heart muscle, for instance, take months rather than weeks for recovery.

My assistant, Dr. Garas, kindly estimated the blood pressure in a series of cases under treatment. He found a distinct rise to follow the rise in hæmoglobin value (Chart I.). Another good sign of progress is the reduction in a rapid pulse-rate, as is shown in Chart IV. In cases of "ankylostoma kidney," where there is profound anæmia, general anasarca, and deficient urinary excretion with little or no albuminuria, striking results may be obtained. Such a case is seen in Chart III., where the daily amount of urine rose from 500 c.c. to 5000 c.c. during the rapid improvement in the anæmia.

Refractory Cases.

In a certain proportion of chronic cases of ankylostomiasis which have undergone the routine treatment by vermicides and iron improvement may be wholly absent or may be only partial. A somewhat slow rise of hæmoglobin to about

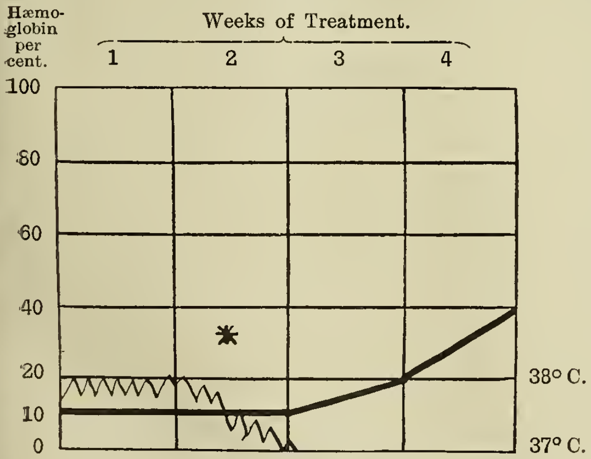
50 per cent. is often obtained with no subsequent improvement. The causes of total or partial failure generally come under the following heads:—

(*a*) *Persistence of worms.*—After worms have been expelled, their non-appearance in the stools after repeated doses of vermicide is no proof of a complete clearance. Careful examinations of the stools for ova, as already described, are necessary to make certain. A few male worms may of course escape detection, or there may be immature forms resulting from dermal infection arrested in the tissues, but it is tolerably certain that these are unproductive of anæmia.

(*b*) *Complicating diseases.*—Of these, chronic diarrhœa (generally due to intestinal bilharziasis) and parenchymatous nephritis are, in this country, the most serious complications that aggravate anæmia. The constant drain on the system is not sufficiently relieved by the removal of ankylostoma worms to permit of a good recovery. Pellagra, endemic cirrhosis (Egyptian splenomegaly), and bilharziasis commonly complicate ankylostomiasis in Egypt, but do not retard recovery unless they have reached a very advanced stage.

(*c*) *Fever.*—So long as there is fever rising over 100° F. from any cause the administration of hæmatinics is powerless to affect the anæmia. In some cases the fever is due to a specific cause such as malaria, while in others it appears due to secondary infection at the sites of bites in the intestine. This latter variety seems relatively more common in children, and is best treated by anthelmintics. So soon as the fever subsides a satisfactory improvement is the rule, as shown below.

CHART V.



Case No. 107.—Male, aged 19. Persistent anæmia in spite of treatment until fall of temperature. Asterisk denotes date of complete expulsion of worms.

In severe cases of ankylostomiasis the weakened state of the patient may prevent a febrile reaction, and a terminal septicæmia be obscured. The only sign may be a polynuclear leucocytosis, generally with absence of eosinophiles, as in a recent fatal case where the leucocytes averaged 17,000 to 20,000, while the number of red corpuscles sank from 1,570,000 to 976,000 in the course of the last fortnight. In such cases death may occur after all the worms have been expelled.

(*d*) But in the majority of cases of severe anæmia which show little or no improvement at all after complete expulsion of ankylostoma worms the above causes of failure can be excluded. Frequently these patients have comparatively few worms present, so that absorption of a toxin produced by the worms cannot explain an anæmia persisting after their removal. The theory of hæmolysis due to a secondary bacterial infection at the sites of the bites rests on no secure foundation of clinical or post-mortem evidence,[7] [8] and the blood changes are essentially different in nature and progress from those characteristic of pernicious anæmia. In this connexion the condition of the hæmopoietic system is of fundamental importance, and I am greatly indebted to my colleague, Professor Ferguson, for the following statement.

Note by PROFESSOR FERGUSON.

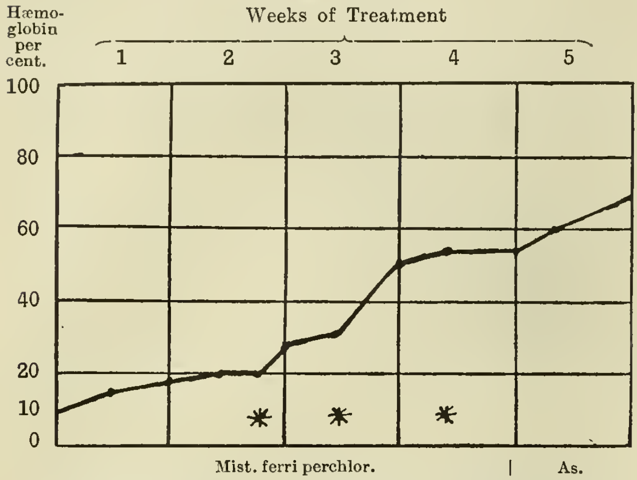
"The bone marrow of the body exhibits, during the period covered by the earlier stages of ankylostoma infection, a notable degree of erythroblastic and leucoblastic activity. This can, as a general rule, be observed to extend into the marrow of the long bones, and it undoubtedly occurs, though probably it is of shorter duration, in cases of very severe infection. The marrow of the femur shaft becomes transformed into a compact, firm, solid tissue of brownish-red colour throughout the length of the medullary cavity. Little or no trace of the marrow fat is in many cases visible. Examined microscopically, this hyperplastic marrow is specially rich in normoblasts and eosinophiles, examples of active mitosis being frequently observed in the latter class of cell. The marrow eosinophiles at the beginning of this phase of activity are well formed and highly charged with characteristic granules.

"The period of this hyperplastic phase is difficult to determine. Evidence is not wanting to show that in cases of moderate severity it may persist for a considerable time. But in severe cases sooner or later it gradually passes off, the marrow becoming paler, and finally reaching a condition of gelatinous atrophy. This decline in myelic activity is apparent first of all in the long bones, but later also in the ribs. At this latter stage the precursors of the red cells and the eosinophiles are notably reduced. A feature of significance in connexion with the latter is that, with an imperfectly lobulated nucleus, their cytoplasm is very insufficiently supplied with eosinophilic granules. We are fairly warranted in regarding such a condition of the marrow as one of exhaustion, and while regeneration is yet actually possible, a very considerable time will be required for its realisation. It is significant in this connexion that the blood in chronic severe cases of ankylostomiasis frequently contains eosinophile cells of imperfectly matured type and scanty granular content, comparable in all respects to those described above as existing in the marrow."

Clinical Observations.

The condition of the bone marrow determines the rate and degree of recovery from the anæmia when the cause (i.e., the ankylostomes) has been removed. In moderate cases, when the marrow is hypertrophied, recovery follows promptly under the administration of iron, more slowly when iron is only obtainable from the food. When the marrow itself becomes impoverished by anæmia, and the active phase has reached its decline, the response to such treatment is slower and generally imperfect, although the actual degree of anæmia present may be no greater. The rise in hæmoglobin value is limited and may halt when a percentage of from 40 to 60 is reached, although every worm has been expelled and no complications are present. Under these circumstances the stimulating influence of arsenic on the bone marrow is invaluable, as is shown in the subsequent charts.

CHART VI.

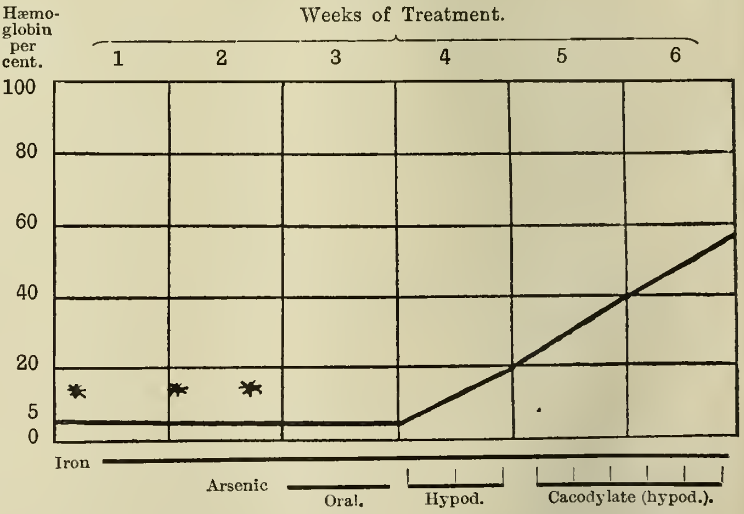


Case No. 305.—Boy, aged 14. Asterisks denote administrations of vermicide. Shows rise of hæmoglobin before expulsion of the worms (exceptional). Distinctive rises after first two doses which expelled all the worms. Final rise due to arsenic.

Arsenic by itself, in this form of chlorotic anæmia, does not increase the percentage of hæmoglobin unless iron be supplied. (Chart II.) In the early stages of recovery from moderate anæmia the rate of progress under treatment by iron is unaffected by the addition of arsenic, but later the effect of the combined action is apparent, giving a well-sustained rise of hæmoglobin to a higher degree. Thus, in two series of cases, the first, treated by ferric perchloride alone, showed an average weekly increase of 12·8 per cent. hæmoglobin. The second series, in which solution of arsenic was added to the iron mixture, showed an average increase of 14·3 per cent., the difference being due to a better degree of improvement in the later weeks of treatment.

In the severest cases of ankylostomiasis, when the bone marrow is atrophied, arsenic is essential to recovery. Clinically, these patients exhibit a grave degree of anæmia (under 20 per cent. hæmoglobin), with often but few worms present. Apparently the worms fail to obtain sufficient nourishment from the exhausted tissues and are starved out. Thus, in the severe case illustrated below (Chart VII.) only 16 worms were obtained from the intestine. The blood reflects the condition of the depleted marrow. The red corpuscles are greatly reduced in number and exhibit marked poikilocytosis and metachromophilia with the appearance of a few normoblasts. Instances of a pernicious type of anæmia have been reported, but I have never found the colour index high nor megaloblasts present. However, when the worms have been expelled and the anæmia somewhat improved by treatment the colour index may be raised to unity, the rise in hæmoglobin value being greater than the increase in number of red corpuscles. The leucocytes seldom show any alteration in total numbers or marked qualitative changes, except a low degree of eosinophilia in most cases. In these severe cases arsenic acts very much better when given hypodermically.

CHART VII.



Case No. 273.—Male, aged 48. Asterisks denote administration of vermicides. No ova found in stools after last dose. Lines beneath chart show hæmatinic treatment adopted.

I have obtained excellent results from the use of moderate hypodermic doses of sodium arsenate, cacodylate and neo-cacodylate respectively, but prefer the organic forms as being less toxic. As already mentioned, it is necessary to give iron at the same time. (See Charts II. and VIII.) Under the combined treatment the rise of hæmoglobin is relatively greater than the rise in number of red corpuscles, so that the colour index soon approaches unity.

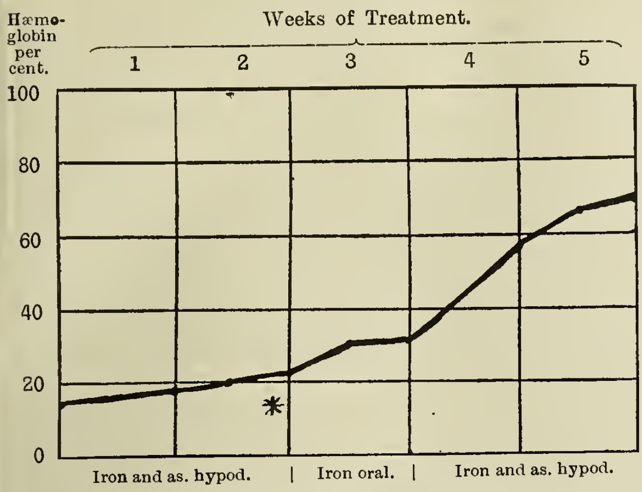
The combination of iron with arsenic in forms suitable for hypodermic medication—e.g., iron arsenate or iron cacodylate—does not contain enough iron to give a rapid result. This is well seen in Chart VIII.

Conclusions.

In this record of clinical results there is little need to enter into the somewhat vexed question of the actual factors that cause the anæmia of ankylostomiasis. This has been well summarised by Boycott in his Milroy lectures, and the recent work of W. Nicoll[9] supports the view that actual loss of blood by hæmorrhage from the intestinal bites is the main cause of the anæmia.

To account for a severe anæmia in cases of ankylostomiasis, where the number of worms present is small, the theory of hæmolysis from secondary bacterial infection has been advanced. This view is hardly supported by the clinical facts presented above, notably the rapid cure of such cases by expulsion of the worms aided by hæmatinic treatment. Septic infection of the intestinal tract, such as occurs in typhoid fever and dysentery, is not specially productive of anæmia. But in the stomach and upper part of the small intestine septic diseases are certainly associated with marked anæmia. Thus a conspicuous feature of cancer of the stomach and upper intestine is a progressive anæmia of a secondary type. The work of Ashby[10] and others has shown that the organism normally absorbs iron from the food only in the upper part of the small intestine. This fact may account for the striking development of anæmia when the functions of this part of the intestine are disturbed by the septic inflammation consequent on ankylostoma infection or malignant disease. The bone-marrow is thus deprived of the free supply of iron necessary to replace the hæmoglobin lost by hæmorrhage, and the colour index is depressed. For it is a time-honoured maxim in the treatment of chlorosis and other forms of anæmia that catarrh of the digestive tract must be corrected before iron can produce its therapeutic effect. Hence removal of the inflammation caused by the presence of ankylostoma worms is a necessary preliminary to successful hæmatinic treatment. It is in this way that I believe bacterial action aggravates the anæmia of ankylostomiasis. In such severe cases as seen in Chart III. the ready response of the marrow to arsenic and iron shows that its function is not seriously impaired by circulating toxin.

CHART VIII.



Case No. 279.—Boy, aged 14. Asterisk shows date of complete expulsion of worms. Shows arsenic essential to recovery, but its action much accelerated by oral administration of iron.

Summary.

1. Patients with slight anæmia may benefit from hæmatinics without the expulsion of worms. But no case of decided anæmia can be really improved unless the worms be expelled. 2. Recent cases of moderate anæmia from ankylostomiasis are cured by expulsion of the worms. Recovery in most chronic cases is very slow unless hæmatinics be given. 3. Under treatment with vermicides and iron the rise in hæmoglobin is a reliable index to the expulsion of the worms provided the marrow be in a condition to respond. 4. The administration of simple forms of iron by mouth is more satisfactory than the use of organic compounds or hypodermic medication. 5. Manganese cannot be substituted for iron. 6. After the expulsion of worms in a moderately severe case the recovery from anæmia is better and quicker when arsenic is given as well as iron. 7. In severe cases of ankylostomiasis the administration of arsenic is often essential to recovery. 8. In such cases arsenic given by the mouth may be ineffectual, but hypodermic medication generally succeeds. 9. Arsenic by itself is useless. Iron is always essential to recovery from severe ankylostomiasis. 10. Persistent eosinophilia after the complete expulsion of worms may be attributed to the presence of living larvæ in the tissues. 11. Intense and persistent anæmia in ankylostomiasis generally denotes exhaustion and atrophy of the bone marrow.

In conclusion, I must acknowledge my indebtedness to my friend, Professor Ferguson, for his advice and his note on the marrow condition here reproduced. My best thanks are due to my assistant physician, Dr. Garas, for his coöperation, and to a succession of house physicians who have undertaken the laborious work of examination and culture of the stools.

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Cairo.

A CASE OF CHEILOTOMY.

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LAST year, in conjunction with Dr. C. Preston Ball, of Dublin, I operated upon two cases of crippling traumatic arthritis of the hip-joint by an operation which consisted in opening the capsule of the hip-joint and chiselling away an abnormal lip on the head of the femur in the upper half of its circumference, thus restoring the movements of abduction and rotation to the joint, in which previously all the movements except limited flexion had been lost.[1] The results in these two cases were completely satisfactory. The case I am now about to record is a more recent one, in which a similar beneficial result from the operation has been tested by the lapse of ten months since the date of operation. The improvement secured is not only fully maintained, but continues to be progressive. The condition of the earlier cases remains satisfactory; the subject of my first operation wrote recently and said that he was frequently playing 18 holes a day at golf.

The patient, a man aged 52, was sent to me in July, 1913, by Dr. S. G. Davidson, of Hawick. He had also seen Dr. W. M. Crawford Watson, of Harrogate, who concurred in advising him to consult me. In 1898 the patient's horse fell with him. He was not dismounted, but his left hip was crushed as the horse rolled over on to its left side. He also sustained a broken collar bone and was treated in bed until the clavicle united. At the time he was not aware that he had damaged his left hip, but gradually pain developed in the joint and became more severe. For some time he was treated for sciatica as the pain appeared to have the characters of this affection. During the next seven or eight years the condition of his hip became an increasingly serious incubus. He had undergone a yearly cure at Harrogate and always with a certain amount of benefit, and various methods of treatment had been used at different times under Dr. Crawford Watson's direction, including cataphoresis and vaccine treatment. He was unable to ride; indeed, he had not been on a horse for three years. This was a very serious disability, since it prevented him from controlling the management of his large farm. He could walk half a mile with pain and difficulty. The pain lasted for some time after the exercise was over, and was so severe that it made him perspire freely. He could with difficulty put on his left boot. At night he was unable to lie on his left side owing to the pain which pressure produced in the hip. If in the night he rolled over during his sleep this pain awoke him. Apart from pressure, there was no spontaneous pain in the joint at night. His general health was good. He had not suffered from rheumatism in the other joints, except slightly in the big toes, and he had had occasional attacks of lumbago.

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[1] Cheilotomy: a Function-restoring Operation in Crippling Traumatic Arthritis of the Hip-joint, by W. Sampson Handley, F.R.C.S. Eng., and C. Preston Ball, M.D. Dub., Brit. Med. Jour., May 3rd, 1913.

Stereo-skiagrams of the joint were taken by Dr. W. Hope Fowler, of Edinburgh. They showed marked lipping of the articular surface of the femur, together with a certain amount of lipping of the acetabulum. The normal concavity of the upper edge of the neck of the femur was replaced by a convexity. There was some blurring of the cartilage interval, but it was still present, so that disorganisation of the joint had not proceeded far. Dr. Davidson considered, and I agreed with him, that the skiagrams indicated a state of affairs which would be greatly improved by cheilotomy. This impression was confirmed by an examination of the patient. Flexion of the hip was possible to a right angle, while abduction and rotation were exceedingly limited, though not absolutely absent. There was slight wasting of the thigh to the extent of about one inch in circumference. An examination of the patient showed him to be in sound general health. He was, however, rather stout, and this added to the difficulty of the operation.

The patient came to London in August, 1913, for the operation, and on the 27th I operated. The anæsthetic was given by Mr. Herbert Charles, and the operation was a prolonged one owing to the stoutness of the patient and the depth of the wound. The hip was approached by a Kocher's posterior incision, and the capsule being opened the buttresses at the upper posterior and anterior aspects of the head of the femur were removed piece by piece. The capsule was sewn up with stout silk. The patient made a good convalescence, although the wound continued to ooze serum for about a week. Passive movements were begun after the first few days.

On Sept. 20th the patient left the nursing home, walking with the aid of a stick. His limping was much less than before the operation, and he could comfortably stride a capsized chair as wide as a horse's back, and could lie all night on the affected hip without being waked by pain—a fact which struck him particularly. There was free rotation of the joint. Abduction was fair but limited by some remaining muscular spasm. A week after his return home Dr. Davidson wrote to me that the patient had stood the journey well and that he was steadily improving. His letter goes on: "He has quite a big range of movement now and can abduct almost to the normal extent. He walks quite well and any limp that appears is more due to habit than anything else. His pain has disappeared entirely, and his spirits have risen in consequence. To-day for the first time in three years he got on horseback and rode round his farmyard without difficulty. His nurse and I are giving him daily movement and will continue to do so for some time yet. On the whole, you are to be congratulated on making a big success of this case."

In November the patient went to Harrogate for some massage and exercise and to take the water to keep down his weight, which since the operation had been increasing rather inconveniently. Dr. Crawford Watson wrote to me at this time: "I must congratulate you upon the result of the operation. He has much more movement and I should think he would be able to ride. He has been on a horse cantering and walking, but has not tried trotting yet."

On several occasions since his operation the patient has written to me. On Dec. 27th last year he says: "I can now walk fully a mile with the help of a stick, but when I try without I can proceed very slowly and only for a short distance, but I think I am gradually going in the right direction, if slowly. My health is good and I have put on 2 st. 2 lb. since I left the nursing home, which is worse for the leg to carry." I wrote to inquire about his riding, and he replied that by using a riding block which reached up to within a foot of the stirrup iron he could get on and off the horse without assistance and without difficulty, that he had no trouble in riding at a walking pace, and that he intended to try the trot in a short time. He still felt matters improving.

The patient reported himself to me on March 10th of this year in excellent general health. With increasing activity his weight has come down to its normal level. He is now living an ordinary life, and can stand about all day without being conscious of any pain or weakness in his hip. By my advice he has not attempted to walk long distances, but he can walk a mile at a fair pace without any discomfort either at the time or subsequently. A slight limp is still perceptible in his gait, which, however, is now active and strong. Since the operation he has had no pain whatever in the hip, a point on which he joyfully insisted. He is now able not only to mount and dismount a horse, but to trot and canter. In trotting, however, he finds some difficulty in rising in the stirrups, and has to help himself up with a hand on the front of the saddle. Cantering he finds quite easy.

On examination I found slight muscular wasting still persistent, the right thigh measuring an inch less round than the left one, and the right calf half an inch less. Abduction was perfectly free to the full extent; it appeared, in fact, actually rather more free on the side operated upon than on the other side. Rotation also was free. No muscular spasm existed. Flexion was free up to a right angle, as before the operation. This is now the only movement of the joint in which he is conscious of any abnormal restriction. His only present complaint is of slight pain in the adductors after any unusual exertion. This probably depends on slight shortening of these muscles during the period when abduction was in abeyance. He expressed himself as fully satisfied with the result of the operation, which has restored to him a life of full activity.

New Cavendish-street, W.

A COMMON MODE OF DEFERRED DEATH AFTER TRACHEOTOMY FOR LARYNGEAL DIPHTHERIA: THE RELATED TREATMENT.

BY JOHN BIERNACKI, M.D. GLASG.,
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AFTER temporarily successful tracheotomy there may be a return of obstruction due to loose membrane in the trachea—an issue not necessarily dangerous and in any case outside the scope of this paper. Again, a further growth of membrane in the main air passages below the tracheal incision may be responsible for secondary obstruction of a serious kind, but antitoxin treatment has materially altered the course of laryngeal diphtheria in this respect. Under present conditions it nearly always happens in cases of deferred death that severe lobular pneumonia develops. Death is usually attributed to the pneumonia, but this view requires qualification.

In most cases of the kind, if allowed to run their ordinary course, it is more directly the outcome of suffocation by a plug of desiccated mucus and inflammatory discharge located in the neighbourhood of the tracheal bifurcation, as is proved by the immediate relief of obstruction and marked general improvement which frequently ensue when the plug is removed with forceps after such cases have become serious or are even moribund. A plug that forms early may be partly composed of loose membrane, but often none is present. In order to reach the plug a sand-bag or rolled-up towel, sufficient in size, is placed under the patient's shoulders to throw back the head and extend the neck. Inserted closed, the points of the forceps are opened as the bifurcation of the trachea is approached; they are then advanced a little farther, closed again, and withdrawn. As a makeshift, sinus forceps will serve, the points being bent on the flat to a wide angle two-thirds of an inch from the end. However, this instrument is hardly safe, as the sharp points may excoriate the tracheal mucous membrane, and it is sometimes difficult to obtain an effective hold on the plug with them. At Plaistow Hospital the forceps used are broad and bulbous at the point. With either instrument it is easy to search the whole trachea downwards, and even the entrances of the bronchi, given that the head and neck are in proper position. Only a small portion of the plug may be brought away at a first attempt; it may have to be removed piecemeal until what remains is coughed up towards the tracheal incision and can be extracted. Unfortunately the obstruction nearly always recurs; at first the interval may be as long as 12 hours, but it tends to become shorter until extraction gives less relief and then none. Failure to relieve may depend on plugging of the two main bronchi, other factors being the extension of the pulmonary affection with widespread occlusion of the bronchioles.

Many illustrative cases could be cited, but the two following will suffice.

CASE 1.—The patient, a male aged 2 years, was admitted to Plaistow Hospital on March 16th with laryngeal diphtheria and urgent obstruction. Tracheotomy relieved the latter completely, and a comfortable night resulted. Then the discharge from the tube became scanty and the child increasingly restless, with some recession. Towards evening his condition was considered sufficiently grave to justify the use of forceps, and a mass of mucus mixed with membrane was extracted. The obstruction and distress largely subsided. An alkaline spray was prescribed. About midnight the patient expelled a large piece of membrane through the tube. In the morning his condition was evidently worse. He was restless and had some cyanosis and a poor pulse. Ground continued to be lost, and at 2 P.M. a plug of desiccated and inflammatory discharge about two-thirds of an inch in length was withdrawn bodily from the trachea with forceps. Breathing immediately became freer, but the general condition showed less improvement. Throughout the following night and day the restlessness varied in degree. At noon, and again at 6 P.M., plugs were extracted from the trachea. A better night was thereafter passed, although little discharge came away except when the child coughed after spraying. The tracheotomy tube was taken out at 11.30 A.M., and was not replaced despite some restlessness and slight recession. The discharge was becoming looser and more of it was coughed up. Having disappeared for a time the recession returned in the ensuing night, and next day a rubber tube with a dorsal opening was inserted. Four days later the tube was dispensed with. It had to be used again after two days and through the following three nights, from which time the patient made a rapid recovery.

CASE 2.—The patient, a boy aged 3 years, was admitted to Plaistow Hospital on June 17th with marked dyspnœa and recession due to diphtherial croup. The case was of the rather rare septic type. Tracheotomy did not completely relieve the obstruction. Very little discharge was expelled, and a restless night followed. At 11 P.M. a plug of the usual kind was extracted and some relief obtained. Spraying was begun. Next day the child was more comfortable and coughed up a fair amount of thick discharge. By midnight, however, distress had become marked again. On the extraction of a plug there was a change for the better, maintained on the whole through the following day, except that the discharge was offensive—an ominous sign. In the evening cyanosis, modified by pallor, became definite. At 11 P.M. recession was increasing and some thick muco-purulent discharge was extracted. Forceps had to be used again for severe obstruction after a very restless night and day. The relief was less. Oxygen inhalation was begun, but the patient did not react satisfactorily. It was plain that the heart was failing. At 1 A.M. extraction was attempted without success, as only a little discharge was brought away. The child died next day at noon.

Recovery is exceptional once obstruction develops to a degree which makes extraction vital. Nevertheless, life is occasionally saved by clearing out the trachea. Further, the fact that asphyxia largely due to the plug is likely to anticipate death from the pneumonia *per se* must give weight to measures directed against its formation. These considerations indicate a line of treatment which has been well tested at Plaistow Hospital.

1. While dry cases—those generally in which lobular pneumonia is established at the time of operation—are far more liable to tracheal plugging, the latter may take place although the patient's condition is at the outset quite satisfactory. For this reason I feel that the present system of treating straightforward cases without steam cannot be upheld. In my opinion it is safer to place every tracheotomy case in steam for at least a week if the tube is required for that time. Short of this, steam will, of course, be employed at the first sign of dryness. It hinders desiccation of the discharge and is beneficial when lobular pneumonia threatens or is established.

2. If obstruction returns after an interval and is not due to loose membrane, and at the same time the patient is not coughing up discharge freely or the discharge is very tenacious, a spray of sodium bicarbonate is prescribed (10 gr. to the ounce of water). The efficacy of this treatment depends partly on the expertness of the nurse. Using a rather coarse, intermittent spray, she

compresses the ball, say, three times with the nozzle directed into the mouth of the tracheotomy tube. This she does during successive inspirations. The patient will probably then begin to cough, and the spraying fluid mixed with more or less discharge may be driven up to the inner end of the tube or out of it. To sop up the fluid and discharge, the nurse makes a thin swab by wrapping cotton wool round the point of sinus forceps bent to the angle of the tube. New swabs are inserted until one comes away dry. Then she repeats the whole process, perhaps three or four times. Not uncommonly the patient in the end coughs up a quantity of partly desiccated discharge, so that the formation of a plug may be delayed or possibly averted. If definite plugging occurs the sodium bicarbonate is increased to 20 gr. to the ounce.

3. Extraction should be postponed until it is certain that spraying alone will not dissipate the plug and the obstruction has become immediately dangerous. Great care is needful in inserting the forceps; if they are opened too soon or too wide or force is used the wall of the trachea may be injured. Streaking of the discharge by blood not referable to the operation wound may reveal such injury, the result of which may be that obstruction returns earlier and proves less amenable to treatment. The forceps should be inserted no farther than is necessary to grip the plug. Extraction is discontinued in improving cases whenever this can be done without undue danger of suffocation. Some risk may have to be run. Throughout the spray may be serviceable.

4. Oxygen when used is always passed through water. Straight from the cylinder it rapidly absorbs moisture and thus dries up discharge.

Wimpole-street, W.

ARTIFICIAL PNEUMOTHORAX:

FUNDAMENTAL DEFECTS IN THE ACCEPTED TECHNIQUE OF INDUCING PNEUMOTHORAX, AND HOW TO REMEDY THEM.

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TREATMENT by means of artificial pneumothorax is still comparatively rarely applied even in suitable cases of unilateral phthisis. An obvious reason for this is to be found in the difficulties and dangers incident to the accepted method of operating. The difficulties will be appreciated when we remember that the operator is required to carry down his needle to a point at which it will separate the parietal and visceral pleuræ which are in apposition at an unknown depth, and also to verify that it has reached its proper position between these before gas is allowed to flow in. The dangers which have to be taken into account are the possibility of injuring the lung, and the risk of allowing gas to pass into places other than the pleural cavity. It has not been thought necessary to take any great precautions to prevent the puncturing of the lung, but on the other hand measures are regularly taken to verify the proper position of the needle, it being laid down that the gas shall not be allowed to flow until it has been inferred, from the estimation of the intrapleural pressure and its variations, that the needle is in the pleural cavity. Thus it is recognised that it is, at any rate for the purpose of ensuring that the gas shall not pass anywhere except into the pleural cavity, absolutely necessary to record the intrapleural pressure and its variations. And in point of fact the problem of inducing pneumothorax with safety practically resolves itself into the problem of devising the most suitable way of arriving at the pressure at the point where the eye of the needle rests.

I propose in this paper to discuss two ways in which this can be done. The first is the one in general use. In it the intrapleural pressure is given directly by the reading of a manometer connected through a T-piece with the tube which carries gas from the reservoir to the needle. This may be called the direct method. The second is brought forward here for the first time, and is designed to remedy the defects of the direct method. In it a resistance in the form of an adjustable throttle is introduced into the tube which connects the reservoir and the needle, and the intrapleural pressure is then obtained indirectly from the readings of two manometers inserted into the connecting tube on either side of the throttle. This may be called the indirect method.

I will deal first with the direct method, and show that it is seriously defective in that it will not furnish records of the intrapleural pressures until the lung has been punctured and gas leaks into the pleural cavity.

We may begin with a discussion of the mechanics of the manometer as applied to the recording of the intrapleural pressure. It will be recollected that in the ordinary procedure, as a preliminary, the reservoir is shut off from the manometer by means of a clamp before the needle is inserted into the chest wall. The manometer will then record atmospheric pressure, and will continue to do so as the needle is passing through the tissues, but as soon as the orifice enters the pleural cavity the gas will, on account of the negative intrapleural pressure, be aspirated into the pleural cavity from the connecting tube, and in consequence water will be sucked from the open into the closed limb of the manometer. The resulting difference in the levels of the fluid in the manometer will then indicate the negative pressure. It is now presumed that, if at this point the needle is in proper position in the cavity, movements corresponding to the respiratory movements will be communicated to the manometer by the gas passing in and out through the needle. If these movements do not appear in the manometer the needle is usually pushed forward and drawn back until they do. But consideration will show that movements of respiration cannot be communicated to the manometer unless there is gas in the pleural cavity which can be driven back through the needle, and so the question presents itself whether the amount of gas which has been aspirated from the connecting tube and manometer into the pleural cavity will suffice, and whether it will be available for this purpose.

In connexion with the former issue we will recognise that, inasmuch as the intrapleural pressure never differs much from the atmospheric pressure, and since in consequence any gas drawn into the cavity will not be appreciably rarefied, the volume of gas which will have passed from the connecting tube into the pleural cavity will be practically equal to that of the fluid which will have passed from the open to the closed limb of the manometer. This volume would, when the negative pressure stands at 15 cm. of fluid in a manometer tube of 0·3 cm. bore, measure less than 1 c.c.

Again, when we ask ourselves whether the gas which has been drawn in will always find a free passage back through the needle, we see that if the quantity of gas in the pleural cavity is insufficient to keep the lung off the needle—and for this purpose 1 c.c. will be quite insufficient—the visceral pleura will, as soon as the intrapleural pressure rises during expiration above that in the manometer, be flapped back upon the eye of the needle, and gas will then be prevented from returning to the manometer. Any subsequent rise in the intrapleural pressure will not be recorded, and the level of the fluid in the manometer will therefore remain the same until, with the return of inspiration, the intrapleural pressure again falls below that recorded by the manometer and the valve opens again.

Now I have shown in a previous paper[1] that gas in the pleural cavity tends to take up a position opposite the consolidated portions of the lung, and so in general the gas aspirated from the manometer will move away from the needle and the valve close earlier with each successive expiration, until after a few respirations it will remain closed during the whole of the expiratory period. The pressure[2] then recorded will correspond to the lowest which is reached during inspiration; in effect the manometer will become a minimum pressure manometer.

This, then, is the train of events which will necessarily follow an attempt to induce pneumothorax for the first time, unless the operator by his manipulations brings about other conditions which prevent valve action and allow respiratory movements to be communicated to the manometer. In other words, the valve action of the lung will prevent the recording of the intrapleural pressures, unless the operator introduces into the pleural cavity more gas than that which is aspirated from the apparatus. There is only one source from which the necessary additional gas can come. It must obviously be drawn in from the alveoli through punctures made into the lung.

This is confirmed by the fact that I had distinct evidence of the establishment of "spontaneous" pneumothorax in a case where I had abandoned the attempt to induce "artificial" pneumothorax and had withdrawn my needle without allowing any gas to pass in from the reservoir. Again a radiograph of the chest taken after a first operation usually shows evidence of more gas in the pleural cavity than has been introduced from the reservoir. While it is a common experience of those using the direct method, that gas can be detected in the pleural cavity by radiography after 200 or 300 c.c. have been introduced, it is our experience since we have adopted the indirect method, a method which, as will be shown below, makes it possible to take records of the intrapleural pressures without first puncturing the lung, that it is rarely possible to detect gas in the pleural cavity until considerably more than 300 or 400 c.c. have been introduced. In point of fact after the change of method was adopted in this hospital, Dr. G. H. Orton, to whom I am indebted for all my X-ray records, found it difficult to believe that such large quantities as 300 or 400 c.c. had been introduced in these cases until he had seen the method in operation.

When we ask ourselves in this connexion under what conditions gas in the pleural cavity would be demonstrable by radiography, we see that its detection would be dependent on the fulfilment of the following conditions: (1) There would have to be established between the lung and the chest-wall a considerable gap through which rays would pass without meeting any obstacle; and (2) the margin of the lung would have to be dense enough to cast a well-defined shadow on the screen. Here attention may be called to the fact that when the lung is still almost normally dilated the shadow cast by its margin is more or less indefinite, but when, as with a large pneumothorax, it becomes retracted, or when it is consolidated, many more rays are interrupted by it, and thus the margin thrown on the screen becomes better defined. Now inasmuch as the gas in a pneumothorax will, unless it becomes localised, tend to spread out as a thin layer, it is unlikely that the introduction of 400 c.c. will cause the development of a sufficiently wide gap, and also unlikely that it will at the same time cause enough retraction of the lung to show up the margin clearly in profile. And, further, it must be remembered in this connexion that where the rays have to pass through one and the same amount of lung substance and one and the same amount of gas it makes no difference to the picture whether that gas is outside or enclosed in the lung.

Thus it would seem that radiographic evidence of gas in the chest could hardly be obtained after the introduction of so small a quantity of gas as 200 or 300 c.c., and we have justification for the conclusion that radiographic demonstration of a pneumothorax after the introduction of such a quantity of gas is achieved only by this being largely supplemented by leakage from the lung.

I will now pass on to the consideration of the indirect method. This method enables us to obtain a record of the respiratory movements and of the intrapleural pressures by the aid of gas supplied from the reservoir instead of from the punctured lung; also to obtain an uninterrupted record because the continuous flow of gas from the reservoir prevents any valve action.

The essential features of the apparatus by means of which this can be achieved will be understood from the following description. The gas in its passage from the reservoir to the pleural cavity encounters two resistances, the adjustable throttle and the needle. Before gas passes through the throttle its pressure (see Fig. 1, P_1) is recorded by the manometer next to the reservoir, and this will be the reservoir pressure; then again, after the gas has passed through the throttle, and before it reaches the needle, its pressure, which has now fallen, is again recorded, this time by the manometer next to the needle. It will be appreciated that so long as this "intermediate" pressure is maintained above the intrapleural pressure, gas flows into the pleural cavity, and the valve action cannot be called into play. Also that when the respiratory movements are taking place, corresponding oscillations will be produced in the manometer next to the needle, but not in the other, because this will continue to register the reservoir pressure. Moreover, from the relation between the reservoir pressure and the mean intermediate pressure given by the "reservoir" and "intermediate" manometers respectively, we can, as I shall show, readily estimate the mean intrapleural pressure, provided always we have at the outset adjusted the throttle so that its resistance bears a known ratio to that of the needle. (Hereafter the mean of the intermediate pressure, which is a fluctuating pressure, will be spoken of as the "intermediate pressure" (P_2). Likewise the mean of the intrapleural pressure as the "intrapleural pressure" (P_3), and the mean readings of the manometers as "the readings.")

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[1] THE LANCET, July 5th, 1913, p. 18. On the Possibility of Achieving by Partial Pneumothorax the Advantages of Complete Pneumothorax.

[2] This pressure is usually much lower than the lower limit recorded when the oscillations are not interfered with by the valve action. The reason for this will be understood when we remember that the negative pressure is due, not only to the elastic tension of the lung, but also to such passive resistances as are called into play only when the inspiratory muscles are acting. The existence of these passive resistances will be best appreciated when we recall to mind conditions in which they are considerably increased. For example, very considerable resistance to inspiration is developed when the lung becomes less expansile, as in the case of congestion or consolidation, or, again, when in connexion with an extensive pneumothorax the expansile lung resists expansion on account of the alveolar walls becoming sealed up. Now such passive resistances called into play at the outset of the movement fall off toward the end when the muscular effort ceases, and then the negative pressure becomes wholly due to the elastic tension. It is therefore explicable that the intrapleural pressure should be lowest when this passive resistance is great; that is, before the end of inspiration and before the manometer which necessarily lags has time to record it. On the other hand, when the valve action makes it impossible for the manometer pressure to rise, the absolute minimum pressure only will ultimately be recorded.

FIG. 1.

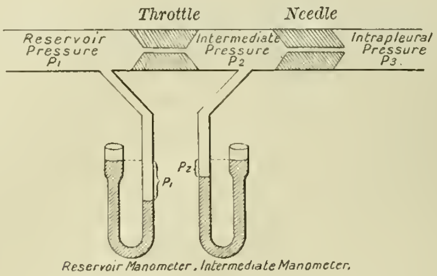

Throttle
Needle
Reservoir Pressure P1
Intermediate Pressure P2
Intrapleural Pressure P3.
P2
P1
Reservoir Manometer. Intermediate Manometer.

Diagram showing the scheme of the apparatus.

The relation which subsists between P_1, P_2, and P_3, will depend on the fact that the ratio of the pressure which is driving gas through the throttle to that which is driving gas through the needle is equal to the ratio of the resistance of the throttle to that of the needle (the resistance ratio, r). Now the pressure which is driving gas through the throttle is the difference between the pressures above and below—that is, the difference between the reservoir and the intermediate pressures ($P_1–P_2$). Likewise, the pressure which is driving gas through the needle is the difference between the intermediate and the intrapleural pressures ($P_2–P_3$). Hence the ratio of the differences $\frac{(P_1-P_2)}{(P_2-P_3)}$ is equal to the resistance ratio (r)—i.e.:—

$$r = \frac{P_1 - P_2}{P_2 - P_3} \quad \text{.............................} \quad \text{(i.)}$$

$$\text{and} \quad P_2 - P_3 = \frac{P_1 - P_2}{r} \quad \text{.............................} \quad \text{(ii.)}$$

—i.e., the difference between the intermediate and intrapleural pressures ($P_2 - P_3$) is obtained by dividing the difference between the reservoir and the intermediate pressures ($P_1 - P_2$) by the resistance ratio. From this it will be seen that the intrapleural pressure is given by the formula—

$$P_3 = P_2 - \frac{P_1 - P_2}{r} \quad \text{.........................} \quad \text{(iii.)}$$

—i.e., the intrapleural pressure is obtained by subtracting from the intermediate the difference between the reservoir and the intermediate pressures divided by the resistance ratio. Again, it will be seen that if the needle opens into the atmosphere the pressure P_3 is zero, and from formula i. we have—

$$r = \frac{P_1 - P_2}{P_2}$$

$$\text{or} \quad r = \frac{P_1}{P_2} - 1 \quad \text{.............................} \quad \text{(iv.)}$$

—i.e., the resistance ratio can be calculated when the needle is in the air by dividing the reservoir reading by the intermediate and subtracting unity. If the needle is in the pleural cavity and we do not know the resistance ratio, we may obtain it from readings given for two positions of the water bottle (*vide infra*). Thus, if P'_1 and P'_2 are second readings of the manometers—

$$P_3 = P_2 - \frac{P_1 - P_2}{r} = P'_2 - \frac{P'_1 - P'_2}{r}$$

$$\text{and} \quad P_2 - P'_2 = \frac{1}{r}\left\{(P_1 - P_2) - (P'_1 - P'_2)\right\}$$

$$= \frac{1}{r}\left\{(P_1 - P'_1) - (P_2 - P'_2)\right\}$$

$$r = \left\{\frac{P_1 - P'_1}{P_2 - P'_2}\right\} - 1 \quad \text{.........................} \quad \text{(v.)}$$

—i.e., the resistance ratio is obtained by dividing the difference between two reservoir pressures by the difference between corresponding intermediate pressures and subtracting unity.

Having described the essential features of the indirect method, I will point out that, as compared with the direct method, it has also the following very great advantages. (*a*) A mere glance at the manometers tells us at once whether gas is flowing into the chest. Gas is flowing in as long as the intermediate manometer indicates a lower pressure than the reservoir manometer, and it has ceased to flow in when they indicate the same pressure. On the other hand, it will be remembered that in the case of the direct method, before we can be sure that gas is actually passing into the chest we have to note the level of the water in the reservoir, and then to wait, often for a long time, to see whether there is a change in that level. (*b*) It is no longer necessary, as is the case with the direct method, to clamp off the reservoir and suspend operations every time we wish either to verify the position of the needle by obtaining manometric oscillations or to take a reading of the intrapleural pressure. (*c*) We avoid the risk of fluid being sucked back into the needle when the manometer pressure sinks below the intrapleural. Such an accident might easily cause permanent and complete blockage of the needle.

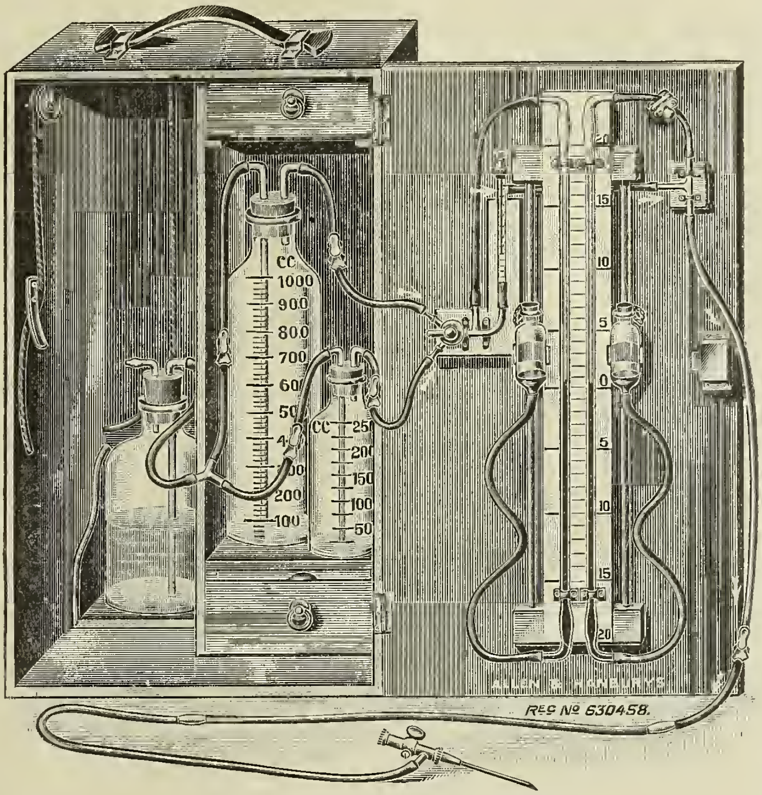
The Apparatus.

I will now describe the apparatus which has been devised by me for the application of the indirect method, and made for me by Messrs. Allen and Hanburys. It will be seen from Fig. 2 that the component parts are contained in a box, and include the following: (1) the water bottle; (2) two graduated glass cylinders which act as reservoirs—the large for nitrogen and the small for oxygen; (3) a three-way tap; (4) the throttle; (5) two manometers; (6) various connecting tubes; and (7) the needle.

We have in the left compartment of the box, standing in a cage whose height can be adjusted by a string passing over a pulley, the water bottle from which water can be siphoned across into either the oxygen or the nitrogen reservoir which stand in the right-hand compartment. According as the three-way tap is adjusted oxygen or nitrogen is driven through the system of tubes and out through the needle. As gas passes onwards from the tap it communicates first by means of a lateral branch of the tube with the left-hand or reservoir manometer; it then passes through the throttle, which is presently to be described. It now passes behind the manometers, and finally, after communicating by a branch with the right-hand or intermediate manometer, courses through a flexible tube provided with a clamp, the "outlet" clamp, and out by the needle.

The manometers are constructed on a U-tube pattern, the fluid used being methylated spirit coloured by an anilin dye. The limb which communicates with the gas stream consists of an upright glass tube of 0·25 cm. bore, provided at its ends with safety bulbs and fixed against a centimetre scale, while the other limb consists of a flexible tube ending in a reservoir which opens to the air and can be moved up and down on a supporting rod. The calibre of the reservoir is made so large compared with that of the upright tube that when fluid passes from one into the other the change of level in the wider is negligible compared with that in the narrower. When for atmospheric pressure the level of the fluid is adjusted to zero on the scale, the working range of pressure is from 20 cm. to −20 cm., but we may record a pressure of 35 cm. by raising, −35 cm. by lowering, the manometer reservoirs. With a view to damping excessive oscillations in the intermediate manometer when an average reading is required, the rubber tube which connects the manometer with the gas stream is provided with a screw clamp. This works upon a pledget of cotton wool, which is placed inside the tube and prevents the communication between the manometer and the gas stream being completely cut off.

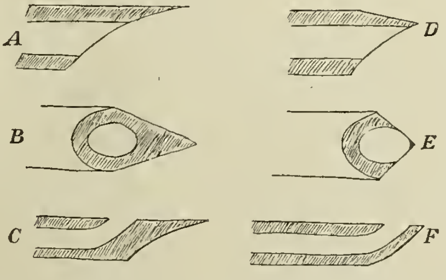
FIG. 2.



Apparatus for the induction of pneumothorax.

We may now return to the adjustable throttle which is introduced into the path of the gas between the two manometers. This consists of: (1) An outer vertical glass tube about 10 cm. long, with a lateral branch near its upper end; (2) an inner tapering tube of not more than 0·2 cm. bore, fused by the rim of its wider upper end to the inner surface of the outer tube just below the lateral branch; and (3) a plunger in the form of a piston rod of uniform gauge which passes down through an air-tight cover in the upper end of the outer tube into the inner tube. The obstruction which the throttle offers to the flow of gas is determined by the distance to which the plunger is driven down into the inner tube, this being recorded by the aid of a divided scale inscribed on the wall of the outer tube.

FIG. 3.



The account of the apparatus may be concluded by describing the needle. This differs from the ones in general use in the following respect. While in the ordinary needle (Fig. 3, A and B) the actual point is, by the fact that the dorsal wall is cut across obliquely from within outwards, carried well beyond the orifice, in the one I use (Fig. 3, D and E) the point does not project appreciably above the upper edge of the orifice. This is arranged by grinding the dorsal aspect so as to give, instead of a single ventral facet of the ordinary needle, a trocar whose facets would be the truncated ventral facet and two smaller latero-dorsal facets. If it is thought better to employ a lateral-eyed needle, I would suggest the form shown in Fig. 3, F, instead of the usual form shown in Fig. 3, C.

Directions.

First adjust the manometers. To do this turn off the three-way tap so as to shut off communication with the gas reservoirs. Then draw up the plunger of the throttle and open the outlet clamp. Now adjust the manometer reservoirs so that the levels of the fluid in the straight limbs stand at zero on the scale. (Readings above this will represent negative and readings below positive pressures.)

Next we have to fill the reservoirs with gas. To do this first disconnect the reservoirs from the three-way tap, and having filled the water bottle with water, allow this to syphon across so as to fill up the reservoirs. Take the tube which previously connected the large reservoir with the three-way tap and fit it to a nitrogen cylinder. Let gas pass in until all the water is driven back into the bottle. Then re-establish the connexion between the nitrogen reservoir and the three-way tap. Go through the same procedure with the small reservoir, using here oxygen instead of nitrogen. Now replace the air in the rest of the apparatus by oxygen. To do this open the three-way tap to oxygen, raise the water bottle and allow some of the gas to flow through the needle. Then apply the outlet clamp and let gas now bubble through the manometers. Finally, lower the water bottle so that fluid runs back again into the straight limbs.

The throttle has now to be adjusted. For this purpose raise the water bottle until the reservoir manometer reading is about 12 cm. Then adjust the plunger so that the reading of the reservoir manometer is three times that of the intermediate. By reference to formula iv. it will be seen that the ratio of the resistance of the throttle to that of the needle is now 2.

We are now ready to insert the needle into the chest. This is done as follows. First adjust the water bottle so that the reservoir pressure stands between 0 and 1. Oxygen now flows very slowly through the needle. Then perform paracentesis in the same way as is done when the direct method is used. From the moment the needle enters the tissues, the manometers must be unremittingly watched for the indications which the movements in them afford. By means of these we must be able to recognise whether gas is flowing, and if it is to estimate its approximate rate; also, we must be able in the case where there is no flow to find out what prevents it, and in the case where gas is flowing to determine the position of the eye of the needle.

Concerning the flow, it has already been pointed out that there is none when the two manometers indicate the same pressure—that is, when the fluid in both stands at the same level. Again, there is a flow when the level of fluid in the intermediate is higher than that in the reservoir manometer, and the rate of flow is proportional to the difference between these levels. In the case where there is no escape of gas the obstruction may be due to either of two causes: (1) the needle may be embedded in tissue; and (2) the eye of the needle may be blocked. To distinguish between these, shut off the reservoir and forcibly compress the connecting tube so as to drive gas toward the needle. If the needle is patent gas will now be driven into the tissues and consequently a negative pressure, which will be indicated by the manometers, developed in the tube when it is released. If, on the other hand, the eye of the needle is blocked, our manipulations will leave the fluid in the manometers unaffected.

In the case where gas is flowing into the chest we can determine the bearings of the needle only by keeping watch on the mean pressure of gas at the orifice. If the eye of the needle is safely lodged in the pleural cavity, and there is already sufficient gas present to prevent any valve action, we may obtain this pressure by the direct method by closing down the throttle and reading off the intermediate manometer. The mean of the readings will then indicate the mean intrapleural pressure. If, however, there is a possibility of the valve action taking place we must apply the indirect method. The procedure will then depend on whether the needle is quite patent or has become partially obstructed. Such an obstruction will be recognised by raising the water bottle, and noting whether the rise which this produces in the reservoir pressure is as much as three times that produced in the intermediate. If it is as much the needle is quite clear, but if it is less the needle has become obstructed (cf. formula v.).

In the case where the needle is quite clear the pressure at the eye is obtained as follows. Take the reading of the reservoir manometer, then the reading of the intermediate, and from the second reading subtract half the difference between the first and the second (*vide* formula iii.). Thus, if 8 and -2 were the readings, the difference would be 10 and the intrapleural pressure

$$-2 - \frac{10}{2} = -2 - 5 = -7.$$

In the case where the needle has become partially blocked it becomes necessary to estimate the altered resistance ratio. This is done as follows. Take the readings of the manometers for two positions of the water bottle. Divide the difference between the reservoir readings by the difference between the intermediate readings and subtract unity (*vide* formula v.). Example:—

	Reservoir pressure.	Intermediate pressure.
First readings	12	3
Second readings	2	−1
Differences	10	4

Resistance ratio ... ... $\frac{10}{4} - 1 = \frac{6}{4} = \frac{3}{2}.$

In order now to get the pressure at the eye of the needle proceed as follows. Take the readings of the two manometers and divide their difference by the new resistance ratio obtained above. Now take this result and subtract it from the reading of the intermediate manometer. This gives us the pressure at the eye of the needle (*vide* formula iii.). For example, we may take the readings given above for estimating the resistance ratio. Thus, taking the readings 12 and 3, the difference is 9, and this divided by the resistance ratio is 6. Subtracting this 6 from the reading of the intermediate manometer 3, we have -3 for the required pressure. When we use the other readings 2 and -1 and proceed as before we obtain the equation $-1 - \frac{2-(-1)}{3/2} = -3$. This will be seen to be the same result as that obtained from the first readings.

It will be noted that if the needle becomes partially obstructed, and we do not in estimating the pressure take into account the change in the resistance ratio, the rule would give us too high a value for the pressure. Thus in the examples above, where the first readings were 12 and 3 and the others 2 and -1, the estimated pressure, assuming the resistance was still 2, would be in the first case $3 - 9/2 = -1\frac{1}{2}$ instead of -3. In the second case $-1 - 3/2 = -2\frac{1}{2}$ instead of -3.

These examples show that the lower the reservoir pressure the smaller the error, and hence if we ensure this pressure being less than atmospheric pressure, we may when estimating the pressure at the eye of the needle neglect any slight block.

Having obtained records of the mean pressure at the eye of the needle, we may now deduce the position according to the following rules: 1. When the mean pressure remains constant and does not exceed -5 cm., the needle is in the pleural cavity. 2. When the mean pressure stands at the outset at -5 cm., and afterwards rises rapidly, the needle is in a pocket bound down by adhesions. 3. When the mean pressure is approximately equal to atmospheric pressure, the needle is in the lung. 4. When the values of the pressure do not conform to any of the above types, the needle is probably misplaced. In these circumstances the gas must be immediately cut off.

When we have inferred from the estimations of the pressure at the eye of the needle and the oscillations in the intermediate manometer that the needle is safely lodged in the pleural cavity, and that in consequence we need no longer fear accidents from the introduction of nitrogen gas, turn on this gas and allow it to flow. As the level of the water in the reservoir rises, raise the water bottle so as to maintain the reservoir pressure. All the time that the gas is flowing, the manometers must be carefully watched so that any irregularities shall be at once noticed. The question of how much gas shall be introduced is of course a matter for the discretion of the operator, but in cases in which it is desired only to maintain a partial pneumothorax I would suggest leaving off while the intrapleural pressure is still negative.

These instructions will have to be modified in the case where gas is introduced into the pleural cavity to replace a pleural effusion. In these circumstances it is necessary to connect the needle with an aspirating apparatus, and this is effected by means of a socket on the needle holder. The needle one would employ should be considerably larger than that used for the operation just described, and its resistance correspondingly less. On the other hand, the throttle resistance should be about the same. In such a case the resistance ratio would be so great that the intermediate pressure would be practically the same as the intrapleural. Before performing paracentesis connect up the apparatus with the aspirating pump and apply the outlet clamp. Then raise the reservoir pressure above any likely intrapleural pressure. This will prevent fluid passing into the connecting tube. Now introduce the needle into the pleural cavity and aspirate some fluid. This done, shut off the aspirator and release the outlet clamp. Gas will then commence to flow and the intrapleural pressure can be estimated. Now regulate the reservoir pressure so that it is not more than 5 cm. above the intermediate. By alternately aspirating fluid and allowing gas to flow, we may ultimately leave the pleural cavity containing a known quantity of gas at a suitable negative pressure without subjecting the lung to the rapid distension which would occur with aspiration only.

Before concluding this paper I will describe what has been common and striking experience in using this apparatus, experience which seems to me to put beyond question the points which have been already emphasised in connexion with the recording of the intrapleural pressures by the direct method.

I have frequently passed the needle into the chest, have satisfied myself by estimations of the intrapleural pressure and its variations that the eye of the needle was safely lodged in the pleural cavity, have passed quantities of gas varying from a few c.c. to over 100 c.c., and have then found, on cutting off the supply of gas from the reservoir and so applying the direct method, that the respiratory oscillations gradually became smaller and smaller and finally stopped, the pressure recorded by the manometer sinking to a minimum. In some of these cases, on the patient taking a deeper breath than usual, the recorded pressure has fallen still lower. Again, when the gas has been once more turned on, it has been the rule for the oscillations to recommence, but in some cases in which they have failed to appear I have afterwards found the needle blocked.

Although the conclusions to be drawn from these observations have been already embodied in the earlier part of this paper they are so important that I will restate them. They are as follows: 1. Gas introduced into the pleural cavity will often move away from the needle. 2. If it moves away and gas does not flow in from the reservoir, the valve action of the lung comes into play, cutting off the manometer from the pleural cavity. 3. If the direct method comes into application in such cases oscillations of the manometer are obtained by the aid of gas which continuously leaks out from punctures made into the lung.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A NOTE ON A CASE OF RATTLESNAKE BITE.

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BITES of snakes, other than adders, are so rare in this country that the following instance is of interest.

On June 26th, at noon, a keeper, aged 20, at the Zoological Society's Gardens, while transferring a rattlesnake just arrived from Texas from its travelling box to a cage, incautiously inserted his fingers to displace the glass front. In an instant the snake struck at his hand, inflicting superficial wounds on the first and second fingers immediately below the nail, drawing blood. The curator at once tied ligatures round the two fingers and a handkerchief about the upper part of the forearm, and then made incisions across the dorsum of the fingers on the proximal side of the wounds. The patient was placed on a mattress and kept quiet all day. He felt faint and weak but thought he might have been able to walk if necessary. Solid potassium permanganate was applied to the bites and incised wounds within a few minutes. At about 7 P.M. a general stiffening of the limbs occurred, with swelling in the throat, causing difficulty in swallowing and some dyspnœa. During the night vision became dimmed. The bowels and bladder were relieved. Prostration was more marked, and attempts were made to rouse the patient. Pain occurred in the back and on movement of the limbs. There was very little sleep, but no headache or vomiting.

On the morning of the following day the patient felt better, but experienced double vision and the arm was painful, aching up to the shoulder. Both arms were flexed across the body, and attempts to extend them caused pain. There was some rigidity of the neck.

On admission to the Middlesex Hospital about midday the man seemed languid and lay on his back with the eyes half open. His face was white and perspiring, and there were some swelling and drooping of the eyelids. Pulse, 120; respiration, 28; temperature, 98° F. The right arm was swollen, red, and painful; there was some sloughing about the cuts on the fingers which were blackened by the permanganate, and a gland could be detected in the axilla. The swelling extended about three inches above the elbow. Dimness of vision was still complained of, with diplopia on directing the eyes to any object. The left pupil was slightly smaller than the right, though both reacted to light and accommodation. Urine passed at 2 P.M. was very dark brown in colour, resembling porter, and exhibited a cloudy deposit on standing. There was a decided blood reaction with guaiacum and a considerable amount of albumin, but very few corpuscles were present in the deposit (hæmoglobinuria). Pupil and knee reflexes were present. Heat, cold, and touch sensations were normal. Half an ounce of brandy was given every four hours, and 10 oz. of saline enemata every six hours. The arm was immersed in creolin ʒi. to the pint for four hours and subsequently painted with ichthyol for an hour. Calomel gr. ii. and a saline purge were administered, and a pillow was placed in the small of the back to relieve aching.

On the 28th the urine retained the same characters, there was less œdema of the eyelids, and the swelling of the arm was subsiding. Vision was still affected so that the patient could not read. The urine 48 hours after admission was pale and clear with only a trace of albumin and no blood.

On the 29th the vision was normal. The swelling of the forearm, which never pitted, had almost completely subsided, and numbness had succeeded to tenderness. A slight petechial eruption was present. Two days later the patient was allowed to get up and he left on July 4th for the convalescent home completely recovered.

It is apparent that this patient did not receive a full dose of the venom, the wounds being more of the nature of scratches than punctures, and the prompt measures adopted further lessened absorption. Enough, however, entered the system to produce characteristic symptoms, expressed in the local swelling, hæmolysis, and temporary disturbance of the nervous system. The really critical period was passed before the patient came under observation at the hospital, as effective bites usually prove fatal in about 12 minutes. The weather was tropical at the time, but the pulse and respiration, 120 and 28 respectively, subsided to 88 and 24 in three days, though the temperature of the ward was rising continuously, reaching 80° F.

Wimpole street, W.

UMBILICAL FISTULA.

BY W. S. THACKER, M.D. T.C.D., F.R.C.S. EDIN.

As the presence of two ducts signifying the persistence of the urachus is remarkable, and as an umbilical calculus is also a surgical curiosity, I think it worth while recording the following case.

The patient, a student aged 24, was admitted to the Mission Hospital of the Union Medical College, Peking, on April 23rd, 1914. Two months before admission he noticed a slight watery discharge from the umbilicus and a month later the umbilicus became inflamed. On admission the skin about the umbilicus was red and swollen and a fœtid discharge was present. On April 24th I operated. I excised the inflamed areas of skin and then discovered a soft, evidently phosphatic, calculus. The removal of the inflammatory tissue and the discovery of the cause of the fistula necessitated the opening of the abdomen. I then discovered on the left side of the wound a fistula, through which I passed a probe into the bladder. This I closed and anchored to the left rectus sheath. On further examination I found a similar fistula on the right side. This I treated similarly. I closed the wound, inserting a rubber drain for 24 hours and leaving a catheter in the bladder for a similar time. The wound healed by first intention, and the patient left hospital on May 9th.

Peking.

NOTE ON AN UNUSUAL EFFECT OF NEO-SALVARSAN ON THE SKIN.

BY J. H. SHELDON, M.B. LOND., &c.,
DISTRICT MEDICAL OFFICER, BURMA RAILWAYS.

A MADRASSI adult male, who had contracted syphilis in November, 1912, came to the hospital of the Burma Railways, Insein, in October, 1913, suffering from intense general headache of from four to five months' duration, and right ptosis of two months' duration. His tongue was filthy, his bowels constipated, and his mental condition stupid. There was no vomiting or any skin lesion. He received neosalvarsan (0·9 grm.) intravenously on Oct. 12th, and a second similar dose on the 26th; no reaction occurred on either occasion. At this latter date his headache was nearly gone, and he was able to open his right eye almost completely. He received seven inunctions of mercury between Oct. 27th and Nov. 10th, on which day he left hospital.

The patient was not seen again until Nov. 30th, when he turned up at the out-patient department, perfectly well as far as his headache and paralysis were concerned, but as regards his skin in the following singular and distressing condition. The skin covering of the whole body, scalp, trunk, limbs, and even penis and scrotum, was swollen, thickened, and hard, and pitted only slightly on pressure. Fissures were present at practically every fold and flexure—ears, neck, axillæ, elbows, wrists, abdominal wall, groins, knees, and ankles. The entire surface was covered with fine scales, which were raised in clouds by the brushing of the hand over the chest or abdomen. The palms and soles were peeling. The itching was intense. The hair was very dry and brittle, but there was no alopecia. There were no lesions of the mouth or pharynx and no fever; the tongue was perfectly clean and the general condition excellent. The conjunctivæ were injected. He was detained in hospital, put on to mercury, and given sweet oil for inunction into the skin. At the time of his discharge, 24 days later, the skin had almost regained its normal condition, though that of the face and scalp, which he had been unwilling to anoint, was still dry, coarse, and scaly.

The thickening and hardening of the skin, the fissures, and the intense itching sufficiently distinguish the disease from pityriasis rubra, and it seems probable that the condition was an arsenical dermatitis and hyperkeratosis due to the two doses of neosalvarsan.

Insein, Burma.

CORNWALL COUNTY ASYLUM.—At the last meeting of the Cornwall county council the resignation was accepted with much regret of Mr. Henry Albert Layton, M.R.C.S. Eng., L.R.C.P., L.M. Edin., the medical superintendent of the Cornwall County Asylum at Bodmin. Mr. Layton was formerly senior assistant medical officer, and has been connected with the institution for the past 31 years.

Reviews and Notices of Books.

Practice and Problem in Abdominal Surgery.

By A. ERNEST MAYLARD, B.S. Lond., Surgeon to the Victoria Infirmary, Glasgow. With 39 illustrations. London: J. and A. Churchill. 1913. Pp. 388. Price 8*s.* 6*d.* net.

THIS is a very interesting work, dealing as it does with many important problems in connexion with abdominal surgery, and it deserves the careful study of all surgeons who operate on the abdomen. The author draws attention in his preface to the difference between the abdominal surgery of the year 1880, when he was senior house surgeon at Guy's Hospital, and that of the present day. He mentions that in 1880 at Guy's there were only 23 abdominal operations in the whole hospital, of which two were for intestinal obstruction, and both of these were fatal; there were three gastrostomies, all successful, and 18 ovariotomies, of which six were fatal. At the present day an abdominal operation excites very little attention, for these operations are now so frequently performed that there must be some special point of interest to attract to it any notice.

To form a correct appreciation of this work it is necessary to understand its nature. It is not, and it is not intended to be, a treatise on abdominal surgery; it contains no systematic description of abdominal operations, but it does contain the expression of the personal experience of a surgeon who for more than 30 years has devoted his chief attention to this branch of surgery. And therein lies its value, for the personal experience of a surgeon such as Mr. Maylard is worth many volumes of the compilations of the opinions of others. The mere names of the chapters will indicate the wide range of subjects discussed in this book. We have chapters on abdominal pain, on which Mr. Maylard has written more fully elsewhere, on problems in prognosis, on abdominal incisions, on peritoneal adhesions, on pyloric obstruction, and on general peritonitis. Mr. Maylard is the chief advocate of the transverse abdominal incision. The attentive reader will find much to repay perusal; he will glean here and there hints and suggestions of great value in his work, and though he may not feel inclined to agree with all the views expressed, he will surely recognise that they are the opinions of one who knows his subject well, and that they are therefore worthy of careful consideration.

Die Gonorrhoë des Wiebes für die Praxis dargestellt.

Von Professor Dr. F. FROMME. Berlin: S. Karger. 1914. Pp. 56. Price 2 marks.

IT is of comparatively recent years that our knowledge of the important part played by the gonococcus in the causation of diseases of women has been acquired. The recognition of gonorrhœa in man is a comparatively easy matter; not so in woman. There are so many causes of a purulent discharge from the genital tract in this sex that it is only the certain recognition of the gonococcus which enables us to make a correct diagnosis. Even now the exact frequency of the disease in women is far from certain. The gonococcus soon disappears, and cannot be found in many cases which from the clinical history are almost certainly cases of venereal infection. Noeggerath originally was of the opinion that gonorrhœa was as frequent in women as in men, and as he estimated its frequency in the former sex as high as 80 per cent. he condemned a very large number of women as victims of this disease.

In spite of the difficulties which surround any attempt to determine this question with certainty it is, however, beyond doubt that the percentage of incidence in women is not nearly so high as this. In gynæcological and obstetrical clinics the frequency of the disease is probably not more than some 25 per cent., and it must be remembered that this frequency does not hold good for the female population as a whole. The opportunities for acquiring venereal disease are more widespread in the case of young men than of young women, and it is probable that a case of gonorrhœa occurs in the female only once for every five or six cases in the male. It is fortunate that this is so, because the ultimate dangers of the disease in the two sexes cannot be compared. An attack of gonorrhœa in the male can usually with efficient treatment be quickly and certainly cured however disastrous the sequelæ where treatment has been neglected; in the female this is not so. Indeed, as has been remarked, "in women all attacks of gonorrhœa are curable except the first," and it is no exaggeration to say that in the majority of the cases the patient is never completely cured. Not only is the local infection often difficult to eradicate in the female, but the ultimate sequelæ in the shape of chronic cervicitis, bartholinitis, infection of the tubes and peritoneum, are often extremely difficult to treat, and in many cases cannot be cured with certainty. Indeed, if a woman is to acquire venereal disease at all it would be better for her, in the majority of instances, to acquire syphilis rather than gonorrhœa. The former is easy to recognise and easy to treat, the latter is difficult to recognise and difficult to treat.

Any attempt to place before the student and practitioner the main facts with regard to gonorrhœa and the best methods of attacking the disease is to be welcomed, and it is a pity that this excellent little work of Professor Fromme is written in German and not in English. In it he gives a very clear and practical account of the symptoms, course, diagnosis, and treatment of gonorrhœa in the female. It will certainly prove of great utility to those who are able to read German.

The Practice of Medicine.

By FREDERICK TAYLOR, M.D. Lond. Tenth edition. London: J. and A, Churchill. 1914. Pp. 1192, with 71 figures and 12 skiagraphic plates. Price 18*s.* net.

DR. Frederick Taylor's admirable text-book for students and practitioners, "The Practice of Medicine," has reached its tenth edition. It fully maintains the high standard of excellence set by the previous editions of the work. There has been some rearrangement of the way in which the infectious diseases have been grouped at the beginning of the volume; and several rare, but interesting, forms of infectious disease have been added, such as rat-bite fever sand-fly fever, and psittacosis. Diseases of the glands with internal secretions have been separated from the diseases of the blood and blood-forming organs, and now receive consideration in a separate section of the book. Several other notable disorders are introduced into the volume for the first time, such as pneumonia due to Friedländer's bacillus—the microbe so often associated with bronchiectasis and with pulmonary conditions that closely simulate tuberculosis in many particulars

—congenital coarctation of the aorta, obesity, and various diseases of the skin. Room has also been found for a notice of Ohm's interesting attempt to obtain graphic records of the heart sounds and pulse tracings simultaneously, which was described at the International Congress of Medicine held in London last year.

To praise this text-book seems almost needless; since its first edition came out nearly 25 years ago it has been the familiar friend of many successive generations of medical students, and its several editions have always presented its readers with a sound and trustworthy account of the medical practice of the day. The commoner diseases receive the fullest consideration, while the rarities of medicine are given brief but adequate notices. In this way Dr. Taylor's volume continues to afford a very happy contrast to the many medical text-books that appear to have been written for what may be called examination purposes, and give more space to a rarity like syringomyelia than to a commonplace of medical practice such as rickets.

A few errors that have crept into the text may be noted in order that they may be removed in the issues inevitably to follow: the name "Médin" on p. 135 should be Medin; the description of the electrocardiograph (p. 607) is erroneous in some particulars; the hybrid term "polyglandular" on p. 923 should surely be replaced by "pluriglandular"; and "goître" might well be now spelt "goitre" throughout, in accordance with modern usage.

The Surgery of the Stomach: A Handbook of Diagnosis and Treatment.

By HERBERT J. PATERSON, M.A., M.C., M.B. Cantab., F.R.C.S. Eng. New and revised edition, with plates. London: James Nisbet and Co., Limited. 1914. Pp. 342. Price 15*s.* net.

Mr. Paterson has written so well on the surgery of the stomach that we are not surprised that a new edition of his work has been called for only a short time after the appearance of the previous issue. The time that has elapsed has not been sufficiently long to make any startling change in the surgery of the stomach, but the author has been enabled to make many alterations in his book, If most of them are not of great importance, this is a proof of original foresight on his part, and it is worth while to notice some of them.

In the earlier edition the operation of gastro-jejunostomy was illustrated with a number of photographs; in the present edition the photographs have been reproduced in pairs for use stereoscopically, and when the stereoscope is employed the details are much more clearly visible. A further change has been the introduction of a number of plates illustrating the value of radiographs in the diagnosis of abdominal lesions. The plates have been made from radiographs prepared by Dr. A. C. Jordan, who has had a very large experience of X ray work of the abdomen.

Mr. Paterson is known to hold the opinion that except in cases of real pyloric obstruction the benefit of the operation of gastro-jejunostomy is due to physiological changes, rather than to the mere formation of a direct passage from the stomach to the jejunum. Some further investigations which he has made have been embodied in the chapter on the physiological effects of the operation. Most surgeons believe that the operation is purely mechanical, but it is not easy on this theory to account for the benefit of the operation in cases where there is no pyloric stenosis, for we know from the evidence provided by radiography that in many cases the food continues to leave the stomach by the pylorus even when the operation has conferred great benefit on the patient. Mr. Paterson holds that the presence of bile in the stomach after the operation is almost if not quite the rule, for he has found that in 99 per cent. of the cases there is an increase of the mineral chlorides in the gastric contents, and he believes that this is due to the mineral chlorides of the bile and pancreatic juice, which gain access to the stomach after the operation. In those rare cases in which gastro-jejunostomy has been "undone" he has noted a decrease in the amount of mineral chlorides. These contentions are supported by a series of analyses and there is certainly much to be said for the view. A further striking effect of the operation is a marked diminution of the total acidity of the gastric juice; this the author ascribes partly to the neutralising effect of the bile and pancreatic juice, but partly to a diminution in the amount of gastric juice secreted.

The book is the product of a careful and experienced surgeon and an original thinker, and this new edition will more than maintain the place in surgical literature which was gained by the first edition.

Local Anæsthesia.

By Dr. ARTHUR SCHLESINGER (Berlin). Translated by F. S. ARNOLD, M.B. Oxon. Illustrated. London: William Heinemann (Rebman, Limited). 1914. Pp. 209. Price 5*s.* net.

THIS well-printed, nicely bound little book contains the best exposition of the action of local anæsthetics that we have read. The fact of its being a translation is only evidenced here and there, mainly by the use of expressions such as a "parulis," not commonly employed in ordinary English text-books.

We are interested to see that Dr. Schlesinger does not hold with the belief that cocaine is always harmless when merely painted on mucous surfaces. There is an excellent discussion of Schleich's infiltration method, and the author shows good reason for dissenting from Schleich's explanation of the way in which his process of obtaining analgesia actually attains its object. Dr. Schlesinger is fully alive to the limitations of local anæsthetics. Discussing the use of local methods in head cases he says with much good sense: "It is, however, not everyone who can bring himself to let his skull be chiselled open while he is fully conscious. One of my patients told me that, though he suffered no pain, the sensations of hammering and boring were so horrible that he would much prefer to be put under chloroform." Similarly for almost all abdominal operations Dr. Schlesinger pronounces against local methods. He is opposed, moreover, although he does not advance his reasons, to the "combined anæsthesia" of local and general agents; so presumably Crile's "anoci-association" would not receive his support, although he does not specifically mention this system. For minor surgery generally Dr. Schlesinger recommends conduction anæsthesia by means of novocaine in 1 or 2 per cent. solution, to which he adds suprarenin to the extent of 1 to 4 drops of a 1 in 1000 solution to each 10 c.c. of novocaine solution. There is a curious misprint of infra for supra orbital when anæsthesia of the upper jaw and face is under discussion. Dr. Schlesinger states that inflammatory processes heighten insensibility, particularly of the parietal peritoneum. We wonder whether this is borne out by the general experience of other observers.

We can strongly recommend this book as a guide to the practice of local analgesia.

The Early Diagnosis of Tubercle.

By CLIVE RIVIERE, M.D. Lond., F.R.C.P. Lond., Physician to Out-patients, City of London Hospital for Diseases of the Chest, Victoria Park; Physician, East London Hospital for Children. London: Henry Frowde. 1914. Pp. 260. Price 6*s.*

TOO much stress cannot be laid on the importance of the early diagnosis of tubercle, but in order to arrive at a correct conclusion the greatest care is needed, and considerable experience is required before the necessary technique can be adequately acquired. To arrive at a diagnosis from one symptom or from one sign only is to court disaster, and in each individual case a careful study of all phenomena presenting themselves is absolutely essential.

In the volume now before us Dr. Clive Riviere gives a good description of the various procedures necessary in examining patients—adults and children—in order to ascertain the presence or absence of tuberculous disease, especially of the pulmonary variety. His object has been to present shortly and clearly the points whereby an accurate technique in the various methods may be acquired. He very rightly lays stress on such aspects of the normal as are likely to suggest or simulate disease, and he points out where pitfalls are likely to arise. In many works on diseases of the chest sufficient emphasis has not been laid on the importance of recognising the physiological variations which may occur in the character of the breath sounds, and unless these be recognised errors in diagnosis may easily arise. Dr. Riviere draws attention to these points, and especially to the altered characters that may be apparent beneath the right clavicle. He discusses the diagnostic use of tuberculin at considerable length. We entirely endorse his views that the subcutaneous test should only be employed by those whose special knowledge of this branch of work fits them duly to avoid the dangers and correctly to interpret the results. The value of the temperature chart is also noted, and the significance of the opsonic index is duly considered.

The book is well written, and forms a good manual on the subject of the early diagnosis of tubercle.

Physiologie Normale et Pathologique des Reins.

Par L. AMBARD, Chef de Laboratoire de Chimie de la Clinique des Voies Urinaires à l'Hôpital Necker. Préface de M. le Prof. F. LEGUEU. Paris: F. Gittler. 1914. Pp. 329. Price 15 francs.

THE author points out that this is not a complete treatise on the physiology and pathology of the kidneys, as the title might lead one to suspect—e.g., intentionally he has left out the consideration of the renal secretion in cardiac and febrile disease, while albuminuria is almost entirely omitted. Somewhat less than one-half of the text is taken up with an account of renal physiology. The author, besides numerous observations on man, records many of his experiments and of those of his collaborators on the dog. He points out that the kidneys are really "concentrating" organs. Substances which are found in very small quantities in the blood are excreted in a highly concentrated form in the urine—e.g., urea. He devotes many pages to what he calls the "concentration maxima," each substance having its own maximum under certain conditions. Very elaborate tables and numerous experiments are given to show this for urea, sodium chloride, water, and glucose. The concentration maximum is a function of the quality of the renal parenchyma. But the kidneys have another function; they regulate the limits of excretion. The technical methods used for estimating urea, glucose, and sodium chloride are given. "Débits," or the quantities of any substance excreted in a given time, are next dealt with, and the relation between the amounts of the several urinary constituents, as well as the elimination of such substances as ethylic and methylic alcohol and glycerine. The nervous system is regarded as affecting urinary secretion in addition to its purely vaso-motor effects.

The latter half of the monograph deals with nephritis. First there is nephritis with œdema, and other forms without œdema. There are also mixed forms, and, what is important for the clinician, there is a very careful exposition of the prognosis in the various forms of nephritis, as well as an admirable résumé of the effects on the organism of defective renal activity. The last chapter, on the exploration of the renal functions in surgery, is thoroughly practical, and includes a description of the chief methods to be used by the surgeon—e.g., the elimination of methylene blue, phloridzin glycosuria, cryoscopy of the blood, and experimental polyuria, as well as the concentration maximum of urea.

We can cordially commend the study of this interesting and practical monograph to clinicians and surgeons alike who have to deal with renal disease. It is an admirable clinical and scientific contribution to the study of urology.

The History of St. George's Hospital.

By G. C. PEACHEY. Parts III. and IV. Price 5*s.* Parts V. and VI. Price 5*s.* London: Bemrose and Sons.

AFTER the issue of the first two of the 12 parts in which this history was projected, the health of the author became so seriously impaired that the remaining parts were postponed for a considerable period. Now they have been resumed; and, indeed, the four which have lately been added to the series have appeared two at a time. Parts I. and II.[1] dealt with the general conditions of medical science and the relief of the sick poor in the London of the early eighteenth century, and with the circumstances which led up to the foundation of St. George's in 1733, following the schism at the Westminster Infirmary (now Westminster Hospital). Parts III. to VI. contain a most minute and valuable account of the first 20 years' working of the institution. These sections are packed with interesting details which illustrate very vividly the life and the practice of medicine of the second quarter of the eighteenth century. They include, also, painstaking biographies of all the members of the medical staff who served during that epoch. The labour represented by these accounts of old-time physicians and surgeons has obviously been very great; Mr. Peachey has spared no pains to gather every detail which might throw light upon their careers and has brought an honourable enthusiasm to an onerous task.

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[1] See THE LANCET, June 11th, 1910, p. 1624 (Part I.); and Jan. 21st, 1911, p. 173 (Part II.).

The early admission books of the hospital have been lost beyond all hope of recovery; but, fortunately, a practice prevailed during the first two years of the existence of St. George's of entering in the minute books, not only the names of those who recommended patients for admission, but also the names of the latter, the diagnosis of their diseases, and the results of their treatment. Thus an analysis has been rendered possible of the in-patients treated in 1733–1735. They were 1502 in number, and the list includes consumption, 185 cases; rheumatism, 154; ulcers, 128; intermittent fever (possibly malaria from the Chelsea marshes was one of the diseases thus diagnosed), 124. These were the principal groups; lesser ones were dropsy, 59 cases; palsy, 45; nervous disorders, 40; tumours, 35; rupture, 25; fractures, 19; obstructions, 19; ophthalmia, 18; epilepsy, 22. Two other and very interesting items from this list are scurvy, 47 cases; and "leprous," 13 cases. It is impossible to guess whether these last 60 cases would nowadays be diagnosed as they were then; but even if nine-tenths of them fell into other categories, the residue would still indicate a very different prevalence of those two diseases from that which exists at present. Another noticeable feature is the scarcity of all kinds of tonsillitis and sorethroat. This was evidently not due to any refusal to admit infectious cases, since one case of scarlet fever and one case of chicken-pox are among the 1502; but strange to say not a single case of acute faucial angina (with the exception of the scarlet fever case just mentioned) appears to have been admitted to the hospital, unless the 21 unclassified cases of "pain" included some.

In 1749, we learn, the question of burial-ground accommodation led to the purchase by the hospital trustees of a piece of garden land at Brompton for about £500. Here those who died in the hospital were interred, and here also the widow of the gardener grew vegetables which she supplied to the governors for the use of the patients. This burial ground is of interest in that in 1825 it was sold for the erection of Holy Trinity, Brompton, which with its churchyard occupies the whole of the old St. George's burial ground. Many more instances of the curious and antiquarian lore which fills this history could be quoted, but those who are interested in either the state of the medical profession, or of the management of voluntary charities, or of the details of the history of St. George's during the 20 years following 1733, will do well to read Mr. Peachey's pages for themselves.

LIBRARY TABLE.

Tierische Immunität. By Dr. WERNER ROSENTHAL. Braunschweig: Friedr. Vieweg und Sohn. Pp. x.–330. Price 6.50 marks; bound, 7.20 marks. —This book, which forms Band liii. of Die Wissenschaft Series, is intended not for the specialist but for students of medicine and those practitioners who have not made themselves familiar with the comparatively new subject of immunity. It has been written in a popular style, and the author has been careful to distinguish facts from theories and to point out the direct applications of the work on this subject. Though he has not gone deeply into the question of technique the book has been well brought up to date, and we can say that it carries out the original idea of the author in an able manner.

Festschrift des Institut Medical der Al Hayat Kompagnie in Helouan.—This pamphlet of 130 pages was published recently in connexion with the visit of a medical and scientific expedition sent from Berlin to investigate the circumstances of Helouan as a health resort, and particularly to inquire into the alleged benefits to be derived from its desert climate and its thermal springs. Helouan is largely frequented by English, German, and Russian invalids, and a German company, with characteristic business enterprise, has provided hotel accommodation, a sanatorium, and a medical institute for its compatriots. The pamphlet, which is of course in German, comprises five separate articles, two of them being written by Dr. Wilhelm Preminger, chief of the Helouan Medical Institute; the first giving some observations on the results of the treatment of nephritic cases at Helouan, the second dealing with gout in the knee-joint and the effects of treatment by the local sulphur baths. Dr. Max Loewy, a nerve specialist, who apparently divides his time between Marienbad and Helouan, writes on hypnotic suggestion and the limits of hypnotic influence. A short paper with a series of charts or curves is contributed by Dr. Theimert, showing the variations in the amount of albumin, urea, and chlorides excreted by certain patients under treatment in the medical institute, of which he is assistant medical officer. These four papers just mentioned take up 58 pages, but the last paper, written jointly by Dr. Preminger and Dr. Loewy, occupies the remaining 72 pages of the pamphlet, and is entitled "The History and Development of Helouan as a Health Resort." The winter climate of Helouan is dry, warm, and invigorating. The medicinal springs are of three kinds, sulphur, saline, and chalybeate, and can be used internally or externally. The cases which seem to benefit most are those of renal disease, neurasthenia, anæmia, chronic respiratory troubles, gout, and rheumatism. The publication of this last paper seems to have been the main object of the *Festschrift*, which is printed at Cairo by the Société Orientale de Publicité.

Ionic Medication. By LYTTON MAITLAND, M.D. Lond., formerly Assistant in the Electrical Department, Charing Cross Hospital. London: The Scientific Press, Limited. 1914. Pp. 102. Price 1s. net.—This is a small volume on the theory and practice of ionic medication, apparently meant for clinical assistants and those working under the direction of a physician. A good deal of the space is taken up with theoretical considerations, but practical matters are dealt with fully and yet concisely. It contains a large amount of sound information within a small compass, and the little book will be found very useful by those taking up the study and practice of this increasingly important branch of treatment.

Das Freilufthaus: ein neues Bausystem für Krankenanstalten und Wohngebäude. By D. SARASON, H. C. NUSSBAUM, H. BECHER, and N. BARDSWELL. With 6 plates and 32 figures in the text. Munich: J. Lehmann. 1913. Pp. 122. Price, paper, 5 marks; bound, 6 marks.—In 1901 Dr. Sarason devised a system of building sanatoriums and homes for tuberculous patients, with the special object of supplying each floor with an open-air balcony. The main idea, which he claims as a novelty, is that each floor shall be stepped backwards 8 ft. or so on its southern aspect, so as to give each floor a balcony 8 ft. wide; thus the ceiling of the ground floor is 8 ft. wider than that of the first floor, 16 ft. wider than that of the second floor, and so on. He appears to contemplate the erection of sanatoriums five or six storeys in height. Many of his rooms and passages appear to be unduly airless and dark. In one of his wards with 16 beds the washing arrangements consist of three basins and a bath tucked away in one corner. Most of his bathrooms are fitted up as water-closets also; some of his bathrooms and water-closets appear to ventilate into reading-rooms or passages, but to have no outlet to the external air. The book will be of interest to architects and specialists in tuberculosis, but the buildings described hardly appear suitable for erection in this country.

Extraction of Teeth. By F. COLEMAN. Second edition. With 57 illustrations. London: H. K. Lewis. 1914. Pp. 167. Price 3*s*. 6*d*.—The second edition of this book has been largely rewritten, and the author includes some instructive and practical illustrations. The operation of tooth extraction is, we fear, too often undertaken by those possessing practically no knowledge of the parts involved, with the result that although the tooth is removed an undue amount of damage of the hard and soft tissues is caused. In this volume Mr. Coleman deals in an able manner with the whole question, and we strongly recommend the book to those medical practitioners who are from time to time called upon to perform the operation of tooth extraction.

MISCELLANEOUS VOLUMES.

HE is a bold man who attempts to translate "Pierre Loti." The clear, concise, almost rhapsodical French of M. Viaud is very difficult to render into English. So with some success the renderer of *Morocco*, by PIERRE LOTI (translated from the French by W. P. BAINES, with 12 illustrations in colour and tone. London: T. Werner Laurie. Pp. 335. Price 7s. 6d. net), has kept very closely to the French style, frequently only transferring individual words from one language to the other. This volume is a charming account of a French diplomatic mission's journey to Fez in 1889, long before the beginning of that systematic subjugation of Morocco which is being completed to-day. As we might expect, we have afforded us a glowing and vivid picture of a country which was 20 years ago more Oriental than the East. To gauge Morocco from Tangier alone is like gauging Egypt from Port Said or Cairo. If, as Pierre Loti says, the sense of translation into anterior times strikes the visitor to Tangier, far more does it strike those who land in the towns of the Atlantic coast—Salee, Mazagan, Mogador, Arzila—and more still those who penetrate to Fez or Marakesh. The immense antiquity of Morocco must impress itself on the reader, as it has on the author. The southern capital of the country had water supplied in pipes to every house centuries before any European city and when the aqueducts of Rome had been all broken down. There are excellent illustrations to this volume, in no degree too bright in colour. Everyone who can should visit Morocco as soon as possible, for the accessible parts of its large area will probably rapidly be de-orientalised in the next few years.

In the *House on Wheels* (London: Chapman and Hall, Limited. 1914. Pp. 150. Price 2*s*.) Dr. ELIZABETH SLOAN CHESSER writes most entertainingly—e.g., the incident of the paraffin and the pie (p. 52)—and also instructively of her "trek through Kent" in a caravan. It is not until we arrive at Chapter VI. that we begin to realise the *arrière pensée* of the book—for there we learn that "the modern caravanner belongs to one of three types, the holiday maker, the gipsy, or the propagandist"—and though we ought perhaps to have had our suspicions aroused at the outset by the name of the caravan, the "Florence Nightingale," only now do we realise that this caravanning expedition, which we have been so heartily enjoying, was no mere holiday jaunt, but part of the praiseworthy campaign of the Women's Imperial Health Association. From here on we begin to get glimpses of that work in the experiences related. An appendix gives a few hints on caravanning, and directs the reader's attention for further information on that subject to the Caravan Club, whose quarters have been removed since this book was published to 108, Long-acre, W.C.—There is a literary charm in the direct conversational style of *Autolycus in Arcady*, by HERBERT W. TOMPKINS, F.R.Hist.S. (London: George Allen and Co., Limited. 1914. Pp. 248. Price 3*s*. 6*d*. net). His discursive remarks "from the journal of a wandering bookman, set down between Guildford and New Romsey," to quote the title page, on men and things, books and authors, Pepys, Boswell, Montaigne, and Lamb make delightful reading. On a rambling tour a more pleasant partner than Autolycus would be hard to imagine, but, failing that gentleman's personal presence, we must be content with the reminiscences that he has gathered for us on his wanderings, and the book itself will prove an enjoyable companion either in an arcadian shady nook when the days are long or by the fire on winter evenings.

In *The History and Economics of Indian Famines*, by A. LOVEDAY, B.A. (London: G. Bell and Sons, Limited. 1914. Pp. 163. Price 2*s*. 6*d*. net), which is an enlargement of the Le Bas prize essay of last year, with some modifications, the author quotes the records of the earlier famines, deals shortly with the great disaster in Bengal and Orissa in 1770, and the methods of relief adopted by the East India Company, and in more detail describes the organisation and protective measures adopted at the present time. There are few generalisations applicable to the whole of India, but one is that over two-thirds of its population are occupied in an industry "almost wholly dependent upon a sufficient and well-distributed rainfall." Another important point is the poverty of the cultivator—that is, of the majority of the population. The income per head was estimated at £2 per annum in 1880, and it is not thought to have much increased since. The native is nevertheless extravagant, and is consequently to an enormous extent in the hands of the moneylenders. The old custom of hoarding grain to carry the people through a bad year has largely gone out with increased facilities for transport. The Government (by financial decentralisation and by instituting the Famine Insurance Fund of 1877) and private charity (by the Indian Peoples Famine Trust) have done a great deal towards guarding against disaster in the future; but the ultimate solution lies, as Mr. Loveday insists, in individual frugality, and this depends on carrying out the principle of coöperation in agriculture, as in other industrial pursuits.

We have rarely read a more temperate and restrained, and at the same time cogent and forcible, appeal for a wise consideration of the whole subject of the White Slave Traffic and the social aspects of the venereal diseases than *The Social Disease and How to Fight It* (London: Longmans, Green, and Co. 1914. Pp. 87. Price 1*s*. net), by LOUISE CREIGHTON. It is admirably balanced against either extreme. While recognising that the first need is for knowledge, Mrs. Creighton realises that, as everyone cannot know everything at once, selection is requisite, not only between who shall know, but also to decide how much each should know, for "it would be foolish to deny that there are dangers in the indiscriminate distribution of knowledge." Ignorance, she says, has proved so dangerous that it cannot be allowed to go on, but it is well that each should know only just so much as is useful to him. "There is no need to know all the details of disease in order to avoid it; there is no need to dwell upon its horrors, still less to speak about them. …… All are not called upon to study disease as if they were doctors." The author insists on the need for dethroning the double standard of morality, but she realises that that can be done only by leading men and women to fight and work together to that end. "The mistake of so much that has been said lately on this subject is that it has been treated as if it were a woman's question, a matter in which women had to fight against men to maintain the rights of their sex." In this struggle, as she rightly says, women have not got to fight against men, but to win more men to fight with them. But while there must be a fight and all must take part in it, all are not called to take the same part. In teaching girls about the dangers they may run she points out that care must be taken that the teaching does not arouse panic, the nervous fear that goes out to meet dangers or the hysteria that imagines them. Above all, "those who want to work for purity must be careful about the purity of their own souls." The book ends on a hopeful note. It should be widely read.—— A series of admirable lectures on *How to Keep Fit* (London: Jarrold and Sons. Pp. 131. Price 1*s.* net) can also be warmly commended. They are as follows: Alcohol in Relation to Health, by Mr. W. McAdam Eccles; Diet, by Sir Robert W. Burnet; Clean Mindedness, by Sir Dyce Duckworth; The Value of Discipline in the National Life, by Sir R. Douglas Powell; Dress, by Mr. James Cantlie; and Chastity, by Sir Francis H. Champneys. It would be possible, perhaps, to find a few statements here and there with which all would not agree, but, speaking generally, the lectures are models of their kind. The paper of Sir Francis Champneys deserves special commendation. It is a plain-spoken, yet entirely reverent, treatment of the sexual difficulty. The articles generally are characterised by directness, moderation, and sound sense.

That greater diffusion of knowledge as to the many evils which result from the undisciplined use of the sexual instinct is needed will not be denied, but how such diffusion should be effected is a question upon which there may be a marked difference of opinion, for many who will agree with Mrs. Creighton on her general thesis would differ perhaps from her in the places where limitations to knowledge and its spread should begin. Mr. FRANK G. LAYTON, M.R.C.S. Eng., the author of *Philip's Wife*, a play in three acts (London: A. C. Fifield. 1914. Pp. 64. Price 1*s.* net), is probably well within the mark when he says in his preface that it is unlikely the play will be produced in England—at any rate for a long time, though, as he also says, "the play is not improper." Philip's wife, who gives the title to the play, is the daughter of a clergyman who is much opposed to any teaching concerning sexual matters, and who is antipathetic to medical men. Philip, the son of a worldly and socially ambitious merchant, has been "indiscreet" in his college days. Anxious for an early marriage and urged by his father he scorns medical advice and becomes the victim of a quack. The result of this defiance of medical authority in the supposed interests of social position is well told. The bigotry of the clergyman is perhaps a little overdrawn, while the conversations between the practitioner and the consultant do not ring quite true, but the play is eminently readable, though the subject is somewhat unsavoury. Mr. Layton states in his preface that his play was written before he had ever heard of Brieux's famous *Les Avariés* (*Damaged Goods.* Same publishers and price. Pp. xxiii.–65), of which a new translation by JOHN POLLOCK has just appeared, with interesting preface and foreword by Mr. G. Bernard Shaw and Mrs. Bernard Shaw respectively.

JOURNALS AND MAGAZINES.

Jahreskurse für Aerztliche Fortbildung. Munich: Lehmann. Price 18 marks per annum.—The May number is devoted to a review of neurology and psychiatry. Professor Marburg writes on the recognition of operable tumours of the spinal cord, including localised spinal meningitis serosa. Amongst other signs mentioned are the albuminous and often yellowish character of the cerebro-spinal fluid, the radicular distribution of the pain, paræsthesia, and palsy, and the Brown-Séquard dissociation of sensation. It is pointed out how accurately all the symptoms may be mimicked by spinal meningitis serosa, either diffuse or circumscribed in the form of cysts by adhesions, but fortunately the treatment is the same, namely, laminectomy. The indications for Förster's operation of posterior rhizotomy are then discussed, and a general summary of recent advances in neurology follows. The articles on mental diseases include one on prognosis, with especial reference to general paralysis of the insane treated by salvarsan given by various means; great improvement is reported in some cases. The prognosis in dementia præcox and other conditions is also debated. The pathological anatomy of various forms of mental disorder has received much attention lately, and some important findings are discussed, such as the demonstration of spirochætæ in the brain in parasyphilitics. The final article deals with serology in mental disease.—Diseases of children form the topic in the June number, and the great bulk is devoted to a consideration of the heart in childhood, by Langstein and Putzig. The normal condition of the heart in infancy is first described, including the electrocardiogram and X ray findings. Then follows a discussion of the import of deviations from the normal rhythm, such as extrasystoles, tachycardia, gallop rhythm, and heart-block; next, the writers deal with hypertrophy, dilatation, and congenital heart disease. Skiagrams appear to be used extensively in making the diagnosis of hypertrophy. Pericarditis and affections of the myocardium and valves are also considered. The usual general review of children's diseases follows. There is mention of what German observers are calling "spasmophilia," including tetany of alimentary origin and the allied spasmodic affections. Cow's milk and calcium salts constitute the best treatment.

The American Journal of Tropical Diseases and Preventive Medicine, Vol. I., No. 10 (the official organ of the American Society of Tropical Medicine).—This number contains three editorials and three original articles in addition to the usual notes and comments and the reviews of current literature. The first of the editorials is signed by Dr. C. C. Bass, of Tulane University, and deals with hookworm disease, which is characterised as a world-disease of long duration, and one "which destroys hundreds of thousands of lives yearly, and leads to the loss of countless millions of money through the reduced efficiency of its victims." Dr. Bass calculates that out of the 1,600,000,000 of people inhabiting the globe more than 4,500,000 are at present suffering from ankylostomiasis. Even now, he says, "man is pouring daily into the ever-empty stomach of this blood-sucking parasite a veritable river of his life-blood." The second editorial deals with preventive medicine and syphilis, while the third discusses prostitution in Europe, and is signed by Dr. Isadore Dyer, one of the two joint editors of the journal. The first of the original articles is also on the subject of hookworm disease or ankylostomiasis, and is illustrated by two plates. It is contributed by Passed Assistant Surgeon C. M. Fauntleroy, of the United States Public Health Service. Incidentally he mentions that during an investigation of the disease in some rural districts of the Southern States no fewer than 21,308 houses were found which had no privy at all. It is, therefore, not surprising that the infection has become widespread in that region. Dr. Fauntleroy remarks that an estimate of more than 2,000,000 of cases of ankylostomiasis in the United States is probably not an exaggeration. The second article is on beri-beri, by Dr. Paul G. Woolley, of the University of Cincinnati, and in it he gives a fairly good résumé of the present state of our knowledge of this important disease. The third article is on preventive vaccination against typhoid fever, and is contributed by Professor A. Chantemesse, of Paris; it has already been published in *Le Monde Médical*, and has been translated for the journal by Dr. Charles Chassignac, of New Orleans. Professor Chantemesse, like many more experts, prefers a heated monovalent vaccine to a polyvalent one.

Æsculape (Paris: 41, Rue des Ecoles. Foreign subscription 15 francs; single number 1.50 francs).—The June number of this illustrated review of the arts and letters in relation to medicine and science contains some interesting items. Professor Félix Regnault discusses the medico-psychologic characteristics of some of the work of Michael Angelo—the tombs of Julian II. and Lorenzo dei Medici, the Aurora, and the Twilight.—Dr. Bonnette gives some interesting details of the health and medical attendants of the great Napoleon.—Dr. P. Barutaut begins an article on the legends of the sirens, illustrating it with examples of symmelus sympus, the condition on which the siren conception is based.—Dr. E. Sirard gives a first instalment of a biographical account of Théophraste Renaiedot of Montpellier.—The article by Dr. Lucien Libert deals with the cultus of St. George and the treatment of insanity among the Greeks, and pays special attention to the monastery of St. George on Prinkipo, in the Sea of Marmora.—Dr. P. Finet publishes sonnets on François Helme and Robert Marquézy, and Dr. Jean Avalon gives an account of Yong-Fou, a courtesan of Peking; of Joyau Céleste, the favourite of the emperor; and of "M. de Pekin," the executioner of Peking, with a description of the revolting atrocities perpetuated on Fou-Tchou-Li, the attempted assassin of a prince.—There is also an account in the supplement of Mme. de Miramion, whose hôtel, now the central pharmacy of the hospitals, as was mentioned in the February number (reviewed in THE LANCET of April 4th), it is desired to acquire for a Museum of the History of Medicine in Paris.

The Hospital Gazette.—The June issue is a special number devoted to historical and constructional accounts of the Birmingham hospitals. It seems that Birmingham is possessed of almost as great a variety of institutions as London. Mr. Howard J. Collins describes the General Hospital and Mr. Arthur Hulme the Queen's Hospital. The Free Hospital for Sick Children, the Eye Hospital, the Hospital for Women, the Ear and Throat Hospital, and the Hospital for Skin and Urinary Diseases, all of which have "Birmingham and Midland" as part of their titles, are described by their secretaries, as also are the Royal Orthopædic and Spinal Hospital, the Birmingham Dental Hospital, the Birmingham and Midland Counties Sanatorium, and the Moseley Convalescent Hospital for Children. The number closes with a history of the convalescent homes of the Birmingham Hospital Saturday Fund at Tyn-y-Coed (men) and Marle Hall (women), Llanrhos; the Red House, Great Barr (children); and the Romsley Hill Home (Sir William Cook memorial) for Consumptives.

POOR-LAW MEDICAL OFFICERS' ASSOCIATION OF ENGLAND AND WALES.

THE annual meeting of this association took place on July 2nd at Burnley. The MAYOR (Alderman J. Sellers Kay), in welcoming the members in the council chamber of the Town-hall, alluded to the dispute which had been going on in Burnley for some 18 months between the Poor-law medical officers and the Poor-law authorities. He held no brief for either party, he said, and if as Mayor he could be of any assistance in bringing about a settlement, he would be pleased to render that assistance.

Surgeon-General G. J. H. EVATT, President of the association, then took the chair, and spoke first of the pleasure with which he had inspected the Poor-law hospital in Burnley. He had also visited the general hospital, and as far as he could see the Poor-law hospital was the better. The council of the association, he said, regretted that friction should have taken place between the Poor-law medical officers and the authorities, and thanked the Mayor for the offer of help.

Mr. A. E. BIRD, honorary secretary of the Burnley Division of the British Medical Association, extended a welcome to the meeting.

After the minutes of the last annual meeting had been read, confirmed, and signed by the chairman, the annual report of the council and their report on the Poor-law Institutions Order were unanimously received and adopted, and the honorary secretary was instructed to send a copy of the latter to the Local Government Board. The balance sheet for the year was then considered by the meeting, and its details were explained by the honorary secretary, and it was unanimously approved. Surgeon-General Evatt, president, and Dr. Major Greenwood, honorary secretary, were re-elected to their posts for the ensuing year with acclamation. Mr. A. A. Napper was re-elected treasurer and Dr. A. Withers Green auditor. Mr. D. B. Balding was also re-elected chairman of council. The following were elected members of council for 1914–15:—Mr. W. Holder (Hull), Mr. J. B. G. Gidley-Moore (Fyfield), Dr. Lloyd Brown (Tunbridge Wells), Mr. P. Withers Green (London), Mr. George Jackson (Plymouth), Dr. A. Drury (Halifax), Mr. C. Biddle (Merthyr Tydfil), Dr. C. Thackray Parsons (London), Dr. W. Brown (Bristol), and Dr. A. P. Agnew (Burnley).

Mr. C. E. BYGRAVE, clerk to the guardians of the Blackburn Union, then read a paper on Recent Legislation Affecting the Duties of Poor-law Medical Officers. He attributed the diminution in the number of persons in receipt of out relief between 1910 and 1911 to the removal of old-age pensioners from the outdoor relief. The need for institutional medical treatment did not seem to be diminished as a result of the National Insurance Act.

Dr. MAJOR GREENWOOD read a paper on the Future of the Poor-law and the Poor-law Medical Service. He believed, he said, that in the future the work would develop more and more on institutional lines, and all indoor Poor-law medical officers would tend to become whole-time officers. Unions might combine to create a common infirmary, or the Poor-law infirmary might become a State institution and be utilised in connexion with State schemes for changes in the general medical practice of the country. The National Insurance Act was considered by many to be a step in that direction.

In the evening the annual dinner was held at which Surgeon-General Evatt presided over a good assembly, having the Mayoress (Mrs. Sellers Kay) on his right hand and the Mayor on his left.

MEDICINE AND THE LAW.

Proceedings under the Apothecaries Act, 1815.

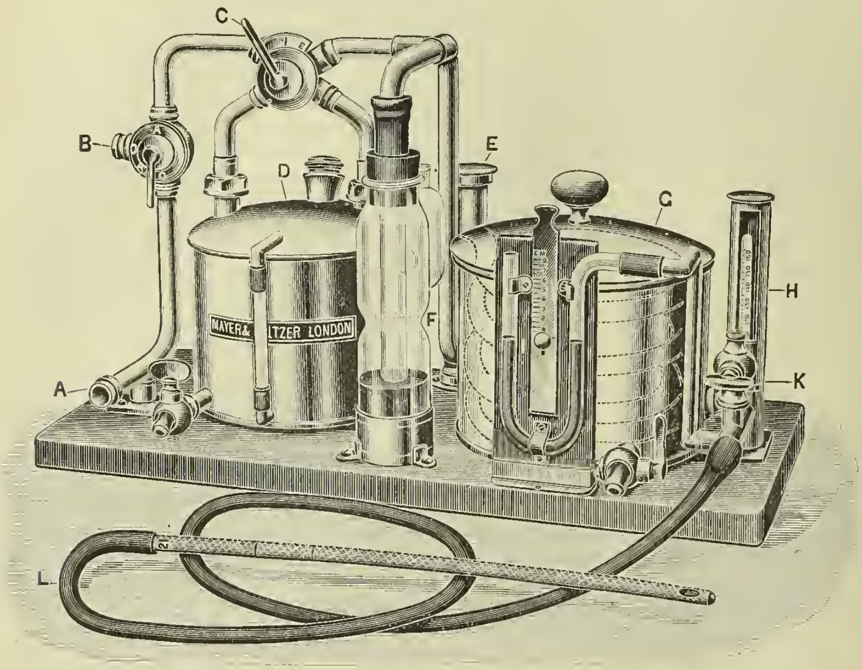
AT the Bow county court on June 29th the Society of Apothecaries recovered a penalty of £20 against John Charles Purdue, described as a medical herbalist, of 28, Roscoe-street, Canning Town, for a breach of the Apothecaries Act, 1815, in that he had acted and practised as an apothecary or medical practitioner in attending and medically treating the infant daughter of Arthur Thompson, of 21, Scott-street, Canning Town, whose death in January last was the subject of an inquest conducted by the local coroner. It appeared from the evidence that the child had become ill on Tuesday, Jan. 27th, and was taken by her mother to the defendant's shop, who examined her and said that she was suffering from pneumonia. He further gave the mother medicine for the child and oil to rub her chest with. He was again summoned by the mother to see the child on the same afternoon, and then administered further medicine, also using the stethoscope and taking the child's temperature with a clinical thermometer. The defendant attended the child further on the Wednesday, Thursday, and Friday, on the evening of which day the child died. The defendant was paid the sum of 2s. in respect of his medicine and attendance. It appeared from the medical evidence given at the inquest that the child actually died from meningitis. At the hearing of the case the defendant's counsel endeavoured to argue that he was protected by a statute of Henry VIII. sometimes called the Herbalists Act. The county court judge held that the statute was inapplicable and that there had been a clear breach of Section 20 of the Apothecaries Act, 1815, and he consequently gave judgment for the society with costs on the higher scale.

THE PANAMA-PACIFIC INTERNATIONAL EXPOSITION AT SAN FRANCISCO.—This exposition, which will be opened on Feb. 20th, 1915, in view of the fact that the canal could not have been successfully carried out but for the aid rendered by medical and sanitary science, will devote much attention to medical matters. Among the exhibits will be hospital wards in the tropics, a huge model of a mosquito by Philip Rauer, to demonstrate the dangers of the insect, a model emergency hospital, civic and health exhibits from the Urban Exhibition of Lyons, and the whole of the British exhibit from Ghent, as well by Argentina, Japan, France, Germany, the Philippines, and 30 other countries. Large industrial concerns will display their health and human welfare and life protecting methods. The Rockefeller Foundation will display measures for the eradication of hookworm. Other bodies taking part are the Russel Sage Foundation, the Carnegie institutions, the Social Survey, the American Academy of Medicine, the National Commission on Mental Hygiene, several special medical organisations, antituberculosis societies, the International Congress of Nurses, and many others. There will also be a dental congress.

New Inventions.

APPARATUS FOR INTRATRACHEAL ANÆSTHESIA.

FIG. 1.



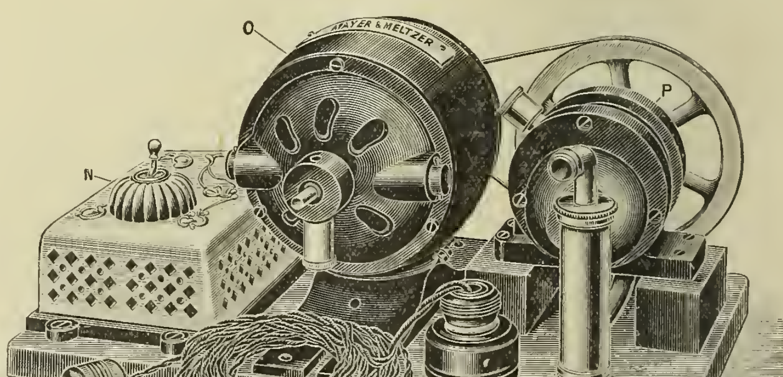
THE principles and advantages of intratracheal insufflation are now well known. Apart from its use as a method of artificial respiration and in thoracic surgery, it has been found, for example, to be invaluable in the surgery of the head and neck, and more especially in operations on the thyroid, mouth, pharynx, and nasal passages. Various apparatus have been devised, and the description of one which I have used for 18 months appeared in the *British Journal of Surgery* for July, 1913, and in the *Bristol Medico-Chirurgical Journal* for December following. Alterations in this have been made from time to time, and with the object of still further reducing cost and weight the present apparatus has been made for me. It is compact, light, portable, and easy to manipulate. It can be used either with a foot pump or with an electric motor and pump. (Fig. 2.) The former is provided with an air filter, which serves the double purpose of freeing the air from dust, &c., and of converting the intermittent air stream into a constant one. The foot pump does not give such a regular anæsthesia as a mechanical device, such as a motor, and entails rather hard work upon the anæsthetist during a long operation, but it is a very fair substitute. Where the motor is used, a foot pump should always be at hand in the rare event of a failure of the electric current.

The ether apparatus (Fig. 1) has all its parts readily accessible, and the ether chamber D, made of metal, can be easily detached and cleaned. There are very few rubber connexions to get out of order, and the apparatus can deliver a very concentrated ether vapour. The air stream enters at A and mixed with oxygen, if necessary, by means of the tap B, can be made to pass by a turn of the regulating tap C either wholly over the ether or in any desired proportion, or wholly to miss the ether. The air-ether mixture, or air alone, then passes along to the moistening chamber E, thence to the warming vessel G, and so on to the catheter L. A manometer, I, and mercury safety valve, F, are placed in the circuit, the latter being designed with an overflow cup to catch any mercury blown up when the pressure exceeds, e.g., 20 mm. Hg. The safety valve can also be set to blow off at other pressures. The temperature of the outgoing stream of air and ether can be ascertained by means of the thermometer H. A tap, K, is provided for reduction at regular intervals in the volume of the air stream. The water in the warming chamber can be readily kept warm (usually 120° F. is the right temperature) by renewing it at intervals of about 10 minutes. An electric heater has not been supplied because of the additional cost; a spirit lamp is probably quite safe if properly guarded, but I have not cared to run any risk with so much ether close at hand. This part of the apparatus weighs just over 9 lb. and is carried in a light case made of 3-ply wood.

The motor (Fig. 2, O), of 1/16 h.p., must be chosen to suit the special voltage. In my own practice, I have found it a convenience to use a motor of 105 volts continuous current, with a carbon lamp in the circuit, so that the apparatus can be run on any continuous current from 100 up to 250 volts. The motor drives a rotary pump, P, which sends a constant stream of air through the filter R. The speed of the motor and strength of the air blast are regulated by the resistance N. A plug, M, is for connexion to the electric main.

My thanks are due to Messrs. Mayer and Meltzer, of Great Portland-street, London, W., for the care and trouble they have taken in making this apparatus, the special catheters, and the direct laryngoscope, which is a modification of Hill's well-known pattern.

FIG. 2.



Queen Anne-street, W. FRANCIS E. SHIPWAY, M.D. Cantab.

THE LANCET.

LONDON: SATURDAY, JULY 11, 1914.

Royal Commission on Venereal Diseases.

The Commissioners appointed to inquire into the prevalence of venereal diseases in the United Kingdom, a strong and well-chosen body, have been taking evidence now for eight months as to the effects upon the health of the community of these conditions and as to the means by which such effects can be alleviated or prevented. Short, sometimes very short, abstracts of this evidence have been regularly published in The Lancet, so that our readers are already familiar with the directions which the inquiry has so far taken. It was understood that no return to the policy or provisions of the Contagious Diseases Acts of 1864, 1866, or 1869 was to be regarded as falling within the scope of the inquiry, but with that limitation the Commission has made an extremely all-round investigation.

An interim report of the proceedings up to April 6th has now been issued. Up to that date the Commissioners had held 32 meetings and examined 36 witnesses, with the result that they found the branches of inquiry involved in the terms of reference to be so numerous, and in some cases so closely interrelated, that it was impossible to deal with them separately, completing one branch before entering upon another. Many lines of investigation are still incomplete, and evidence is required from Government departments, as well as from private individuals able to speak with expert knowledge, before any general or special conclusions can be arrived at. Statistics are being prepared for the Commissioners by certain hospitals and institutions which will have to be taken into serious count by the Commissioners before they can commit themselves to any recommendations. But they are unanimously of opinion that it may be an advantage to the public if the minutes of the evidence taken between Nov. 7th, 1913, when the Commission held its first sitting, and April 6th, 1914, were now issued to the public, a point of view with which we are heartily in accord. The sittings of the Commission were held privately, with the idea presumably that possible witnesses might be embarrassed by publicity when striving to assist the inquiry in some of its phases. There is no indication in the interim report that this trouble would have arisen, and an appeal to the proprietors of responsible journals, made when the sittings commenced, would have probably removed apprehension on this score. The objections to the policy of closed doors are, however, largely removed by the publication in accessible form of the proceedings.

We recommend to all our readers the perusal of the interesting evidence given by well-selected witnesses which is appended to the first interim report.[1] When the conclusions of the Royal Commission are arrived at, and the consequent suggestions come under the consideration of Government, the procedure adopted will necessarily have a direct medical bearing. The public will expect the medical profession to give advice as to the value or practicability of any legislative steps that may be taken. The prevention of the ravages of venereal diseases is a subject in which at last the inhabitants of this country are seriously interested. The brief abstracts of the evidence taken by the Royal Commission which have so far appeared have helped to spread and also to intensify that interest, and we may be certain that the termination of the labours of the Commission will be the signal for the introduction of legislation of the greatest importance and also of the greatest delicacy. The difficulties surrounding both notification and the institution of clinics for treatment, which have to be faced, are certain to lead to the expression of strong opinions, and it is to the medical profession that the public will look for guidance.

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Artificial Parthenogenesis and Fertilisation.

Réaumur, Bonnet, and other naturalists of the eighteenth century established the fact that plant lice bring forth live young without pairing. In 1845 the observations of Dzierzon on parthenogenesis aroused the greatest interest. He was led to the conclusion that male bees—the drones—arise from unfertilised eggs, workers and queens being the issue from fertilised eggs. When a queen bee after the so-called nuptial flight lays an egg in the larger drone cell, the egg passes through the oviduct without any sperm being pressed out from the receptaculum seminis; but if laying an egg in a worker cell, a trace of sperm is pressed out on the egg and so the egg is fertilised. Parthenogenic phenomena have been known through many observations to occur in certain butterflies, but it was the investigation of the natural parthenogenesis of the Bombyx mori, or silkworm, which formed the starting point of artificial parthenogenesis, with its array of facts and suggestions that may come to be of high significance in medicine.

The next step was taken when Hertwig about 1892 observed that the unfertilised eggs of certain sea urchins may show the beginning of even cell division if they remain long enough in water. In the same year Professor Loeb began his now classic

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[1] Appendix to the First Report of the Royal Commission on Venereal Diseases (Minutes of Evidence). London: Wyman and Sons, Limited. Price 3*s*. 8*d*.

investigations on artificial parthenogenesis, employing chiefly the eggs of certain sea urchins. In his admirable volume, which has recently appeared,[1] he gives us step by step the evolution of his ideas on this subject and shows how he put them to the test of experimental investigation, and by this means opened up an entirely new field. First arose the idea whether it were not possible to cause unfertilised sea urchin eggs to develop into larvæ after altering the constitution of sea water, such as by the addition of salts, acids, or alkalies. This was shown to obtain. There is but one criterion which enables us to decide whether the agent has an effect upon the egg similar to the spermatozoon, and that is development of the egg into a larva. The mere initiation of cell division is not sufficient. Professor Loeb gives an insight into the physico-chemical nature of the process of development, and his book is intended not only for the zoologist, but more especially for the pathologist, and chemist. The unfertilised egg dies in a very short time—hours or weeks; the fertilised egg lives indefinitely, and Professor Loeb shows that for the "mysterious complex" called a living spermatozoon there may be substituted well-known chemical and physical agents. The spermatozoon causes two kinds of effects—one development and the other transmission of the paternal characteristics to the developing embryo. It is probable that these effects are connected with quite different materials in the sperm. It is possible with heterogeneous fertilisation to obtain only the developmental result. Without oxygen the fertilised egg can neither segment nor develop. The formation of a fertilisation membrane round an egg is one of the fundamental facts of egg development. In 1905 Professor Loeb found that a short exposure of an egg to a solution of a fatty acid—e.g., butyric—in sea water led to the formation of a typical fertilisation membrane, as do many other substances, and indeed all hæmolytic agents—to quote his words, "all hæmolytic agencies effect the activation of the unfertilised egg, and this activation consists in a cytolysis of the cortical layer of the eggs." Another process is still required, a corrective process, since the membrane formation alone tends to rapid disintegration of the egg. This second process consists in submitting the egg for a short time to a hypertonic solution containing oxygen or for a longer period to sea water free from oxygen. The most surprising fact, however, in our present knowledge of artificial parthenogenesis is that the blood even of mammals and the tissue extracts of many different species will cause the fertilisation of the unfertilised egg of the sea urchin (and other animals) to form a fertilisation membrane, which will develop if subsequently treated with a hypertonic solution, while the blood and tissue extracts of their own species have no such effect. The efficacy of blood serum may be increased by the addition of $SrCl_2$ to the serum.

The subject of heterogeneous hybridisation, the effects of radium on the sperm, the combination of artificial parthenogenesis and fertilisation with sperm in the same egg and the conditions for maturation of the egg are all subjects of importance to scientific medicine, now that the need for a better understanding of heredity is generally recognised. Professor Loeb supplies also an extensive array of facts on artificial parthenogenesis in the eggs of starfish, annelids, molluscs, and frogs, and also in plants; he describes the preservation of the life of the egg by the act of fertilisation and the relations between artificial parthenogenesis and heredity, and discusses the question as old as the time of Leeuwenhoek, Can an embryo develop from a spermatozoon?—a question that he finds cannot yet be answered in the affirmative. It would be difficult to estimate the far-reaching effects of the results of his experiments. They mark a new era in the study of fertilisation, as well as give a new impetus to those who see in so-called vital phenomena a large field which day by day is gradually becoming more circumscribed as the facts of physics and chemistry are seen to apply to the elucidation of many phenomena hitherto recognised as vital. We have to thank Professor Loeb for a brilliant and suggestive monograph—a monograph that will prove a good argument for those who desire to see our medical students equipped with a thorough knowledge of the facts of physics and chemistry that bear directly on the problems of biology. Professor King's admirable translation brings Professor Loeb's work within the general scope.

Joseph Chamberlain.

By the death of Joseph Chamberlain at the end of last week, after a practical retirement for eight years, the country has been generally stirred. Admiration at his achievements has been in no way stifled by the fact that in certain obvious directions the country eventually refused to follow his course; the singleness of purpose, the courage and tenacity, the incisiveness of speech and action of this great man, have been vividly recalled to us by his final removal from the scene of his activities. It would not be easy for either practised historian or political contemporary to prophesy exactly what position Joseph Chamberlain will occupy in the minds of posterity as a statesman, but as the greatest of Colonial Secretaries he will be remembered, and in this capacity medicine will always do him honour.

Only so recently as June 23rd the Secretary of State for the Colonies, Mr. Lewis Harcourt, unveiled at the Albert Dock Hospital of the Seamen's Hospital Society two bronze portrait reliefs of Joseph Chamberlain and his son, Mr.

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[1] Artificial Parthenogenesis and Fertilisation. By Jacques Loeb, Member of the Rockefeller Institute for Medical Research. Originally translated from the German by W. O. Redman King, Assistant Lecturer in Zoology at the University of Leeds, England. Supplemented and revised by the Author. London: Cambridge University Press; Chicago: The University of Chicago Press. 1913. Pp. 312. Price 10*s*. net.

AUSTEN CHAMBERLAIN, in commemoration of their magnificent services in the cause of tropical medicine and preventive hygiene, and more especially in the establishment of the London School of Tropical Medicine. This school, to which the adjacent Albert Dock Hospital affords opportunities for clinical work, was founded and endowed chiefly through the efforts of JOSEPH CHAMBERLAIN, who as Secretary of State for the Colonies early realised that one of the bitterest difficulties in imperial administration, and one of the chief obstacles to the development of the tropical and subtropical dependencies under the British flag, lay in the devastations caused by diseases peculiar to the regions. The proof that malaria was not an inherent factor of tropical residence, but due to an avoidable cause, led him at once to grasp the probability that most, if not all, of the chief tropical diseases might be avoidable as the result of especially directed research. The propagation of malaria by the bites of an infected insect might have its other pathological counterparts. Taking counsel mainly with Sir PATRICK MANSON, at that time medical adviser to the Colonial Office, he determined on the organised prosecution of such research, and with the energy that marked his prosecution of political ends at once set about realising his plans. In May, 1899, he presided at a banquet organised in behalf of the endowment of tropical research when there was raised the sum of £15,000, with which in a few months laboratories were erected in the neighbourhood of the Albert Dock Hospital, and the London School of Tropical Medicine was opened, in which 70 students enrolled themselves. By 1905 the school, whose utility had been apparent from the first, had become an established success, and had outgrown its accommodation. In that year CHAMBERLAIN again came forward and raised a further £10,000, which provided a library, a museum, and a special tropical ward, whereby the number of beds for clinical study was raised to 50. His efforts attracted private donors, while grants were made by the Treasury, and an annual contribution of £850 towards the working expenses was sent by the Crown Colonies in appreciation of the benefits conferred by the school. We need not expatiate on the value of the work done by the London School of Tropical Medicine, but every development of that work has been a stone in CHAMBERLAIN'S memorial pillar. Commissions and research workers were soon sent out to various parts of the world to prosecute special researches on the spot. Malaria, sleeping sickness, sprue, guinea worm, tropical dysentery, and ankylostomiasis have all undergone continuous investigation with great gain to the health and saving in the lives of those whose duty calls them to labour in tropical climates. What better evidence can be adduced of this gain than the fact that the death-rate of the West Coast of Africa, of erstwhile terrible notoriety, has fallen from 28 to 8 per 1000, while the number of officials annually invalided has dropped from 62 to 28? The number of students in the London school is now nearly 200; 1800 have had their training there, and of these some 700 are bringing the special knowledge thus acquired to the service of their country in the Colonial Medical Service. That the country is now fully alive to the great benefits conferred on it by the London school is shown by the fact that within a few months Mr. AUSTEN CHAMBERLAIN has been able to raise a further sum of £73,000 for endowment of the school.

In CHAMBERLAIN'S achievements in the field of tropical medicine are clearly to be discerned all the qualities of personal character which lift the statesman above the politician—a spaciousness of view to envisage a problem as a whole, insight into the underlying factors of success or failure, knowledge of men to select those most competent to work effectually in the attainment of the end, forcefulness to attach them to his aims, clarity of expression to communicate his visions to the world at large, and a whole-hearted and single-minded devotion to the highest and widest aims untinctured with mere Chauvinism or self-seeking. As his field of endeavour widened from municipal to national, from national to imperial, from imperial to world-wide betterment, his ideals expanded without changing their essential character. The principles and methods he had successfully proved in more restricted fields were adapted to wider issues. He was, in truth, the great Elizabethan of our age.

Annotations.

"Ne quid nimis."

BOVINE TUBERCULOSIS.

THE Board of Agriculture and Fisheries has issued an amended Tuberculosis Order relating to the compulsory slaughter, with compensation, of bovine animals affected with certain degrees of tuberculosis. The new Order, which comes into operation at once, simplifies the basis of the compensation to be paid, which is now to be the estimated market value of the animal, while a circular which accompanies the Order states that the Treasury contribution to the expense of the local authorities concerned will in future be on the basis of three-fourths of the compensation money instead of one-half, as previously authorised. The animals which are subject to notification and compulsory slaughter are those with emaciation due to tuberculosis, those with a chronic cough and showing definite clinical signs of tuberculosis, and cows with tuberculosis of the udder or giving tuberculous milk. As in the case of the 1913 Order, the notification of any one of these forms of tuberculosis entails a visit by the veterinary inspector of the local authority under the Diseases of Animals Act, who is required to extend his examination to other bovine animals on the premises. It does not appear, however, that this further examination is to be made with the object of applying the tuberculin test to detect early tuberculosis, or of advising or assisting the farmer to separate the reacting animals from the rest of the stock, and so ultimately to obtain a herd free from the disease; the Order and circular endeavour to limit the inspector's activities as much as possible to the detection of the advanced cases for which compensation is payable. There is thus some risk that the ease with which the animals with advanced tuberculosis can be disposed of, and substantial compensation obtained, will reconcile the cow-keeper to allowing tuberculosis to spread in the dairy herd without taking measures to detect and separate cases of incipient tuberculosis or to rearrange his cowsheds so as to minimise cow-to-cow infection. Among other matters which are left in a somewhat uncertain state by the Order, we note that the local authority is directed to dispose of the carcass of the animal to the best advantage, and in cases where the carcass or a portion thereof is likely to be saleable for human consumption to obtain the removal of the animal to a slaughter-house for the purposes of slaughter. It is advised that the local authority for the purposes of the Order, which is not necessarily the sanitary authority, should confer with the latter body so that steps may be taken to guard against the use in such cases of diseased meat for human food; but it is not clear how this dual responsibility can be effectively discharged in the case of private slaughter-houses in the country, and many difficulties seem likely to arise unless a more definite instruction is given. The Order, like its predecessor, will be welcome from the side of public health to the extent that it aids in the early removal of cows giving tuberculous milk from the milk-supply, and is not merely used to get rid of the "piner" or "waster" when its value for milking has almost ceased. At present its administration by local authorities seems to be practically independent of the information obtained by public health authorities as a result of their examination of milk for tubercle bacilli, but it is to be hoped that the Milk and Dairies Bills for England and Scotland will soon be enacted and enable the necessary adjustments to be made and secure that the large sums to be paid from national funds are expended with satisfactory results to the consumer of milk as well as to the cow owner.

THE PRESCRIBING OF NARCOTIC DRUGS.

IN connexion with the International Opium Convention events are so shaping themselves that it will be necessary before long for all the Powers concerned to complete their plans for the passing of domestic legislation to give effect to the provisions of the Convention. For some time our own Foreign Office and other departments have had the matter under consideration, and with the object of obtaining expert opinion on various points have consulted representative medical and pharmaceutical bodies. The Government will be bound by the provisions of the Convention to enact such regulations as will prevent, as far as possible, the illicit distribution of opium, morphine, cocaine, and other drugs having similar properties; but there appears to be nothing in the articles of the Convention to compel the Government to amend the law as to the sale of poisons in such a way as to alter existing practices in connexion with the prescribing and dispensing of the narcotic drugs in question. Nevertheless, it may be found expedient, in order to enforce the spirit of the Convention, to do things which its actual terms do not require to be done; and it is evident from the nature of the inquiries that the authorities are causing to be made that the question of placing some sort of limitation on the currency of prescriptions for narcotic drugs is being seriously considered. Thus the Under Secretary for Foreign Affairs has asked the opinion of the Council of the British Medical Association on the suggestion to lay down that a medical practitioner should state in his prescription the number of times it may be dispensed and to require pharmacists to comply with this limitation under penalty. The Under Secretary has been informed that the Association has long recognised the dangers arising from the ease with which persons in this country can obtain powerful drugs by means of a medical man's prescription, and that it is of opinion that legislation should be introduced to provide for the limitation of such prescriptions in the manner suggested. This is sound advice, and the only difficulty that can be foreseen is that practitioners might occasionally forget to write the necessary instructions on their prescriptions, which could then be dispensed an unlimited number of times, as at present. This difficulty, it may be suggested, could be overcome by framing the regulations so as to require that prescriptions for narcotic drugs must only be dispensed once unless the contrary is stated in writing. The principle of the limitation of the currency of prescriptions is wholly commendable, and if it can be enforced without inconvenience in other countries there appears to be no reason why it could not be adopted in the United Kingdom.

SUBCUTANEOUS INJECTIONS OF AIR IN FIBROSITIS AND ALLIED AFFECTIONS.

IN the *New Zealand Medical Journal* for March is published a paper, read at the recent Australasian Medical Congress in Auckland, on the subcutaneous injection of air in fibrositis and allied affections by Dr. A. Douglas. The method is of French origin and appears first to have been employed by Cordier in the treatment of neuralgia and sciatica. He stated that in 25 cases of the latter he had only two failures. Dr. Douglas finds that the method, which he has used some hundreds of times, is simple and safe, and gives prompt relief. A hollow needle, which for convenience should be larger than an ordinary hypodermic needle, is used. A platino-iridium exploring needle is very suitable and can be quickly sterilised in a flame. A bulb and tube, such as are used for a throat spray, are attached to the needle. A wisp of wool was originally inserted into the tube, where it was attached to the needle in order to filter the air, but experience has proved this precaution to be unnecessary, as infection never occurs. After sterilising the needle the skin and fat are picked up and the needle is thrust well into the cellular tissue, as in giving a subcutaneous injection. The needle is then withdrawn a little so as to avoid the least risk of inflating a blood-vessel, and air is pumped into the cellular tissue. An emphysematous swelling is produced and the air can be seen to course through channels under the skin, which vary greatly with the individual and site. As the air is slowly pumped in the left hand manipulates and distributes it throughout the affected area. The amount of air used must be judged by experience. In the lumbar region the swelling should be as large as that produced by a pint of saline solution. It is desirable that a tympanitic note over the whole of the affected part be obtainable, and in the case of a big hip or thigh a considerable quantity of air is necessary. After withdrawing the needle it is good practice to massage vigorously for a few minutes so as to distribute the air thoroughly, moving it backwards and forwards through the tissues. It is sometimes necessary to introduce the needle in more than one place on account of deep attachments of the fascia limiting the injected air. Such boundaries are well marked in the middle of the back. Little pain beyond that of introducing the needle is produced, and the patient almost invariably experiences immediate relief and moves with much greater freedom. The air remains for several days and is gradually absorbed. Dr. Douglas finds that sciatica is less amenable to the treatment than is lumbago. He thinks this may be due to the fact that in a large proportion of cases of sciatica there is arthritis of the hip-joint. The explanation of the mode of action is not obvious. Dr. Douglas suggests that the air stretches the nerve terminations in the cellular tissue and acts somewhat like nerve stretching in sciatica. The following are two examples. A man, aged 30 years, subject to lumbago, had an attack in which he could not move. Air was injected, and in a few minutes he could stand and pick up articles from the floor. A man, aged 32 years, was subject to sciatica, which sometimes continued for months. He had undergone various treatments, including high-frequency currents and electric baths. For the last few years he always returned for the air treatment, which was the most effectual.

HELIOTHERAPY IN SURGICAL TUBERCULOSIS.

THOUGH the value of heliotherapy in surgical tuberculosis was pointed out many years ago by the French surgeons, Bonnet, Ollier, and Poncet, it has become a recognised method on the Continent only in recent years. In this country a beginning has scarcely been made. In the special tuberculosis number of the *Interstate Medical Journal* Dr. G. Hinsdale has described the treatment on the French coast and in the Swiss Alps. As far back as 1857 Madame Duhamel, who cared for scrofulous children at Berck-sur-Mer, had them wheeled twice a day to the beach, and after bathing them and washing their sores she refused to clothe them completely, evidently with the idea that the unobstructed exposure to sun and air would hasten their recovery. Now at this great French resort for the tuberculous free access of sunlight is deemed the essential feature of the treatment. The long galleries or balconies at the Marine Hospital are constructed for the purpose of completely exposing the body to sunlight. Here in summer the patients unclothed spend the whole time from 6 A.M. to 5 or 6 P.M. Operation wounds are exposed from the fifteenth day, but operations are exceptional and performed only as a last resort. In Switzerland the greatest impulse to heliotherapy has been given by Rollier, whose remarkable results at Leysin have attracted much attention. He carries heliotherapy a stage further than his predecessors, who exposed only diseased parts to the sun. He exposes the whole body. This he accomplishes gradually. According to the gravity of the case he allows from three to ten days after arrival in the mountains to elapse before beginning exposure. No matter what the seat of the disease—hip, spine, or cervical glands—he begins by exposing the feet to the sun for five minutes at intervals of an hour five times on the first day; on the second day similar exposures of the legs are given; on the third day the thighs are also exposed; on the fourth day the abdomen; and on the fifth day the chest, when the precaution is taken of covering the heart with a damp cloth. If the condition of the patient permits the back is also exposed to the sun. Finally, on the sixth or seventh day the head and neck are exposed. As the skin becomes pigmented the duration of the exposure is increased. Hand in hand with the pigmentation the tuberculosis is cured. Rollier has succeeded in training his patients, both children and adults, so that they live almost nude in the open air of the Alps quite comfortably. Sunlight has considerably more actinic power in the mountains than at the sea level, but heliotherapy can be successfully practised at the latter.

PLAGUE CLOUDS IN THE WEST.

AT the present time plague clouds are appearing on the horizon and threatening to approach the United States. Although some of these clouds may as yet seem small and at a considerable distance away, they cannot be altogether disregarded. We have already on many occasions called attention in these columns to the danger arising from the protracted and extensive epizootic of plague among the hordes of ground squirrels which inhabit a large part of the State of California. American as well as other epidemiologists have long recognised the risks of a human epidemic originating at any time by extension of infection from ground squirrels to local rats, which often share the same burrows, and from rats through the agency of fleas to man. From time to time sporadic human cases of plague are reported in the affected districts of California, and these instances are invariably associated with infected ground squirrels; the last reported case of the kind occurred this year in May, and was fully confirmed by bacteriological examination. To the north of California, and separated from it by Oregon, is the State of Washington, abutting on the Pacific. On the coast of this State is the rising port of Seattle, on Puget Sound, not very far from the Canadian frontier, having important connexions with the interior by means of the Northern Pacific and other railways, and having also a considerable coasting as well as trans-Pacific trade. At the end of last year plague-infected rats were discovered along the water front of this city, and notwithstanding the strenuous local efforts to suppress the epizootic, other infected rodents have been found since then, week by week, up to the present time. Only one suspected fatal case in man has so far occurred, but so long as the rat population of Seattle remains infected so long will there be danger of the disease extending to man. A few days ago information reached us that on June 28th two persons in New Orleans had been attacked by plague; since then three more attacks have occurred with two deaths. Whether the two first cases were imported or were due to existing infection smouldering unrecognised in that city it is not possible as yet to say. Unless the sanitary condition of New Orleans has been greatly improved since 1912[1] it is hardly in a satisfactory state to resist the invasion of plague. The disease has also been occurring, in a dropping fire of cases, in the West Indian island of Cuba, which is under the protection of the United States, and with which it carries on a considerable commerce. Up to the middle of June, the date of the last reports, some 22 cases had been notified in Havana, the capital of Cuba and its chief seaport; the infection had been carried thence to the town of Artemisa, 35 miles south-west of Havana, and recently an epizootic of plague in rats had been discovered in the town of Jaruco, situated 26 miles south-east of the capital. It is possible that the two first cases in New Orleans may have been associated with the plague infection now existing in Cuba, as there is much trade between these ports. Lastly, it may be mentioned, in view of the increasing connexions now being established between the United States and the Isthmus of Panama, that plague, said to be of the pneumonic type, has been for some time and is still manifesting itself in Colombia, of which State the Panama Canal zone at one time formed part before its transfer to the United States. The correctness of the diagnosis of plague in the Colombia cases has been denied, but it has to be remembered that many of the South American Republics make a practice of denying point blank the existence of plague and yellow fever within their borders in order to escape the inconveniences of quarantine. On the other hand, from a trustworthy source comes the definite statement that the diagnosis of plague has been confirmed by bacteriological examination both of the sputum and the blood of several patients. It is also asserted that "cases of pneumonia of an infectious kind," nearly all of them fatal, have been occurring along the Colombian coast of the Caribbean Sea for more than a year, their true character and their relationship to plague not having been recognised until now. In the face of these facts it can scarcely be disputed that there are plague clouds threatening the United States, and it would appear that this has been officially recognised. Several articles on plague have lately been published in our American contemporary, *Public Health Reports*, the official organ of the United States Public Health Service, and in one of them the danger arising from the infected ground squirrels in California and the plague-stricken rats at Seattle is freely admitted, as also the advisability of giving exact information concerning the disease as far as practicable to all persons who may at very short notice be called upon to take their part in a comprehensive anti-plague campaign. For this purpose one of the articles, under the title of "Fleas and Plague," gives an account of the important series of experiments carried out by Bacot and Martin, of the Lister Institute, under the direction of the Commission for the Investigation of Plague in India, the results of which have added so materially to our knowledge of the mechanism of the transmission of plague by the rat-flea, and to which we have already directed attention in our issue of April 4th, 1914, p. 975. Another of the articles in *Public Health Reports* deals with some of the difficulties met with in the diagnosis of plague, mention being specially made of cases in which plague has been mistaken for filariasis; and an instance is quoted where a patient really suffering from filarial lymphangitis was thought to have genuine bubonic plague. The attention of practitioners in regions such as the West Indies, where filariasis occurs, was specially called to these cases. The Public Health Service of the United States has in its ranks a large number of highly trained and competent medical officers many of whom possess special experience of plague gained in various parts of the world. The services of these experts would at once be available in the event of the disease showing any tendency to extend beyond its present limits. Against this, however, is the assertion, made by those who apparently know, that some of the towns and districts likely to be invaded, if the infection spreads, are hardly in a satisfactory sanitary condition such as would enable them to repel successfully the insidious onset of plague. Perhaps the present season of the year is not altogether favourable for the immediate spread of plague in North America, but there is always the risk that the infection may gain a footing in one or more places where, under favouring conditions, later on it may break out with renewed virulence and spread to more populous districts in the interior.

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[1] See THE LANCET, August 10th, 1912, p. 394.

THE PARALLELISM OF CAUSES OF DEATH.

THE comparative constancy of the death-rate from various diseases is suggested in a remarkable manner by a table issued by the New York Life Insurance Company. This table gives the causes of death of 8549 of the company's insured who died during the year 1912. We have received from the company a similar statement for the year 1913, and it is the close parallelism in the ratio of deaths from particular causes to the total death-rate that is of interest. We quote the figures in parallel columns:—

Causes of Death among 8549 Insured People who Died during 1912 and 8793 who Died during 1913.

	1912.	1913.
Heart disease	1060	967
Consumption	905	967
Bright's disease	870	931
Pneumonia	700	673
Cancers and tumours	631	660
Apoplexy	603	641
Accidents	458	488
Diseases of digestive organs	309	289
Diseases of arteries	305	271
Paralysis	283	286
Liver disease	222	194
Bronchitis, pleurisy, &c.	179	209
Diabetes	176	158
Typhoid fever	154	140
Blood poisoning, anæmia, &c.	144	148
Spinal disease	131	107
Appendicitis	116	117
Old age	64	63
Nervous prostration, congestion of brain, &c.	40	29
Rheumatism	34	36
All other causes	1165	1419
Total	8549	8793

The extra 244 deaths in 1913 are all accounted for in the last item, all other causes, which exceeds in 1913 by 254 the number under that heading in 1912. Some of the correspondences are very remarkable—e.g., rheumatism 34 and 36, appendicitis 116 and 117, blood conditions 144 and 148, paralysis 283 and 286. But throughout the table the parallelism is remarkable, and it is particularly worthy of notice that old age accounts for only 64 and 63 deaths respectively in the two years. Among the specific infectious diseases it is noteworthy that only consumption, which is second on the list, with ratios of 11·7 and 10·9, and typhoid fever, with ratios of 1·8 and 1·59, are especially classified, from which it is fair to conclude that none of the others have a ratio sufficiently large to justify their removal from the class of all other causes. The same remark applies to the venereal diseases. These causes of death, of course, are the immediate causes; it is only natural to suppose that rheumatism and perhaps other fevers and syphilis were remotely responsible for some of the large number of deaths from heart disease and some other conditions.

THE CLINICAL AND SEROLOGICAL EXAMINATION OF SYPHILITIC FAMILIES.

The latest number of the *Deutsche Zeitschrift für Nervenheilkunde* is a *Festschrift* contributed by former and present assistants in honour of the jubilee of the well-known General Hospital of Hamburg-Eppendorf, and edited by Professor Dr. Nonne, in whose division of the hospital these assistants have worked. It contains a variety of papers of considerable neurological interest, of which a number, as might be expected from the fact of Dr. Nonne's superintendence, deal with syphilitic disease of the nervous system. Dr. Nonne himself contributes an article on the significance of examination of the cerebro-spinal fluid for the prognosis of cases where the only clinical symptom is an affection of the pupil. There is a paper on the earliest diagnosis of syphilitic invasion of the central nervous system, by Dr. Hauptmann, and another on syphilis as an antecedent in dementia præcox, by Dr. Meggendorfer. Attention may be drawn in detail to a contribution by Dr. Wilhelm Raven, on the serological and clinical investigation of syphilitic families. No fewer than 117 families have been examined, of each of whom at least one member was at one or other time an inmate of the hospital. In as many of the parents and children as could be reached a complete routine serological investigation and clinical examination were made. Not more than 27 members of these 117 families were completely normal; expressed in other words, only in 23 per cent. of the families subjected to examination was the syphilitic infection found to have been strictly confined to the individual first infected. In 77 per cent. it had been communicated to others of the family. To take the condition in the parents first: in 65 families where only one parent originally suffered from syphilis, 64 of the parents originally infected (father or mother) showed syphilitic disease or gave a positive Wassermann reaction in the blood. Of the parents not originally infected (mother or father as the case might be) 30, or 46 per cent., suffered from syphilitic nervous disease, 16, or 24 per cent., had a positive Wassermann reaction in the blood, while only 19, or 29 per cent., were normal. The condition of the children was investigated in 82 families; 8 out of 90 families were sterile. In these 82 families the results of 350 pregnancies were obtained. 47·7 per cent. ended in miscarriages or premature births and deaths in infancy; 52·3 per cent. children lived; of these, only 16·5 per cent. were fully normal, while 35·8 per cent. were pathological. Dr. Raven has obtained evidence to show that the more severe the syphilitic infection of the parents the less severe is the form it will take in the children; and *vice versâ*, where one parent (mostly the mother) has remained healthy, there the largest percentage of diseased children has been met with. These data do not agree with the findings of Hochsinger and others. They may be taken to suggest that the virulence of the syphilitic virus diminishes with its passage through the parents; the more intensive that passage, the less potent the effect of the virus on the descendants. Another interesting set of statistics concerns the matter of the bearing of paternal as opposed to maternal infection on the health of the progeny. This question was investigated in 72 families. In 52 the father was originally infected, and 154 pregnancies were recorded in the group; 17·5 per cent. were healthy children, 34·4 per cent. had signs (somatic or serological) of syphilis, 23·3 per cent. were stillbirths or died in infancy, and 24·6 per cent. were miscarriages. On the other hand, in the remaining 20 families the mother was originally infected; 74 pregnancies were in this group, of which only 5·4 per cent. resulted in healthy children, 20·2 per cent. were pathological, 32·4 per cent. died in infancy or were deadborn, while 41·8 per cent. were abortions. Thus about one-half of the children of the diseased fathers lived, but only about one-quarter of the mothers'; about one-third of the fathers' children that lived were healthy, but only about one-fifth of the mothers'. Speaking generally, the first, second, and third children of the infected families were more severely hit by the inherited disease than any others that might follow. However, not a few exceptions to this generalisation were noted. A healthy child, as Fournier said, is no guarantee for the health of the next arrival. Of a totality of 119 children of infected families, 10 per cent. suffered from organic nervous disease or were mentally abnormal; 37 per cent. showed various stigmata of degeneracy, and an additional 10 per cent. with stigmata had also a positive Wassermann reaction in the blood; 11 per cent. had a positive Wassermann reaction only, while 30 per cent. were normally healthy. Up to about the sixteenth year after parental infection congenitally diseased children may appear; thereafter any children born of the marriage are less likely to reveal any somatic or serological defect. The figures given by Dr. Raven are of value and deserve careful consideration. The conclusions are that persons who suffer from syphilitic nervous disease—spirochæta carriers—are actively infective; that syphilis is no less dangerous during a so-called latent period; that the presence of a positive Wassermann reaction in the blood can never be other than a serious indication of disease and of the necessity for treatment; otherwise syphilis will continue to descend upon the children to generation after generation.

The Home Secretary, acting upon the recommendation of the Prison Commissioners, has appointed Miss Selina Fox, M.D., at present superintendent of the Bermondsey Medical Mission, to be Lady Superintendent and Deputy Medical Officer of the institutions for women at Aylesbury, comprising the female convict prison, the Borstal Institution for Females, the State Inebriate Reformatory for Women, and the Preventive Detention Prison for Women.

Death of a Veteran Practitioner.—Mr. Henry Richard Foquett, M.R.C.S. Eng., L.S.A., of Portland-street, Ilfracombe, died on June 24th, from the result of a cycle accident, in his eighty-fifth year. Mr. Foquett, who qualified in 1852, practised in Ilfracombe for about 50 years, but retired from active work some years ago.

THE BOUND FEET OF THE CHINESE WOMAN.

THE accompanying skiagrams were taken in Shanghai, and have been sent to us by the operator on the recommendation of Dr. F. M. Neild. We publish them with pleasure, as it is not at all easy to get a Chinese woman to submit to photographic processes, while the skiagrams well reveal the distortion caused by bandaging the feet.

The practice of binding the feet of Chinese women is still very prevalent among the better classes, in spite of all that is being done by the "Anti-footbinding Association." The spread of foreign ideas and familiarity with medical science have had some effect, but the barbarous custom still holds its own. The origin of the custom is put down by some people to the desire to emulate a certain club-footed Empress of China, and by others simply as a device of the Chinese men to prevent their women-folk from running away from home. Either motive is so consonant with Chinese ideas that it is quite likely that both have had their influence.

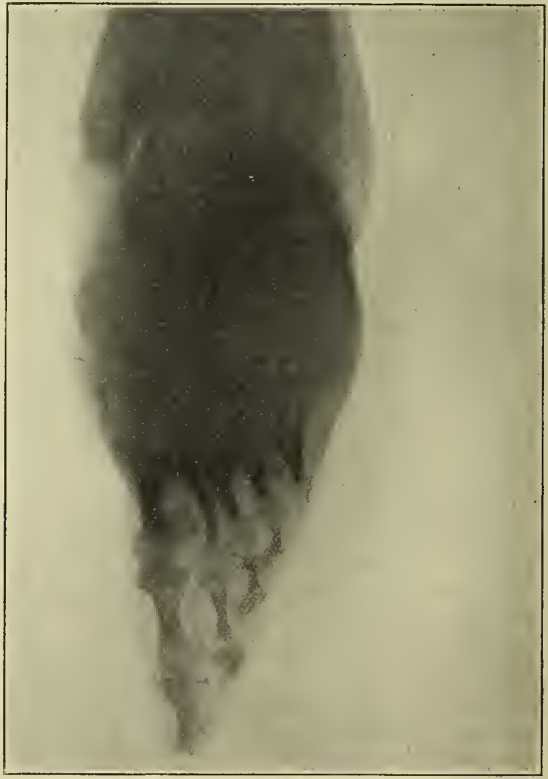
The feet are bound at the age of five or six years with strips of strong cotton material, eight or nine yards in length and about four inches wide. The bandages, once on, are not removed for some years.

Frequently the child suffers terribly, especially at night, when the feet swell with the warmth induced by sleep. Medical information on any sequelæ that may follow the treatment is not at all voluminous. That gangrene may be induced in a certain number of instances is obvious.

Women on becoming Christians usually unbind their feet, and they have stated that this process is more painful than that of binding. The lady to whom we owe the chance of publishing the skiagrams of a bound foot sends the following communication with them:—

A Chinese woman of high rank lately went to an English medical practitioner in Shanghai, saying that she had heard that small feet were no longer fashionable, so she wished her feet to be made into their proper shape again. It was impossible to convince her that it could not be done. The process of unbinding has to be done very gradually, and signs of mortification are not unknown.

FIG. 1.



Reproduction of photograph of Chinese woman's bandaged foot from the front.

The pictures tell their own story, showing clearly how some bones have been compressed by bandaging, while others appear abnormally enlarged owing to their want of adaptation in their artificial positions. The owners of small feet are extremely reticent about them, and it is considered to be the height of immodesty to let a stranger see a bare unbound foot. The woman to whom the foot here shown belonged was an *amah* or children's nurse in an English family, and somewhat inured to European ideas, but she required a great deal of persuasion before she allowed the picture to be taken, and was afterwards looked upon with horror by her friends as a woman who had disgraced herself by her action.

Mr. Muirhead Little, to whom we submitted these illustrations, writes:—

Since the discovery of the Roentgen rays a certain number of radiographs of Chinese women's feet have been taken, and I had one in my possession for some years, but none of them, I believe, have been representative of the highest degree of distortion. As a really small bound foot renders its owner almost incapable of locomotion, it follows that only the well-to-do can afford this doubtful luxury, and as a fact it is only in the wealthiest and most distinguished families that such feet are found. As your correspondent suggests, such ladies will not allow their feet to be examined, still less photographed, and all the radiographs have been taken from women of the working-class whose feet are only moderately deformed, allowing them still to carry out the duties of domestic service.

Until recently, when the Anti-footbinding Association has made great progress, a Chinese woman with natural feet was considered disreputable, and the normal foot was associated with all that is vile. Sensible Chinese parents recognised the evils of the custom, which they dare not depart from for fear of the social ostracism of their daughters. Mr. Archibald Little[1] wrote some 30 years ago: "Mine host appeared with his little daughter .... She was a little *chétive* thing of 10 years, but from her size looking much younger, and so pale that I asked her father whether there was anything the matter with her. He said, 'No, but she was suffering from her feet.' .... Hers were bandaged up until they looked more like those of a doll than the feet of a human being, and the poor child never attempted to walk without holding on to someone's hand, and was always carried up and down the flights of steps which led from one courtyard to the other. My host, like other Chinamen with whom I have conversed on the subject, agreed that it was a pity for the children that such a custom existed. ....With the exception of the boatwomen in the south (the Han-shui-mei), and the aboriginal tribes in the west, as also perhaps a few beggars and outcasts, all the women of China, poor as well as rich, are crippled in this barbarous fashion." At the same time it must be remembered that the women of the Imperial family of China, and those of the Manchu nobility

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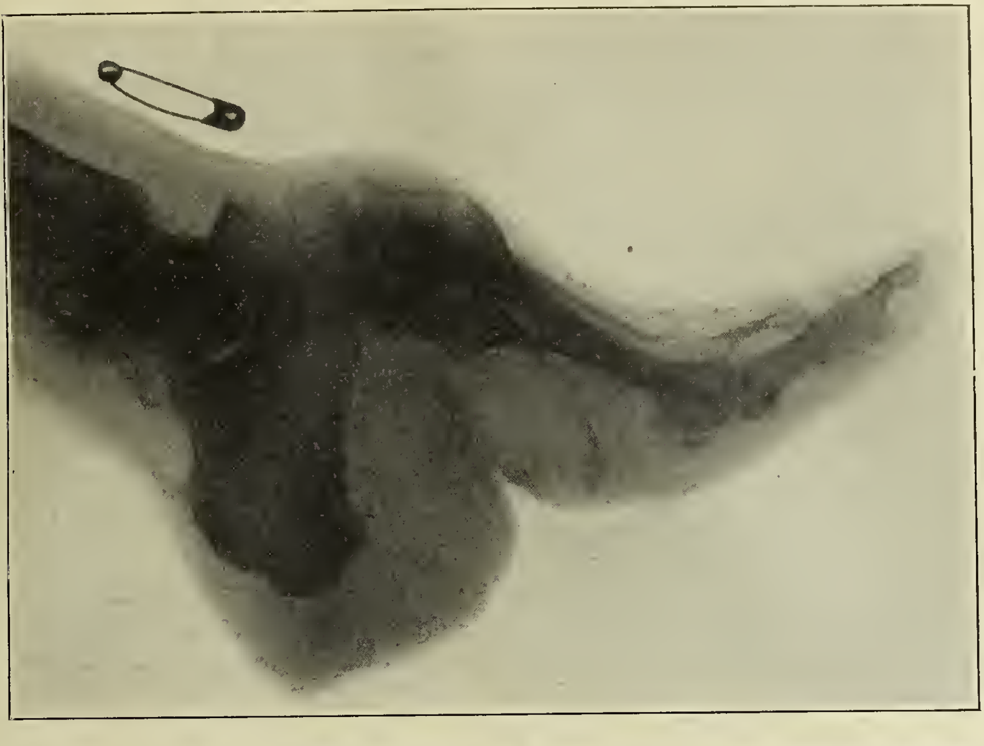
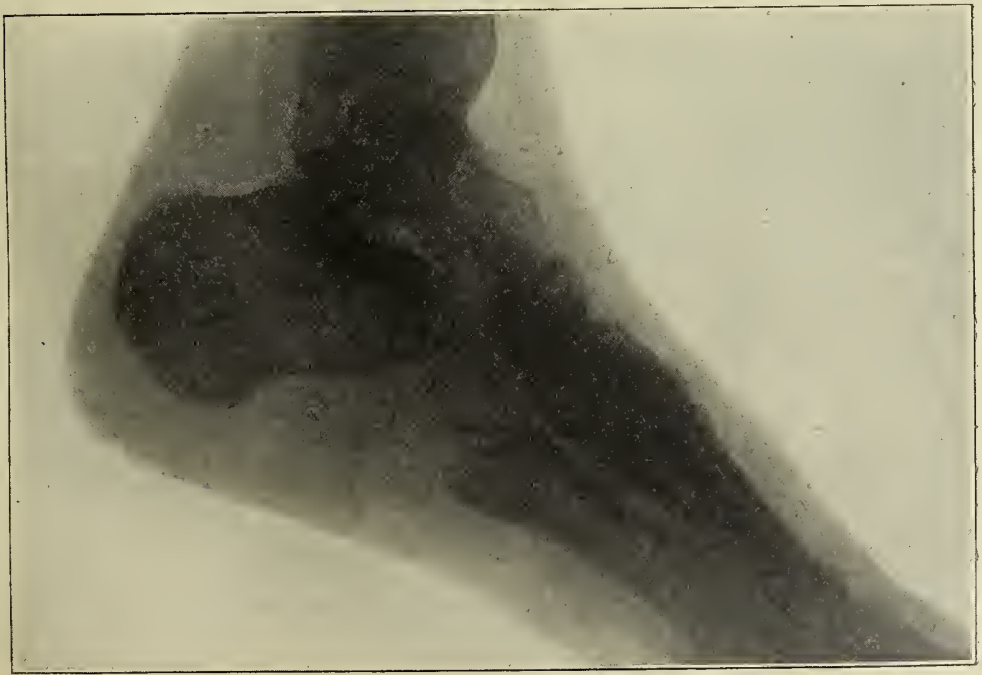
[1] Through the Yangtse Gorges, second edition, London, 1888.

FIG. 2.



Chinese woman's bandaged foot in profile. The subject was resting on her back with her foot protruded in front of her.

FIG. 3.



Foot of an English woman, showing proper position and relation of bones to each other.

who are allied to them by race, have never bound their feet. When in 1644 the Manchu Tartars conquered China they imposed the Tartar pigtail on the Chinese, but although they obliged the subject race to copy their head-dress they did not themselves adopt the ancient Chinese custom of footbinding. As the Manchu garrison was designedly kept apart and made into a noble caste, the difference in the feet of the women no doubt helped to mark the gulf between conquerors and conquered, but it is remarkable that the Chinese should have been devotedly loyal to more than one Empress, whose unbound feet in one of their own ladies would have been horribly disgraceful and indecent. Flattery and imitation do not always go together, at least not in the Far East.

The effect of footbinding on health, and the contrast between the "slender listless appearance of young Chinese girls" and the "robust sturdy look of a Manchu family" whose acquaintance he made in Western China, very much struck Mr. Archibald Little before he noticed their feet, and he was at first at a loss to account for it.

Although the Manchu women's feet are not bound, they often wear shoes with very high heels placed right under the middle of the foot. These seriously hinder walking, and I am informed by an eye-witness that the late notorious Dowager Empress was so crippled by her shoes that she always rested both hands on the shoulders of her attendants when she had occasion to move about the audience hall.

As the skiagrams show, compression of the feet is obtained by producing two main distortions. In the first place, the foot is shortened by acute plantar flexion, chiefly at the transverse tarsal, but also at all the other joints of the tarsus and at the tarso-metatarsal articulations; thus the foot is forced into a position of talipes calcaneus. In the second place, the foot is compressed laterally, and the four outer toes are folded under the sole so that the end of the little toe may project beyond the inner (median) border of the metatarsal bone of the great toe. The proper dorsal surface of the outer toes will thus look downwards in the erect position and be exposed to pressure in walking. Obviously this must be a source of pain and cause of disability.

The reference to gangrene reminds me of an incident related by Dr. Kerr, for many years a medical missionary at Canton. A Chinese lady consulted him about her feet "Both .... had mortified off through binding; she had, however, brought them with her—*in spirits*—and now wanted the foreign doctor who could do such wonders to fasten them on for her again."[2]

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[2] In the Land of the Blue Gown, by Mrs. Archibald Little, London, 1912.

FOURTEENTH FRENCH CONGRESS OF MEDICINE.—This Congress will be opened at Brussels on Sept. 30th in the afternoon, under the patronage of H.M. the King of the Belgians. Professor Henrijean will preside. In the evening there will be a presidential reception. The subjects on the programme are:—Oct. 1st: Cardiovascular Syphilis (M. Bayet, Nantes; M. Etienne and M. Spillman, Nancy; M. Vaquez and M. Laubry, Paris); Vaccinotherapy in General and the Special Vaccinotherapy of Cancer and Typhoid Fever (M. O. Gengou, Brussels; M. Chantemesse, Paris; M. Bruschettini, Genoa; M. Vincent and M. Doyen, Paris). Oct. 2nd, general session: The Therapeutic Value of Artificial Pneumothorax (M. Burnand, Leysin; M. Derscheidt and M. Geeraerd, Brussels; M. Dumarest, Hauteville; M. Kuss, Angicourt; M. M. L. Rénon, Paris). Sectional communications by M. Bernheim and M. Jaworsky, Paris. In the evening there will be a rout at the Hôtel de Ville de Bruxelles by the Communal Administration. Oct. 3rd, general session: The Lipoids in Pathology (M. Edg. Zunz, Brussels; M. Chauffard, M. Guy Laroche, and M. Grigaut, Paris; M. Linassier, Vichy; M. J. Bordet, Brussels; M. N. Waterman, Rotterdam). In the afternoon various communications will be offered. On Sunday, Oct. 4th, there will be an excursion to Spa. The subscription for attendance at the Congress by medical non-members is 20 francs, for students 10 francs. The usual reduction of 50 per cent. will be made on the French railways. The treasurer of the Congress, to whom subscriptions should be sent, is Dr. Godart Danhieux, 9A, Rue Montoyer, Brussels, and the general secretary is Professor René Verhoogen, 22, Rue Joseph II., Brussels.

"THE LANCET" HYGIENIC TEST FOR GAS FIRES.

JUDGING from the considerable correspondence which we have received from various well-known makers of gas fires, the test originated in THE LANCET Laboratory for arriving at the hygienic efficiency of these fires and described for the first time in these pages on Feb. 7th, 1914, has met with general approval and wide acceptance. In a report subsequently published in THE LANCET of April 4th, 1914, the results of the examination by this test of a number of gas fires then upon the market were presented. The list of gas fires examined was a very representative one, but we stated at the time that any omissions would be repaired in a subsequent article if the makers would submit any new designs claimed to be an advance on existing types.

This invitation was accepted, and within a week of the publication of the report Messrs. John Wright and Co., of Essex Works, Aston, Birmingham, submitted to us 12 of their 1913 pattern stoves, which, as the following results show, passed the requirements of THE LANCET test perfectly, even when no flue length was attached to the flue nozzle. There was no forward escape of combustion products at all. In the following table the straight lines represent the rim of the canopy of the stove, which was tested at five different points. The lines are only drawn straight for diagrammatic purposes and for the convenience of printing, and do not necessarily represent the shape of the canopy, which may have a straight or curved rim, as the case may be. Where the sign "o" occurs it signifies no leakage; in the event of leakage the sign + is used.

"THE LANCET" TEST OF GAS FIRES (John Wright and Co.).

Name of fire	*Standard.*	*Swastika.*	*Forum.*	*Druid.*
Without elbow ...	ooooo	ooooo	ooooo	ooooo
2-ft. elbow attached	ooooo	ooooo	ooooo	ooooo

Name of fire	*Herald.*	*Sorcerer.*	*Merlin.*	*Talisman.*
Without elbow ...	ooooo	ooooo	ooooo	ooooo
2-ft. elbow attached	ooooo	ooooo	ooooo	ooooo

Name of fire	*Warlock.*	*Stadium.*	*Mascot.*	*Wizard.*
Without elbow ...	ooooo	ooooo	ooooo	ooooo
2-ft. flue attached ...	ooooo	ooooo	ooooo	ooooo

Further experience of the test shows that certain precautions are necessary in applying it. It proves to be very delicate, and a gas fire which gives absolutely negative results with it has passed through a severe ordeal. Occasionally a leakage is shown at the extreme ends of the canopy, which often proves to be due to a slight external draught. In order to obviate this disturbance it has been found necessary to protect the stove from such outward disturbances by placing it within a three-way screen, the wings of which keep draughts away from the field of combustion or from the exit nozzle. This accounts for a discrepancy in the previous report, in which apparently the Merlin stove of Messrs. John Wright showed a slightly increased leakage after a 4-ft. length of flue had been attached, whereas with a 2-ft. flue, which should render less assistance to the ventilation of the combustion products, the results seemed to be better. In either case, however, the leakage was so small as to be hygienically negligible, and the fact that it was only occasional pointed to an external disturbing factor. During the test, therefore, the fire should be protected from draughts. In the test, it may be remembered, an absorbent pencil, made, for example, of chalk, is soaked in carbon tetrachloride and placed near the air inlet of the gas fire. Traces of carbon tetrachloride are thus drawn into the burners, with the result that on combustion hydrochloric acid is produced, which, although present in small proportion, is readily detected by coming into contact with ammonia, forming dense fumes of ammonium chloride. If, therefore, the products of combustion are "by-passing," this will instantly be shown by fumes being produced when an open tube containing strong ammonia solution, or a sponge soaked in the solution, is placed at various points along the rim of the canopy.

We have also received from Messrs. Arden, Hill, and Co., of Acme Works, Birmingham, four gas fires for test. The results are given in the following diagram. They show, again, that these fires are so constructed as to permit of no escape of combustion products at all except by way of the flue nozzle, and the attachment of a 2-ft. length of flue was not necessary in any case.

"THE LANCET" TEST OF GAS FIRES (Arden, Hill, and Co.).

Name of fire	*Gnome.*	*Loka.*	*Olak.*	*Kalo.*
Without elbow ...	o o o o o	o o o o o	o o o o o	o o o o o
2-ft. length attached	o o o o o	o o o o o	o o o o o	o o o o o

These results justify our expressed conclusion that "the present attitude of the gas fire industry towards all questions of improvement is a most satisfactory one, and our inquiry shows that we may fairly expect in the near future an encouraging and hopeful issue." Progress in the direction indicated will mean that no reproach based on hygienic considerations against the radiant system of gas heating can remain. We are still conducting tests with fires received from other makers, and we shall publish the results from time to time as the experiments are completed.

ST. MARY'S HOSPITAL. — The annual old students' dinner in October next will be presided over by Sir Almroth Wright.

THE PARLIAMENTARY COMMITTEE ON FOOD AND HEALTH AND THE MILK AND DAIRIES BILLS.—At a meeting of the Parliamentary Committee on Food and Health, held at the House of Commons and presided over by Mr. Charles Bathurst, M.P., the following resolution was moved by the chairman, seconded by Sir W. Phipson Beale, M.P., and carried unanimously:—

> The Parliamentary Committee on Food and Health cordially supports the Milk and Dairies Bill and Milk and Dairies (Scotland) Bill as measures designed to secure to the community an unrestricted supply of pure milk with the minimum amount of interference with the producer. While recognising them to be capable of improvement in some details, it earnestly deprecates the insistence on drastic amendments as calculated gravely to imperil the passage of Bills long overdue and of vital importance to the health of the people and especially of the children. The committee trusts, however, that a clause sanctioning the sale of "certified milk," which in the United States has played so conspicuous a part in raising the milk standard and in forming public opinion in favour of clean milk, will, by general consent and in the interests alike of producers and consumers, be included in both measnres.

Additional copies may be obtained by forwarding a stamped addressed envelope to the secretary, 178, St. Stephen's House, Westminster, S.W.

SEVENTEENTH INTERNATIONAL CONGRESS OF MEDICINE (LONDON, 1913).

A FINAL meeting of the organising committee was held at 11, Chandos-street, Cavendish-square, W., in the rooms of the Medical Society of London, on Tuesday, July 7th. The President and 19 other members were present. The minutes of the last meeting were read and confirmed. Letters of regret for absence from several members were read. The following report of the finance committee was received, adopted, and ordered for entry on the minutes.

Report of the Finance Committee.

A subscription list towards the general expenses of the Congress was opened on Nov. 20th, 1910, and this list continued open until the date of the meeting in August, 1913.

Subscriptions thereto were received from 1613 individual members of the profession. Contributions were also generously made by the Royal College of Physicians of London, the Society of Apothecaries of London, the Royal College of Physicians of Edinburgh, the Royal College of Surgeons of Edinburgh, the Proprietors of THE LANCET, the Worshipful Companies of Merchant Taylors, Goldsmiths, Clothworkers, and Salters, also by Lady MacCormac, and Lady Butlin.

The total sum of £5418 5*s.* 7*d.* received from these sources was further augmented by £2834 4*s.* 4*d.*, the profit derived from the Congress Exhibition, and a sum of £195 3*s.* 11*d.* accruing from various sources, such as the sale of materials temporarily employed in the organisation of the central office and museum, and the interest on money placed upon deposit with the bankers.

To the above sums remains to be added £6494 11*s.* 9*d.* received in membership fees. Thus in all a grand total of £14,942 5*s.* 7*d.* was obtained.

An estimate of probable receipts and expenditure submitted by the honorary treasurers to the finance committee at an early date proved practically accurate as far as the expenses of organisation and the various sources of income are concerned. With regard, however, to the matter of entertainment, it should be noted that the reception committee undertook only a single evening conversazione, and that as on previous occasions the executive committee was largely indebted to the generosity of private individuals and public bodies for the highly successful social gatherings which took place. Mention of the various public bodies who gave invaluable help, both in affording accommodation for the meetings of the sections and in the exercise of hospitality, has already been made in the preface to the general volume of the Transactions. The estimate assumed further that, as on previous occasions, the sum received by payment of fees by members would suffice to meet the expenses of printing, publishing, and distributing the volumes of the Transactions of the Congress. When, however, the great mass of material afforded by the original papers and the discussions thereon came into the hands of the editors, a provisional estimate was asked for from the publishers as to the cost of printing and distribution. From that estimate, as submitted to the finance committee, it appeared obvious that the balance lying to the credit of the honorary treasurers would prove insufficient for the purpose for which it had been reserved. This insufficiency depended not only on the great mass of material to be printed, but also on the heavy cost to be entailed by the distribution of the volumes to members, so large a proportion of whom reside either on the continent, in America, or in the dominions beyond the seas.

The finance committee therefore decided to make an appeal to the officers of each section and subsection, and thus endeavour to raise from each an additional sum proportionate to the size of the section or subsection concerned, and to the expense incurred in printing and distributing its volume of the Transactions. The ready help afforded by all the sections (excepting those of orthopædics and dermatology, from whom no contributions have been received) towards meeting the expected deficiency resulted in the collection of £646 0*s.* 6*d.* In consequence, however, of editorial curtailment of some of the papers and discussions, and the unexpected receipt of a sum of £347 0*s.* 7*d.* by sales of the Transactions (up to date), the publishers' provisional estimate proved to have been excessive, with the result that the honorary treasurers found themselves with a balance of £337 19*s.* 8*d.* at the bank, as well as with a credit balance with the publishers of £59 2*s.* 4*d.* Since the sum realised by the special appeal was subscribed for the exclusive object of completing the Transactions, the finance committee decided that the balance of the money should be returned to the respective donors in proportion to the amount subscribed, and this decision has been already carried into effect. It may be noted that in spite of considerable curtailment the volumes of Transactions extend to the formidable total of 12,498 pages. The finance committee wishes to draw special attention to the remarkable promptitude and success with which this great undertaking has been carried out by the editorial secretaries of sections and the editorial committee, and also to the excellence with which the volumes, printed in three languages, have been produced, in a space of little more than six months, by the Oxford Press.

Now that all expenditure has been met, a sum of £49 1*s.* 2*d.* lies in the hands of the treasurers, which may still be slightly augmented by the sale of further copies of the Transactions, and it remains for the general committee to decide what shall be done with the eventual balance.

Mr. D'ARCY POWER moved, and the GENERAL SECRETARY seconded, and it was resolved that the following gentlemen be nominated as members of the National Committee of Great Britain and Ireland for the purposes of the International Congresses of Medicine, with power to add to their number: Dr. Theodore Dyke Acland, Sir Clifford Allbutt, K.C.B., Professor F. W. Andrewes, Sir Charles Ball, Bart., Mr. C. A. Ballance, M.V.O., Professor H. G. Barling, Sir James Barr, Dr. E. F. Bashford, Sir A. A. Bowlby, C.M.G., Mr. Stanley Boyd, Sir J. Rose Bradford, K.C.M.G., Dr. Mitchell Bruce, Sir Lauder Brunton, Bart., Dr. Dudley Buxton, Sir John Byers, Sir Francis H. Champneys, Bart., Sir Havelock Charles, G.C.V.O., Mr. Arthur Cheatle, Sir W. Watson Cheyne, Bart., C.B., Sir T. S. Clouston, Mr. Treacher Collins, Sir James Crichton-Browne, Sir Anderson Critchett, Bart., C.V.O., Sir Halliday Croom, Sir Bertrand Dawson, K.C.V.O., Dr. J. Gordon Dill, Professor A. F. Dixon, Sir Dyce Duckworth, Bart., Sir Frederick Eve, Mr. Hurry Fenwick, Sir David Ferrier, Dr. Magee Finny, Sir J. Kingston Fowler, K.C.V.O., Professor Sir Thomas Fraser, Dr. Galloway, Dr. Garrod, Sir Alfred Pearce Gould, K.C.V.O., Dr. Dundas Grant, the Director-General of the Medical Department of the Navy, the Director-General of the Army Medical Service, the Medical Adviser to the India Office, Dr. de Havilland Hall, Dr. C. O. Hawthorne, Sir Wilmot Herringham, Sir F. W. Hewitt, M.V.O., Mr. W. H. H. Jessop, Dr. Robert Armstrong-Jones, Mr. Robert Jones, Sir Alfred Keogh, K.C.B., Dr. Percy Kidd, Mr. Ernest Lane, Sir Arbuthnot Lane, Bart., Mr. J. B. Lawford, Colonel Sir William B. Leishman, Professor J. A. Lindsay, Professor Alexander Macalister, Sir Donald MacAlister, K.C.B., Sir Wm. Macewen, Sir John McFadyean, Mr. G. H. Makins, C.B., Professor Howard Marsh, Dr. Mercier, Sir J. W. Moore, Sir Henry Morris, Bart., Sir Malcolm Morris, K.C.V.O., Dr. F. W. Mott, Sir Berkeley G. A. Moynihan, Sir Shirley Murphy, Professor G. R. Murray, Sir T. Myles, Dr. Newsholme, C.B., Sir Thomas Oliver, Sir William Osler, Bart., Sir George Hare Philipson, Mr. D'Arcy Power, Sir James Reid, Bart., G.C.V.O., K.C.B., Professor Arthur Robinson, Dr. Rolleston, Sir Ronald Ross, K.C.B., Dr. Amand Routh, Dr. F. M. Sandwith, Professor R. Saundby, Sir Edward Schäfer, Mrs. Scharlieb, Sir Felix Semon, K.C.V.O., Sir Seymour Sharkey, Professor S. G. Shattock, Professor Sherrington, Professor T. Sinclair, Dr. Percy Smith, Dr. Herbert Spencer, Dr. Squire Sprigge, Professor Starling, Dr. G. F. Still, Dr. G. A. Sutherland, Mr. Charters Symonds, Dr. Fred. Taylor, Professor Alexis Thomson, Professor Arthur Thomson, Sir StClair Thomson, Professor Thorburn, Sir John Tweedy, Mr. E. F. White, Dr. Hale White, Professor Sinclair White, Sir Arthur Whitelegge, K.C.B., Sir William Whitla, Dr. Dawson Williams, and Sir Almroth Wright. President: Sir Thomas Barlow, Bart., K.C.V.O. Secretaries: Dr. Clive Riviere, 19, Queen Anne-street, W., and Mr. H. J. Paterson, 9, Upper Wimpole-street, W.

The following resolutions were passed by the meeting arising out of the report:—

1. That it be left to the officers of the Congress to decide how the eventual balance from the general funds should be disposed of.
2. That the Royal Society of Medicine be asked to deposit the minute books and other records of the Congress in their library.

The meeting terminated with a brief speech from the President, Sir THOMAS BARLOW, expressing the gratitude of all concerned in the working of the Congress to the secretaries of the various sections, and especially to the secretary-general, Sir Wilmot Herringham.

PUBLIC HEALTH ADMINISTRATION IN EGYPT DURING 1913.

Earl Kitchener, in his Report on the Finances, Administration, and Condition of Egypt and the Sudan in 1913, publishes an annual summary of progress, in continuation of the intellectual and literary reports with which Lord Cromer used to charm us.

In spite of the abnormally low Nile of 1913, followed by a shortage of water which was the worst on record for more than a century, the year's progress was far more satisfactory than might have been anticipated. Famine, the necessary accompaniment in the past of a very low Nile flood, was averted by the thickening and heightening of the Assuan dam, which fortunately had just been completed. Sanitary improvements depend upon the state of the Treasury, and funds in rainless Egypt are dependent upon agriculture, which in its turn requires every year a wealth of Nile water.

The Public Health Department.

Space compels us to restrict ourselves to the Public Health Department, which now, for the first time in its history, has a strictly scientific Director-General in Sir David Semple. In order to give him a freer hand for dealing with the endemic diseases of the country two sections have been pruned away; the two lunatic asylums have been made into a separate department under Dr. J. Warnock, and the veterinary section and school have been transferred to the Ministry of Agriculture. History in Egypt invariably repeats itself, and a new Board of Health, with consultative and advisory powers only, has been created to assist the Director-General. We may hope that it will prove more useful than its predecessor, which came into existence in 1825 and was abolished in 1884, chiefly because it was incompetent to deal with the cholera epidemic which devastated Egypt soon after our occupation of the country.

For many years the energy of the Public Health Department has been principally occupied in fighting three epidemic diseases—plague, cholera, and rinderpest; but Lord Kitchener has now decreed that the chief endemic diseases, such as ankylostomiasis, bilharziasis, pellagra, and typhus fever, must be seriously studied and taken in hand. He rightly points out that the equipment of hospitals for treating the sick does not strike at the root of the evil, and that preventive measures must begin with village sanitation. He has already persuaded the villagers to fill up many of their ponds, which are fruitful sources of bilharzial and other infection. The land thus reclaimed is useful for providing open spaces for the inhabitants of the villages, which consist of overcrowded mud huts, unventilated, and for the most part unprovided with latrines. With the help of prison labour 109 ponds, with an area of 98 acres, were filled in during the year. The lines upon which he thinks sanitary progress in the villages should proceed are (1) education of the people in the causes and prevention of their common diseases; (2) formation of partly trained inspectors of the sergeant class to work under the district doctors; (3) improvement of houses and water-supply, with the gradual introduction of simple latrines.

Travelling Hospitals: Campaign against Ankylostomiasis.

The success of the travelling ophthalmic hospitals and dispensaries, which take the operator and treatment into the heart of the country, has been so great that the Public Health Department determined to imitate this system, and accordingly last September a temporary ankylostoma hospital was opened outside the town of Kaliub, about one hour's distance by train from Cairo. The ankylostomiasis campaign will also include investigation into bilharziasis and pellagra, because the unfortunate peasant is often the victim of all three scourges, and in order to ensure that it be started with all proper experience of organisation and of the habits and customs of the people it has been placed directly under the control of Mr. A. F. MacCallan, who will, therefore, be unable to concentrate his energy exclusively upon the campaign against ophthalmia. This latter can safely be trusted to other hands, for there are now 17 special ophthalmic hospitals in various parts of the country, all provided during the last few years. The oculists, English and Egyptian, had the satisfaction during the year of curing some 25,000 patients and of performing 30,000 operations, mostly on young people, for the relief of trachoma and ingrowing eyelashes. When a travelling ophthalmic hospital has been in one of the small towns for six months and has been crowded every day with eager out-patients, it is now not uncommon for the local Egyptian authorities to wake up to the need of a permanent eye dispensary, which is thus sometimes provided from the local rates.

The first ankylostoma hospital consists of 100 beds for both sexes, sheltered in tents or huts of matting, the only camp furniture necessary being wooden trestle beds with matting to lie upon and blankets to lie beneath. Great attention is paid to the latrines, which are screened by walls of matting, because their cleanliness and the microscopical examination of the excreta are obviously of educative value, a value not less important than ridding the individual of his intestinal parasites. Since 17 per cent. of the Egyptian lunatics are found to be pellagrous, it is surely time to find out how many of the sane are affected, and we are glad to see that Lord Kitchener looks forward to "a prolonged, well-organised, and thoroughly scientific investigation of pellagra in connexion with the ankylostomiasis campaign."

Infant Mortality.—Duties of the Village Barber.

Lord Kitchener has shown his interest in public health problems by devoting one-seventh of the report to their consideration, and he is evidently well aware of the waste of life caused by the high rate of infantile mortality. He finds that this is mainly due to the complete ignorance of the midwives and of mothers. It is hoped to remedy this backward civilisation by increasing the number of maternity schools and children's dispensaries. In the former the village midwives receive a course of training under an English matron, and in the dispensaries, which are more popular with the poor than the Government hospitals, the children are treated by medical men who volunteer for the purpose, while the mothers are instructed by an English nurse in the principles of cleanliness, nursing, and diet of sick children.

The village barber, unpaid by the Government, but recognised as the humblest rank of the sanitary hierarchy, is legally authorised to vaccinate, circumcise, and apply leeches, cupping vessels, and simple dressings, but he is forbidden to prescribe drugs. Among other duties he has to examine male corpses and to cause such diagnosis as he thinks fit to be entered in the village register as the official cause of death. Attempts are now being made to provide a better class of man, able to read and write, and trained in a hospital for three months, when, if he passes the necessary examination, he is certified as "trained in first aid." The number of patients seen by the barber when he returns to his village varies, of course, and, like other forms of practice, depends upon the personality of the man. We are told of one very successful barber who during the year saw 256 ophthalmic patients, 334 ordinary cases, and sent three others for treatment to the medical officer. On the other hand, some barbers get little or no practice. The provincial councils spent during the year £2700 on training village barbers and supplying them with first aid equipment. Many of these reforms were begun some years ago, but there is no doubt that the vigorous personality of the present Agent and Consul-General is causing them to bear practical fruit. The area of the country infected by plague remains as before, but the total number of cases fell during the year from 884 to 654.

The School of Medicine.—Education of Girls.

The School of Medicine continues to flourish, with a total of 258 students, but it is still difficult to find young Egyptians who are willing to devote their lives to the purely scientific and less remunerative branches of the medical profession. Three additional posts have been created, which for long have been wanted, assistants to the professors of biology, chemistry, and anatomy. There are also 209 Egyptian students who are now studying medicine in Europe, mostly unconnected with the Egyptian Government.

The ruined condition of the buildings at Kasr-el-Ainy Hospital in Cairo, where all the young men and women who enter the profession are trained in hospital life, is not referred to in this report, but it is obvious that a military barrack, constructed more than a century ago and now past repair, is unfitted to serve as a model of what a great hospital ought to be.

The most wonderful change at work in Egypt is the recent public interest in the education of girls. In any country this would be noteworthy, but in Egypt, where only two women in every 1000 can read their own language, while still fewer can write it, this constitutes a silent revolution of the greatest possible importance. Elementary schools for girls are springing up, in which needlework, cooking, laundry, and elementary hygiene are taught, in addition to reading, writing, arithmetic, and the Koran. In defiance of all tradition and without losing caste, it is now possible for an unmarried Egyptian girl, who has been trained as a teacher in Cairo, to leave her home and migrate to the provinces to take charge of one of these new schools for girls. She thus often becomes the breadwinner of the family. for her salary may rise to £300 a year, perhaps ten times more than her own father has ever earned. After centuries of prejudice both men and women seem to be realising a verse of the Koran: "A man can find Paradise at his mother's feet."

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN the 97 English and Welsh towns with populations exceeding 50,000 at the last Census and whose aggregate population at the middle of this year is estimated at 18,120,059 persons, 8507 births and 4421 deaths were registered during the week ended Saturday, July 4th. The annual rate of mortality in these towns, which had been 13·5, 12·9, and 12·1 per 1000 in the three preceding weeks, rose again to 12·7 per 1000 in the week under notice. During the 13 weeks of last quarter the mean annual death-rate in these towns averaged 13·8, against 13·1 per 1000 in London during the same period. Among the several towns the death-rate last week ranged from 5·1 in Edmonton, 5·5 in Devonport, 5·9 in Ealing and in Swindon, and 6·1 in Wimbledon, to 18·8 in Plymouth, 19·3 in Barnsley, 19·4 in Walsall, 19·9 in Bootle, and 20·0 in Oldham.

The 4421 deaths from all causes were 228 more than the number in the previous week, and included 444 which were referred to the principal epidemic diseases, against 390 and 394 in the two previous weeks. Of these 444 deaths, 130 resulted from measles, 116 from infantile diarrhœal diseases, 95 from whooping-cough, 64 from diphtheria, 23 from scarlet fever, and 16 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 1·3 per 1000, and was 0·2 more than the rate in the previous week. The deaths attributed to measles, which had been 119, 140, and 144 in the three preceding weeks, fell to 130 last week, and caused the highest annual death-rates of 1·3 per 1000 in Liverpool and in Preston, 1·7 in Rochdale, and 3·5 in Oldham. The fatal cases of whooping-cough, which had been 111, 99, and 93 in the three preceding weeks, rose to 95 last week; the highest death-rates from this disease were 1·3 in Salford, 1·5 in West Bromwich, 1·8 in Great Yarmouth, and 1·9 in Barnsley. The deaths from diphtheria, which had been 56, 40, and 35 in the three preceding weeks, rose to 64 last week; the highest death-rate from this disease was 1·1 in Cardiff. The fatal cases of diarrhœa and enteritis (among infants under 2 years), which had been 69, 79, and 79 in the three preceding weeks, rose to 116 last week, and included 26 in London, 11 in Birmingham, 9 in Liverpool, 8 in Manchester, and 6 each in Birkenhead and in Sheffield. The deaths from scarlet fever, which had been 24, 24, and 30 in the three preceding weeks, fell to 23 last week, and included 6 in Manchester, 3 in London, and 2 in Salford. The deaths from enteric fever, which had been 16, 8, and 13 in the three preceding weeks, rose again to 16 last week, and included 5 in London and 2 in Newcastle-on-Tyne.

The number of scarlet fever patients under treatment in the London Fever and the Metropolitan Asylums Hospitals, which had steadily increased from 2862 to 3088 in the seven preceding weeks, further rose to 3092 on Saturday last; 442 new cases were admitted during the week, against 391, 405, and 440 in the three preceding weeks. These hospitals also contained on Saturday last 1089 cases of diphtheria, 286 of whooping-cough, 61 of measles, and 41 of enteric fever, but not one of small-pox. The 1148 deaths from all causes in London were 103 more than the previous number, and corresponded to an annual death-rate of 13·3 per 1000. The deaths referred to diseases of the respiratory system, which had been 143, 163, and 144 in the three preceding weeks, fell to 126 in the week under notice, and were equal to the number in the corresponding week of last year.

Of the 4421 deaths from all causes in the 97 towns, 192 resulted from different forms of violence and 363 were the subject of coroners' inquests. The causes of 33, or 0·7 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in London, Portsmouth, Bristol, Leicester, Nottingham, Salford, Bradford, Leeds, Newcastle-on-Tyne, and in 69 other smaller towns. Of the 33 uncertified causes of death, 5 were registered in Liverpool, and 3 each in Birmingham and in Darlington.

HEALTH OF SCOTCH TOWNS.

In the 16 largest Scotch towns with an aggregate population estimated at 2,293,200 persons at the middle of this year, 1216 births and 621 deaths were registered during the week ended Saturday, July 4th. The annual rate of mortality in these towns, which had been 14·4, 14·6, and 13·8 per 1000 in the three preceding weeks, rose to 14·1 per 1000 in the week under notice. During the thirteen weeks of last quarter the mean annual death-rate in these towns averaged 15·5, against a corresponding rate of 13·8 per 1000 in the 97 large English towns. Among the several towns the death-rate last week ranged from 3·1 in Falkirk, 9·7 in Paisley, 12·1 in Coatbridge, and 12·2 in Edinburgh, to 15·2 in Glasgow, 15·7 in Ayr, 18·0 in Aberdeen, and 20·3 in Hamilton.

The 621 deaths from all causes were 16 more than the number in the previous week, and included 41 which were referred to the principal epidemic diseases, against 67 and 52 in the two preceding weeks. Of these 41 deaths, 13 resulted from infantile diarrhœal diseases, 12 from whooping-cough, 9 from measles, 5 from diphtheria, and 1 each from scarlet fever and enteric fever. The mean annual death-rate from these diseases was equal to 0·9 per 1000, or 0·4 less than the rate recorded in the 97 large English towns. The deaths attributed to infantile diarrhœal diseases, which had been 10, 21, and 10 in the three preceding weeks, rose to 13 during the week under notice, and included 4 in Glasgow, 3 in Hamilton, and 2 in Aberdeen. The fatal cases of whooping-cough, which had been 15, 20, and 18 in the three preceding weeks, fell to 12 last week and included 10 in Glasgow. The deaths from measles, which had been 12, 17, and 7 in the three preceding weeks, rose to 9 last week; 4 of these were registered in Glasgow and 3 in Dundee. The deaths from diphtheria, which had been 2, 6, and 8 in the three preceding weeks, fell to 5 last week and included 3 in Glasgow. The fatal case of scarlet fever was registered in Motherwell, and that of enteric fever in Glasgow.

The deaths referred to diseases of the respiratory system, which had been 95, 77, and 64 in the three preceding weeks, were 63 last week; 33 deaths were referred to different forms of violence, against 24 and 26 in the two preceding weeks.

HEALTH OF IRISH TOWNS.

In the 27 town districts of Ireland, with an aggregate population estimated at 1,205,280 persons at the middle of this year, 615 births and 375 deaths were registered during the week ended Saturday, July 4th. The annual rate of mortality in these towns, which had been 17·9, 17·7, and 15·7 in the three preceding weeks, rose to 16·2 per 1000 in the week under notice. During the 13 weeks of last quarter the mean annual death-rate in these towns averaged 19·0 per 1000; in the 97 large English towns the corresponding rate did not exceed 13·8, while in the 16 Scotch towns it was equal to 15·5 per 1000. The annual death-rate in the week under notice was equal to 16·3 in Dublin (against 13·3 in London and 15·2 in Glasgow), 17·0 in Belfast, 20·4 in Cork, 14·0 in Londonderry, 20·3 in Limerick, and 9·5 in Waterford, while in the 21 smaller towns the mean rate was 13·7 per 1000.

The 375 deaths from all causes were 11 below the number in the previous week, and included 47 which were referred to the principal epidemic diseases, against 50 and 36 in the two preceding weeks. Of these 47 deaths, 15 resulted from measles, 14 from infantile diarrhœal diseases, 10 from whooping-cough, 4 from diphtheria, 3 from scarlet fever, and 1 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 2·1 per 1000, against 1·3 and 0·9 per 1000 in the English and Scotch towns respectively. The deaths attributed to infantile diarrhœal diseases, which had been 10, 15, and 11 in the three preceding weeks, rose to 14 last week, and included 7 in Belfast, 4 in Dublin, and 2 in Cork. The fatal cases of measles, which had been 16, 19, and 13 in the three preceding weeks, rose to 15 last week, and included 9 in Belfast and 2 each in Dublin and in Lurgan. The deaths referred to whooping-cough, which had been 8, 3, and 6 in the three preceding weeks, rose to 10 last week; 7 of these 10 deaths were registered in Belfast and 2 in Cork. The fatal cases of diphtheria, which had been 1, 2, and 2 in the three preceding weeks, rose to 4 last week, and included 2 in Dublin. The 3 deaths from scarlet fever, 2 of which occurred in Belfast, were slightly below the average for recent weeks. The death ascribed to enteric fever was certified as "paratyphoid" and occurred in Dublin.

The deaths referred to diseases of the respiratory system, which had been 67, 68, and 57 in the three preceding weeks, were 41 in the week under notice. Of the 375 deaths from all causes, 110, or 29 per cent., occurred in public institutions and 7 resulted from various forms of violence. The causes of 17, or 4·5 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the 97 large English towns the proportion of uncertified deaths did not exceed 0·7 per cent.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been notified:—Staff-Surgeons: P. D. M. Campbell to the *Wildfire*, additional, for disposal; and F. G. Wilson to the *Victory*, additional, for disposal.

ARMY MEDICAL SERVICE.

Colonel Harry S. McGill, from the Half-pay List, retires on retired pay (dated July 8th, 1914). Colonel Thomas J. O'Donnell, D.S.O., on completion of four years' service in his rank, is placed on the Half-pay List (dated July 7th, 1914). Brevet-Colonel Samuel Hickson, Honorary Surgeon to the King, from the Royal Army Medical Corps, to be Colonel, vice T. J. O'Donnell, D.S.O., to half pay (dated July 7th, 1914).

ROYAL ARMY MEDICAL CORPS.

Major John Heunessy to be Lieutenant-Colonel (dated July 7th, 1914).

Captain William W. Boyce, from the half-pay list, is restored to the establishment (dated June 29th, 1914).

Colonel S. Hickson has taken up duty at the Horse Guards as Inspector of Medical Services on the staff of the Inspector-General of the Forces.

Lieutenant-Colonel T. du B. Whaite has been transferred from Woolwich to the Military Hospital at Lahore as Senior Medical Officer. Lieutenant-Colonel J. C. O'Connor has been appointed Deputy Assistant Director of Medical Services to the Irish Command Headquarters Staff. Lieutenant-Colonel J. H. Daly has been appointed to hold charge of the Military Hospital at Belfast. Lieutenant-Colonel G. Cree has taken up duty as Assistant Director of Medical Services at Bordon. Lieutenant-Colonel G. A. T. Bray has been appointed Deputy Surgeon to the Royal Hospital at Chelsea. Lieutenant-Colonel O. L. Robinson has taken up duty as Professor of Tropical Medicine at the Royal Army Medical College, Grosvenor-road. Lieutenant-Colonel T. McCulloch has been appointed to hold charge of the Medical Division and Sanatorium at the Royal Victoria Hospital, Netley. Lieutenant-Colonel D. M. O'Callaghan has been placed under orders for service abroad during the coming trooping season. Lieutenant-Colonel F. Smith, D.S.O., has been appointed Medical Inspector of Recruits to the Irish Command Headquarters Staff. Lieutenant-Colonel B. H. Scott has taken up duty in the London District.

Major D. L. Harding has been appointed to hold charge of the Military Hospital at Mullingar. Major H. W. Long has taken up duty at Netheravon. Major M. H. G. Fell has been appointed Deputy Assistant Director of Medical Services, Aldershot Command. Major J. G. Gill has been appointed to the Southern Command. Major R. L. Popham has been transferred from the Cork District to the Military Hospital at Nowshera Cantonment. Major F. E. Gunter has been appointed to hold medical charge of the Cadets at the Royal Military College, Sandhurst, on transfer from Tidworth.

Major J. Matthews has arrived home for duty from the Ninth (Secunderabad) Division. Major W. Davis has taken up duty at Naini Tal. Major A. G. Thompson has been appointed to the Southern Command. Major G. J. A. Ormsby has arrived home for duty from Meerut Cantonment. Major J. L. Jones has been transferred from the Military Hospital at Calicut Cantonment to Wellington Sanatorium. Major J. F. Martin has been appointed to the Aldershot Command. Major J. C. Kennedy has been appointed to the Military Hospital at Lebong Cantonment on transfer from Lucknow. Major H. G. Pinches has been appointed to the Military Hospital at Sheerness. Major R. McK. Skinner has been transferred from the Curragh Camp to the Military Hospital at Lahore. Major H. S. Thurston has been placed under orders for service abroad during the coming trooping season. Major W. J. P. Adye-Curran has been appointed Specialist in Advanced Operative Surgery to the Military Hospital at Cosham. Major T. H. M. Clarke, C.M.G., D.S.O., has taken over medical charge at the Royal Hibernian Military School, Phœnix Park, Dublin. Major W. J. S. Harvey has been appointed Company Officer to No. 29 Company, Royal Army Medical Corps at Jamaica. Major C. E. Fleming has been appointed to hold charge of the Military Families Hospital at Roberts's Heights, Pretoria. Major F. McLennan has been appointed Adjutant to the School of Instruction at Aberdeen. Major C. E. Pollock has joined for duty at Sierra Leone. Major F. S. Walker has been appointed to hold charge of the Military Hospital at Fort Camden. Major C. R. L. Ronayne has arrived home on leave of absence from Gibraltar. Major H. A. Bransbury has been granted six months' general leave of absence. Major E. P. Sewell has been appointed Specialist Sanitary Officer in Ceylon. Major W. Riach has been appointed Specialist in Ophthalmology to the Queen Alexandra Military Hospital at Grosvenor-road. Major H. S. Roch has been appointed to Pretoria.

Captain D. T. MacCarthy has been granted six months' leave of absence home from India with permission to revert to the Home Establishment at its expiration. Captain F. C. Lambert has been transferred from Pembroke Dock to the Military Hospital at Poona Cantonment. Captain R. G. S. Gregg has taken up duty at Aden on transfer from Karachi. Captain A. C. Amy has joined at Bury. Captain J. A. Anderson has been appointed to the Royal Army Medical College for the course of instruction for promotion to the rank of Major. Captain H. B. Kelly has been placed under orders for service abroad. Captain W. W. Browne has been appointed Specialist in the Prevention of Disease and placed in charge of the Bacteriological Research Laboratory at Ahmednagar. Captain H. Harding has been appointed to the Military Hospital at Warley. Captain V. C. Carruthers has been granted leave of absence for one month. Captain W. R. Galwey has been appointed Deputy Assistant Director of Medical Services (Sanitary Branch) to the Ninth (Secunderabad) Division. Captain J. H. Graham has taken up duty at Cosham. Captain W. Mitchell has been appointed to hold charge of the Military Hospital at Wrexham. Captain C. Scaife has arrived home for duty from India. Captain J. A. Manifold has been appointed to hold charge of the Military Hospital at Warwick Camp, Bermuda. Captain H. L. Howell has been appointed to hold charge of the Native Section Hospital at Kirkee Cantonment. Captain D. F. Mackenzie has been appointed Staff-Surgeon at Meerut. Captain C. H. Stringer has joined at Jamaica.

Lieutenant R. K. Mallam has been transferred from Bordon to the Second (Rawal Pindi) Division. Lieutenant W. McNaughtan has taken up duty at Quetta on transfer from the Royal Victoria Hospital at Netley. Lieutenant M. Burnett has embarked for India. Lieutenant J. H. M. Frobisher has been appointed to Lucknow Cantonment. Lieutenant W. B. Stevenson has been transferred from Deepcut to Rawal Pindi Cantonment. Lieutenant G. F. Allison has been appointed to the Military Hospital at York on transfer from Strensall. Lieutenant W. L. Webster has been transferred from Limerick to the Military Hospital at Cairo. Lieutenant D. T. Large has been appointed to the Fifth (Mhow) Division. Lieutenant R. W. Richardson has been appointed to the Military Hospital at Jubbulpore. Lieutenant E. B. Allnutt has been transferred from Poona Cantonment to the Military Hospital at Purandhur. Lieutenant A. G. Bigham has taken up duty at Rawal Pindi.

INDIAN MEDICAL SERVICE.

Lieutenant-Colonel M. A. Ker has been appointed to officiate as Assistant Director of Medical Services to the Derajat and Bannu Brigades, vice Colonel J. Crimmin, V.C. C.B., C.I.E., granted leave of absence. Lieutenant-Colonel L. F. Childe has taken up duty as Professor of Medicine and Therapeutics at the Grant Medical College, Bombay. Lieutenant-Colonel E. H. Wright has been appointed District Medical and Sanitary Officer and Superintendent of the Medical School at Tanjore. Lieutenant-Colonel H. E. Banatvala has been confirmed in the appointment of Inspector-General of Civil Hospitals and Prisons and Sanitary Commissioner to the Government of Assam. Lieutenant-Colonel G. M. C. Smith has taken up duty as Superintendent of the District Prison at Ludhiana. Lieutenant-Colonel E. P. Maynard, professor of ophthalmic surgery at the Medical College, Calcutta, has been granted six months' leave of absence home from India. Lieutenant-Colonel H. Fooks, medical officer of the 15th Lancers, has been appointed to officiate as Assistant Director of Medical Services to the Bombay Brigade, vice Colonel H. Hendley, granted seven months' leave of absence home from India.

Major C. Hudson, D.S.O., has taken over substantive medical charge of the 2nd Rajputs at Muscat. Major D. H. F. Cowin has joined at Patiala. The services of Major J. M. Woolley have been placed permanently at the disposal of the Government of Burma. Major E. A. C. Matthews has been appointed Honorary Surgeon to H.E. the Viceroy and Governor-General of the East Indies.

Captain C. H. Reinhold, civil surgeon at Bijnor, has been transferred. Captain W. J. Powell has joined at Kasauli. Captain G. A. Jolly, officiating civil surgeon at Fategarh, has been granted nine months' combined leave. Captain A. F. Babonau has joined at the Naga Hills District. Captain B. Higham has been appointed to hold medical charge of the Sind Rifles, vice Colonel B. B. Grayfoot, transferred. Captain H. B. Scott has been appointed Pathologist to the General Hospital at Rangoon, vice Captain A. Whitmore, granted leave of absence. Captain W. Gillit, superintendent of the Bhagalpur Central Prison, has been appointed to officiate as Civil Surgeon at Bhagalpur, vice Lieutenant-Colonel J. C. S. Vaughan, granted leave of absence. Captain I. D. Jones has been appointed Professor of Materia Medica at the Grant Medical College, Bombay.

Lieutenant N. C. Kapur has been appointed to hold medical charge of the 31st Mountain Battery and Frontier Garrison Artillery.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

No. 18 Field Ambulance: Lieutenant-Colonel (Honorary Major in the Army) A. A. Watson, R.A.M.C. (T.), to be Lieutenant-Colonel (dated May 1st, 1914). Captain Wilson H. P. Hey resigns his commission (dated July 4th, 1914).

The under-mentioned to be Lieutenants (on probation):—Cadet Corporal William Siegfried Dawson, from the Oxford University Contingent, Officers Training Corps (dated May 20th, 1914). Cadet Griffith Ivor Evans, from the Oxford University Contingent, Officers Training Corps (dated May 20th, 1914). Cadet Sergeant Thomas William Clarke, from the Edinburgh University Contingent, Officers Training Corps (dated May 26th, 1914). Cadet Sergeant John Cullenan, from the Belfast University Contingent, Officers Training Corps (dated June 4th, 1914). Cadet Arthur George Fisher, from the Dublin University Contingent, Officers Training Corps (dated June 5th, 1914).

TERRITORIAL FORCE.

Royal Army Medical Corps.

Highland Mounted Brigade Field Ambulance, Royal Army Medical Corps: John Broadfoot to be Lieutenant (dated May 1st, 1914).

3rd East Lancashire Field Ambulance, Royal Army Medical Corps: Captain Wilson H. P. Hey resigns his commission (dated July 4th, 1914).

Attached to Units other than Medical Units.—Lieutenant-Colonel (Honorary Major in the Army) Andrew A. Watson is seconded for service with No. 18 Field Ambulance, Royal Army Medical Corps (Special Reserve) (dated May 1st, 1914). Captain Samuel M. Sloan to be Major (dated May 22nd, 1914). Captain John Orr resigns his commission, and is granted permission to retain his rank and to wear the prescribed uniform (dated July 4th, 1914).

Supernumerary for Service with the Officers Training Corps.—Lieutenant Patrick Nicol, serving with the Aberdeen University Contingent, Senior Division, Officers Training Corps, resigns his commission (dated July 4th, 1914).

ST. JOHN AMBULANCE BRIGADE.

On July 4th 1500 members of the Prince of Wales's Corps of the St. John Ambulance Brigade paraded in Hyde Park for their annual inspection. Surgeon-General Sir Arthur W. May, Director-General of the Medical Department of the Royal Navy, presented the trophies and long service medals

Surgeon-General G. J. H. Evatt, C.B., will give an address to the St. Marylebone Red Cross Camp at Eastcott Hall, on July 12th (Sunday), at 7 P.M., on "The Real Florence Nightingale."

Home and Foreign Notes.

(FROM OUR OWN CORRESPONDENTS.)

LIVERPOOL.

The University of Liverpool.

THE Chancellor of the University (the Earl of Derby) presided at a special congregation held on Saturday, July 4th, in St. George's Hall, when degrees were conferred on the successful students in the recent examinations. The Vice-Chancellor (Sir Alfred Dale) announced the appointments to fellowships and studentships and the names of the prize-winners, and then closed the proceedings with the Latin formula of dismissal. Mr. Keith W. Monsarrat has resigned the post of Dean of the Faculty of Medicine, and Professor J. M. Beattie has been nominated in his place.

National Association for the Prevention of Infant Mortality Conference.

The National Association for the Prevention of Infant Mortality and for the Welfare of Infancy held its annual conference in Liverpool on July 2nd and 3rd. Mr. Herbert Samuel, the President of the Local Government Board, was to have delivered the inaugural address, but was detained in London. He sent a letter in which he said it had been a great satisfaction to him to see the remarkable reduction that had taken place in the rate of infant mortality during the last few years, and that whatever assistance the Local Government Board could render to the great object the association had in view would be gladly given. In the absence of Mr. Samuel, the opening address to the conference was delivered by Mr. J. Herbert Lewis, Parliamentary Secretary to the Board, who laid stress upon the value of coöperation between public and voluntary bodies in tackling the problem of infant welfare. The official work, central and local, of the country, he said, was changing. The day of stiff official starch was past. They needed and had something more pliable, more human, and something more touched with the spirit and needs of the common people, with none of the meretricious superiority of a mere narrow bureaucracy. Many interesting papers were read subsequently. Among the most interesting were those of Dr. A. K. Chalmers on Ante-natal Hygiene; Dr. Eric L. Pritchard on the Scope and Functions of Schools for Mothers; Dr. E. W. Hope on the Aims, Objects, and Methods of Sterilisation of Milk; and Dr. C. W. Saleeby on the Nurture of the Race.

Appointment for Professor B. Moore.

The Liverpool University is about to lose the services of Professor Benjamin Moore, whose important appointment at the new National Health Laboratory has already been noted in your columns. There will be three sections in the laboratory. One will be concerned with bacteriology, the second with experimental physiology, while the third will embrace applied physiology and hygiene. Professor Moore will be attached to the third of these, and he will have as his colleague Dr. Leonard Hill. For 12 years Professor Moore has occupied the Johnston chair of biochemistry at the Liverpool University, and for some time he was dean of the medical faculty. He became especially prominent during the time of the Insurance Bill controversy, when he was the chief advocate of a State medical service. To the Liverpool University the value of his work is impossible adequately to estimate, and the council have received the intimation of his resignation with regret, coupled with good wishes for success in his important Government work in London. By the resignation of Professor Moore another chair in the medical faculty is rendered vacant, no one as yet having been appointed to the chair of physiology to succeed Professor C. S. Sherrington, who earlier this year went to Oxford.

After-care of School Children.

In THE LANCET of June 6th, p. 1641, a reference was made to a decision of the Liverpool education committee to transfer the following up of ailments of school children from the medical department to that of the director of education. These proposals, however, were not pursued, and were withdrawn by the chairman of the education committee from consideration by the city council. The matter therefore remains as before in the medical department.

Measles in Liverpool.

Owing to the large number of cases of measles among the younger children in the city the medical officer of health, Dr. E. W. Hope, has ordered the closing of the infant departments in all the schools in Liverpool. The officials of the health department expect that the closing of the schools for a fortnight and the holiday period of five weeks which will then ensue will have the desired effect of checking the outbreak. The present temperate weather is also a factor in stopping the spread of the disease.

St. Paul's Eye Hospital.

The annual meeting of the St. Paul's Eye Hospital was recently held at the town hall. The Lord Mayor presided, and moved the adoption of the report and balance sheet, the latter of which showed a carried forward deficit of £737. The St. Paul's Hospital recognised that prevention was more important than cure, and in this connexion he mentioned that one of the most prolific causes of blindness was ophthalmia neonatorum. The hospital had done much to prevent this class of blindness. There were other diseases of the eye which did not produce blindness, but which produced so much incapacity that it almost amounted to blindness, and it was in respect to these other diseases that the hospital had given so much assistance. He was sorry, under these circumstances, that the needs of the hospital had not been fully met by the subscription list, and that there was a serious deficiency. When the valuable work of the institution had been more fully recognised he trusted that the public would realise that it well deserved their support in their own interests as well as in the interests of humanity. Mr. C. S. Rigg seconded, and the report was adopted. Sir William Bowring and Dr. E. Stevenson proposed the re-election of the committee, and votes of thanks were accorded to the ladies' committee and the medical staff.

July 7th.

SCOTLAND.

Health of Edinburgh.

IN the report of the medical officer of health for this city (Dr. A. M. Williamson) for the year 1913, which has recently been issued, the death-rate of the city is the lowest ever recorded, and in this respect now compares most favourably with other large centres of population. Dr. Williamson directs special attention to the spread of cancer, compares its incidence and death-rate with those of tuberculosis, and deplores the comparatively slight attention paid to the former condition compared to the latter.

Honorary Degrees at Edinburgh University.

The summer graduation ceremony took place on July 3rd in the M'Ewan Hall, under the presidency of Sir William Turner, Vice-Chancellor of the University. The hall was filled in every part. Among the 13 recipients of honorary degrees were Dr. Byrom Bramwell, consulting physician to the Edinburgh Royal Infirmary, and Dr. F. W. Mott, pathologist of the London County Asylums. Professor James Mackintosh, dean of the Faculty of Laws, in presenting Dr. Bramwell and Dr. Mott for the degree of Doctor of Laws, referred to the former's rare acumen in diagnosis and sympathetic attitude to every advance in medical thought and practice, and to the latter's acknowledged leadership of medical opinion in the great and growing department of psychiatry, and in particular in the subject which he had made peculiarly his own—the pathology of the brain and mental disease.

The Royal Visit to Glasgow.

The King and Queen had an enthusiastic reception at Glasgow on July 7th. His Majesty first opened the Diamond Jubilee Memorial block at the Royal Infirmary, which has cost £500,000, and passed through some of the wards. He was much interested in the Lister relics which are preserved at the infirmary. In the afternoon Their Majesties visited the newly rebuilt Royal Hospital for Sick Children, and paid a brief call at the Western Infirmary.

The Drug Fund in Kincardineshire.

While the chemists in Aberdeenshire and in the city of Aberdeen have been in the unfortunate position of having deductions made from their drug accounts, their brethren in the adjoining county of Kincardineshire are more fortunate. Their accounts are not only to be paid in full, but in addition they are to receive a substantial bonus amounting approximately to 39 per cent. of the chemists' accounts.

July 7th.

IRELAND.

The Working of the National Insurance Act in Ireland.

IN the annual report on the working of the National Insurance Act just issued the statement is made that "the administration of benefits by societies in Ireland has been very satisfactory. The societies have shown a desire to deal with applications for benefit in as sympathetic a manner as possible consistent with their duties to their members as a whole." This represents an unduly optimistic view of the facts. While some societies are acting as the report states, others, including some of the largest and most important, place every obstacle in the way of a member obtaining his benefit. In some cases no medical certificate is accepted except that of the society's medical officer, and if a dissatisfied member wishes to appeal to a committee of complaints he must first lodge the sum of £1, which it is almost invariably impossible for him to do. Discontent is gradually growing, and boards of guardians throughout the country are complaining that sick people entitled to benefit are falling on the rates. The Athlone guardians, for instance, at their last meeting unanimously passed a resolution asking the Insurance Commissioners to dispense with the services of the "medical adviser" in their district.

Public Health Administration of Dublin.

Sir Charles Cameron, superintendent medical officer of health of Dublin, has issued a "Brief History of Municipal Public Health Administration in Dublin," which he has dedicated "to the corporation of that ancient city." The book includes a brief historical sketch of the evolution of sanitation in Dublin, and is also a reply to the recent report of the Departmental Committee on the Housing of the Working Classes in the city. As a historical sketch it furnishes a good deal of interesting information not easily accessible elsewhere. As a reply to the Departmental Committee the work is less satisfactory. The gravamen of the strictures on the work of the Dublin corporation lay in the charges (1) that they had failed to make full use of their existing powers; (2) that the officers of the corporation had failed to carry out the by-laws concerning tenement houses; and in particular (3) that rebates of taxes had been granted on property classified in the corporation books as "unfit for human habitation." The Departmental Committee gave full particulars of the failure of the corporation to exercise its powers, as, for instance, in its neglect to prepare and keep a register of tenements. To quote the work done by the corporation as regards water-supply, main drainage, and electric lighting, for which full credit should be given, is no answer to the charges. With regard to the second point Sir Charles Cameron admits the facts, but maintains that a rigid enforcement of the by-laws was impracticable. If the by-laws are unsuitable they should be amended rather than their habitual breach connived at. To the third point he makes no reply beyond discussing the details of one particular case.

Politics and Public Health in Belfast.

The medical officer of health reports that in the city of Belfast there are 934 houses occupied by more than one tenant, the inhabitants of these houses numbering 5073, and of these double-tenancy houses 535 are in one Parliamentary division. There can be no question that a number of these double-tenancy houses are manufactured to make Parliamentary votes. In cases where in such houses there is not access to proper sanitary conveniences it is the duty of the public health authorities to prosecute.

The Medical Officer of Health of Derry.

Dr. F. W. Craig has been appointed medical superintendent officer of health for the city of Derry, at a salary of £350 a year, and also tuberculosis officer, with a salary of £200 per annum.

A Grant to County Antrim Infirmary.

The county council of Antrim, after considerable discussion, decided on July 3rd, by a majority of one 8 to 7), to grant a supplemental contribution of £100 for the year ending April 30th, 1914, towards the maintenance of the County Infirmary, Lisburn.

Water Famine in Dungannon.

Owing to the comparatively dry winter and summer many places in the north of Ireland are suffering from the prolonged drought, and among them is the old town of Dungannon, County Tyrone. Since July 5th the supply of water has been diminished to three hours in the morning and two and a half in the afternoon. The present supply, which was inaugurated 35 years ago, is totally unfit for the requirements of the residents of Dungannon.

July 7th.

PARIS.

Child Mortality and Alcoholism in Paris.

M. Paul Juillerat, a member of the Conseil d'Hygiène et de Salubrité de la Seine, and M. A. Filassier, head of the Statistical Department of the City of Paris, have published in the *Revue Philanthropique* the results of their researches on the causes of child mortality in Paris. Their work demonstrates forcibly the disastrous results of alcoholism. During the ten years 1903 to 1912 inclusive, out of 97,885 dead children, 53,619, or over half, were under 1 year. "Congenital debility" accounts for 12,342 of these deaths. Notwithstanding the difficulty in the present state of statistics of obtaining actual data in this matter, M. Juillerat and M. Filassier do not hesitate to attribute to alcoholism in the parents this enormous proportion of children affected with congenital debility. Interesting figures have also been furnished by Juquellier, Bourneville, and Magnan. Dr. Jacquet's statistics are also especially instructive. In the inquiry made by him between May 1st, 1912, and May 1st, 1913, at the Hôpital St. Antoine, he divided into the following three classes 396 patients examined by him who had a total of 879 children: (1) Moderate users of alcohol—those who drink habitually a litre of wine, alcoholic drinks, or occasional apéritifs—141 individuals, 305 births, 83 deaths; (2) excessive drinkers—those who drink habitually from 1½ to 2 litres of wine, alcoholic drinks, or frequent absinthes—108 individuals, 248 births, 115 deaths; (3) very excessive drinkers—those who drink habitually 2 litres or more of wine, apéritifs, and alcoholic drinks or absinthe usually and in abundance—147 individuals, 326 births, 244 deaths. This total of 396 individuals thus shows 879 children, of whom 442 died, 272 of them in infancy. Thus the progeny of these 396 parents, all alcoholic and more or less gravely toxic, shows a mean mortality of 50·28 per cent. M. Juillerat and M. Filassier further show that in different regions social or medical prevision has notably diminished the child mortality from diphtheria, pulmonary tuberculosis, tuberculous meningitis, syphilis, diarrhœa, and so forth. On the other hand, as regards congenital debility, which furnishes so considerable a proportion to these gloomy statistics, there has been practically no improvement.

The Paris Water-supply.

The present tropical heat, as in previous years, has aroused uneasiness on the drinking-water question. The temperature in Paris has reached 87·6° F. (32° C.) in the shade, and at once the use of water, which is ordinarily about 300,000 cubic metres daily, and which has even reached 400,000 cubic metres on occasion, jumped to 425,000. The normal provision of source water for the city of Paris in the month of July is from 310,000 to 320,000 cubic metres. Beyond this amount river water filtered in sand-beds at St. Maur and Ivry and then passed through an ozonising plant is used. This source can supply from 140,000 to 180,000 cubic metres of filtered water, giving a total supply of from 450,000 to 500,000 cubic metres for the daily use of the capital. In the future the supply from the sources of Provins, a scheme for which is now before Parliament, will furnish a daily supplement of 70,000 cubic metres, and work is at present going on to double the capacity of the filter beds at Ivry, which will then furnish 120,000 cubic metres instead of 60,000. The present time, however, is the most critical, for from July 14th an important proportion of the population leaves the city for the country or abroad. It is thought, therefore, that it will not be necessary hereafter to utilise unfiltered river water with the recommendation, which causes uneasiness, to the residents always to boil their water. The water from the filter beds is as safe as that from the source, though perhaps a little less fresh.

A Conference on Pellagra.

Dr. L. W. Sambon, of London, delivered a lecture at the Institut Pasteur on his theory as to the causation of pellagra, which, in his opinion, does not result, as has hitherto been thought, from the too exclusive use of spoiled maize, but is due to inoculation of the virus by the bite of the simulium fly. He also made a communication on the same subject to the Académie de Médecine.

July 6th.

AUSTRALIA.

Small-pox in Sydney.

Cases of small-pox still continue to occur in Sydney and suburbs at the rate of three to five cases daily, and the mild character of the disease has not been altered. As a result of public feeling in the matter of the refusal of the New South Wales Board of Public Health to isolate contacts, a conference was held in Melbourne and an agreement between the State and Federal authorities was arrived at under which the former were to have the use of the North Head quarantine for isolating dangerous contacts, but would vacate it if required on 24 hours' notice. Very little public interest is taken in the matter apart from the dispute between the authorities. A small epidemic has occurred at Bunbury, Western Australia, from a case introduced oversea from the East.

Remarkable Endurance.

Some time ago it was mentioned in this column that a young woman had given birth to a child on an excursion steamer in Hobson's Bay. The child died the next day, and the mother was recently prosecuted on a charge of concealment of birth. Evidence showed that the steamer left Port Melbourne early in the morning and about half an hour after departure the body of a living child was found in the lavatory. The steamer proceeded to Geelong and thence to Mornington, arriving at the latter place about midday. It was not till the arrival here that the mother was apprehended by a police constable who had taxed her with being the mother of the infant. Up to that time she had been sitting unconcernedly on deck with a young man. At the trial it was stated that this young man had since married her. The jury found her not guilty.

Melbourne Medical School.

An appeal is being made in the public press for funds in aid of the medical school of the Melbourne University. It is said that accommodation is insufficient, and that the professors are without adequate assistance. A proposal has recently been made to transfer the school of anatomy to the new buildings of the Melbourne Hospital, but it is unlikely that the authorities will fall in with such an idea.

Clinical Research.

Mr. J. S. Horsfall has promised a sum of £500 for five years towards the establishment of chairs of clinical research in the Melbourne University. A small group of medical men have promised jointly another £500 per annum for the same term. At present the proposal is to divide this sum among the pathological departments of the three Melbourne teaching hospitals.

"*The Battle of the Lodges.*"

The Victorian Branch of the British Medical Association has not yet included any new arrangements with the Friendly Societies. The organisation committee, acting upon the advice of Dr. J. A. Macdonald, who recently visited Australia, has been engaged in creating a defence fund to re-imburse practitioners who might lose appointments in the event of any open rupture. This fund at latest publication amounted to about £5000. Meanwhile nothing has been done beyond arranging a conference between the branch and the societies. As matters stand the Friendly Societies are willing to increase the rates of contract work but will not listen to any wage-limit proposal for membership. In New South Wales the lodges have in some instances held out against the local profession. It is quite possible that some movement may be made to endeavour to bring the dispute under the jurisdiction of the Commonwealth Arbitration Court.

Cancer Research.

At a recent meeting of the Victorian Board of Public Health a resolution was carried requesting other State boards to join in asking the Federal Government to provide a sum of £50,000 to be devoted to cancer research on condition that an additional £50,000 was subscribed by the public. The council of the Melbourne University have instituted a cancer research scholarship which will date for three years from August 1st, 1914. The scholar appointed must proceed to Europe and America, and return to the Melbourne Hospital by 1915. He is to receive a salary of £250 per annum and £100 for expenses.

Baby Bonus.

The Federal Treasurer, Sir John Forrest, made a statement in the Federal House that under the maternity bonus scheme a sum of £1,032,000 had already been paid away. The scheme was introduced in October, 1912, and was estimated to cost £400,000 per annum, but the estimate has been considerably exceeded.

Housing Commission.

The Victorian Government has appointed a commission to inquire into the housing conditions of the city of Melbourne. Evidence has been given by several police officers in the more crowded suburbs, and although some undesirable arrangements were noted it cannot be said that any deplorable conditions have yet been disclosed.

Health of Adelaide.

The population of the city was estimated at 42,828, an increase of 305 for the year. The death-rate is given as 14·42 and infantile mortality figure at 63. Diphtheria was prevalent, 458 cases being reported, of which 293 were brought to Adelaide Hospital from outside districts. During the year 23 houses were condemned as unfit for habitation, and 18 ordered to be demolished. 1309 notices to repair dwellings were issued.

Venereal Prophylaxis.

A lay deputation accompanied by several medical men waited on the Premier of Victoria to urge that the Government should take measures for the provision of treatment of venereal disease and for the diffusion of information upon the subject. Mr. Watt expressed sympathy with the aims, and promised to continue the subsidy already paid for the provision of free Wassermann tests at the University, and to forward the educational scheme as far as might be desirable. He also undertook to introduce legislation for the detention of prisoners suffering from venereal disease until they were cured. The West Australian Government has made special provision for the treatment of venereal cases in the general hospitals of that State.

June 2nd.

Obituary.

CHARLES TANFIELD VACHELL, M.D. LOND., J.P., V.D.,

CONSULTING PHYSICIAN TO KING EDWARD VII. HOSPITAL, CARDIFF.

WE regret to record the death on July 2nd of Dr. C. T. Vachell, one of the most prominent medical practitioners at Cardiff and a leading public man in the life of the district. He had been seriously ill for some little time and was under treatment at Clifton when he died.

Charles Tanfield Vachell was born at Cardiff in 1848. He was the eldest son of John William Vachell, whose father had been twice mayor of Cardiff. He matriculated in the University of London from Hereford Cathedral School, and entered at King's College, London, in 1865, afterwards studying medicine at King's College Hospital. He qualified M.R.C.S. Eng. in 1869, and in the following year he obtained the M.B. degree of his University as well as the licences of the Royal College of Physicians of London and of the Society of Apothecaries. In 1874 he proceeded to the M.D. degree.

Dr. Vachell's long and successful association with the Cardiff Infirmary (now King Edward VII. Hospital) began almost immediately after he became qualified. The institution was then known as the Glamorgan and Monmouthshire Infirmary and Dispensary. In 1870 he was appointed house surgeon, and in 1879 he was made medical officer to out-patients. From 1882 to 1902 he served upon the active visiting staff first as surgeon, later as physician, and was appointed to the consulting staff 12 years ago. He was the joint founder 30 years ago of the Cardiff Provident Dispensary, and served with zeal and ability upon a number of public bodies and committees. Dr. Vachell was also for a considerable period a keen Volunteer, and retired from the Glamorgan Volunteer Artillery after 22 years' service with the rank of surgeon-lieutenant-colonel and the V.D. decoration. He was very well known locally as an antiquarian and naturalist, taking a prominent part in the establishment of the National Museum of Wales and for many years keeping a daily record of the rainfall in the district.

Among Dr. Vachell's occasional contributions to medical literature were three papers which appeared in THE LANCET—Cystic Goitre Treated by Shelling Out, in 1886; Acute Nephritis from Sewer Air Poisoning, in 1894; and Notes of a Case of Ether-Pneumonia, in 1898. He had an extensive practice among the leading families of Cardiff and its neighbourhood, and his opinion and character were much valued by his professional colleagues.

Mr. P. Rhys Griffiths, senior surgeon to the King Edward VII. Hospital and chairman of the medical board, writes: "Dr. Vachell was a most accomplished officer and throughout his life rendered distinguished service to the hospital. In the affairs of the British Medical Association he always took a warm and active interest. He had been president of the South Wales and Monmouthshire Branch and of the Cardiff Division. He was foremost in the fight against the Insurance Act. A past president, he was a frequent contributor of papers to the Cardiff Medical Society, and until recently took an active interest in its discussions. Hanging on the walls of the society's rooms is a series of photographs illustrating some of Dr. Vachell's pioneer work in the surgery of the thyroid. He was justly regarded by a large circle of patients as a steadfast friend and trusted adviser. The wide range of his interests was very notable. His leading characteristics were an unbounded and infective enthusiasm—inexhaustible capacity for work—great kindness, sympathy, and generosity. He was a man of strong personality and striking presence. His was essentially a full life. His skilful, devoted, and kindly services to the poor, his readiness at all times to help his colleagues with his wise counsel, and his unswerving loyalty will always be remembered with affection and esteem."

Dr. Vachell married, in 1877, Winifred, daughter of the Rev. J. W. Evans, rector of Cossey, who, with one son and two daughters, survives him. His brother, Dr. Herbert R. Vachell, is also a well-known Cardiff practitioner and a member of the consulting staff of the King Edward VII. Hospital.

SEVENTH INTERNATIONAL CONGRESS FOR OBSTETRICS AND GYNÆCOLOGY.—This congress will meet in New York from Sept. 13th to 17th, 1915, under the presidency of Dr. J. Riddle Goffe, of New York. An executive committee has been appointed for each country that has hitherto participated actively in the proceedings of the several congresses to select reporters on the fixed subjects, and to recommend to the programme committee the names of other suitable persons to represent their respective countries. There will be one scientific session each day, from 9 A.M. to 1 P.M. The afternoons will be devoted to clinics, sightseeing, excursions, &c. The scientific programme will include: The Remote Results of Operations for the Relief of Retro-displacements of the Uterus, both Simple and Complicated; reporter, Professor Th. H. Van der Velde, Haarlem, Holland. The Treatment of Puerperal Infections; reporter, Dr. Edward P. Davis, Philadelphia, Pa., U.S.A. The Value of Radio-activity in Gynæcological Therapeutics by (1) Roentgen Ray, (2) Radium, and (3) Mesothorium may be discussed in individual papers or in the form of reports. Friday, Sept. 17th, Miscellaneous Papers. National societies are invited to discuss these subjects at least eight months before the meeting of the congress, and to have reporters collect and digest these discussions and report their conclusions.

Correspondence.

"Audi alteram partem."

MINERS' PHTHISIS ON THE RAND.

To the Editor of THE LANCET.

SIR,—THE LANCET of April 11th contains two contributions by Mr. B. G. Brock and Mr. J. L. Aymard on the Miners' Phthisis question.

I am taking the liberty of examining some of their arguments as I feel sure that an absolutely impartial statement would be of interest to those who have read Mr. Aymard's effusion. My impartiality can be judged from the following. I have worked on the mines of the Rand for a period just exceeding three years, and have now given up mining owing to silicosis, and consequently am, according to Mr. Aymard, one of the victims sacrificed to Mammon by its High Priests, the Chamber of Mines. I have no money invested in the mines, and am not working for any of the mining houses, and I am not employed, nor do I so desire to be, by any of the benefit societies or unions, which being of strong labour sympathies can be said to represent Mr. Aymard's side of the question.

To take his letter seriatim. His first paragraph, I think, can be more or less ignored. When a man says that his "statements have never been proved incorrect," and that his "opponents are cursed with" "damnable political insincerity," I think, Sir, any fair-minded man understands that it is a political manifesto and not a scientific treatise that he is reading. In his next paragraph he first attacks "commission after commission" as "being packed with incompetent persons." Who is Mr. Aymard that he should set himself up as a judge of mining or medical experts? He then clinches his argument by saying that 2000 less men are employed to-day than in 1911. Let him be honest and say if this is really due to phthisis. I think any of the hundreds who are to-day walking the reef looking for work would be quite willing to convince Mr. Aymard that this shortage is the result of the late strikes and not of silicosis. A little further down, in relation to the deadly dust, Mr. Aymard, referring to the process of "collaring a hole," states that during this process "more frequently than not no water is used." In a later paragraph he again indulges in a little hyperbole at the expense of the mining houses, because, according to him, they are placing no limit on the number of machines a competent miner supervises. Now anyone who has had any experience of mining will agree that it is a very rare thing for a miner to allow anybody but himself to supervise the direction of a hole. The reason for this is that in driving, for example, a hole started ½ in. away from its proper place may easily spoil the whole day's work. This is the period when Mr. Aymard says no water is used.

The following observations on this water question may be of interest. A shift boss is bound by law to report any breach of regulations, the most stringent of these regulations being those with reference to prevention of phthisis. Now compare the treatment a shift boss gets from the management and from the men in this respect. The management generally employs a man who is known as manager's assistant, or some such title, whose main duties are to pay surprise visits. If he finds a man not using water when drilling his first question is, "Has your shift boss been here?" If the answer is in the affirmative the shift boss will be reported to the manager, and probably fined if not "fired." Now as to the men who are continually complaining about the "callous, inefficient administration," to quote from Mr. Brock, I can confidently affirm that out of an average of nine developers I had on my section when shift bossing, only two made proper use of the water the mine supplied. The reason they did not use the water is because they are willing to risk their own lives, and what they do not consider, the lives of the kaffirs working for them, and also of all persons in the direct air current from them, rather than get soaked through and run the chance of pneumonia. It was impossible to get evidence to convict as they generally place a boy—i.e., kaffir—to watch for the approach of any of the staff. My authority for these two statements is that I have been told by the men themselves that they do this.

I think I have shown so far that it is more owing to the men's abuse of precautions than to the management's lack of precautions that phthisis is still prevalent. Mr. Aymard's remark *re* breakdowns due to too great a pressure of water is so idiotic that I wonder he had the temerity to try to bluff so obviously. In fact, it is the rarest thing in the world to find a man working on machines who does not give as his excuse for not using water that "there is not enough pressure." To obviate this the Mines Department brought out the amended regulations, 1913, to compel the miners to have a pressure of water *over* a fixed minimum of 30 lb. to the square inch. I think this shows that it is not due to the use of water, but to its neglect by the men that this scourge is still prevalent. Owing to the fact that Mr. Aymard's advice *re* an expert on silicosis was not followed by the mining houses he asserts that the rule of these houses is that "no experts wanted from oversea except when required for political purposes." This is another example of the political manifesto. Can he answer for what political purpose did the houses bring out, at the expense of the mining industry, Sir Almroth Wright and Surgeon-General Gorgas, who, Mr. Aymard has said, "did not study the phthisis question properly." Your readers, Sir, can appreciate the fact that when men of their standing, with their staffs, are brought out, necessarily at great expense, defrayed entirely by the mining industry, Mr. Aymard's advice is not likely to be taken, or paid for.

In his paragraph referring to Mr. Moynihan's discoveries, he cheerfully states "that the question at what depth this," meaning the introduction of steam, "would be impracticable, if at all, remains to be seen." In the interview he states: "After blasting, a mine could easily, and comparatively cheaply, be filled with steam." What sublime confidence! Mr. Aymard ought to know that the upper levels of most of the mines are very nearly "worked out." The greater part of the work is now carried on from 2000 ft. to 4000 ft. below the surface, and development from 3000 ft. downwards. I leave it to your readers to ask any competent engineer for an estimate for conveying steam 3000 ft. down a wet shaft, then bringing it along drives at a temperature of, perhaps, 80° for a distance of half a mile, or may be more, and then discharging it at such a temperature that it will fill the mine *as steam!*

I would suggest that if any of your readers feel interested in this scheme they then look at the monthly reports of these mines and see how many mines would become unpayable if this experiment were tried. Then think of the number of unemployed there would be left. I refer to this steam idea as an experiment. Though Mr. Aymard is quite convinced that the mining houses are only using water in preference to steam through "false economy," he seems to have forgotten the furious tirades he favoured us with during the last few years on the false economy of not using *water.* The mineowners followed his advice as he then gave it, and in THE LANCET of April 11th of this year you can see the manner in which he shows his gratitude.

Now, Sir, as to the remedy. I give my ideas, as I consider that any person may be the lucky person to hit on the right solution. The only hope I see is to make it an offence for anyone not to use water, and on a second offence to remove the offender's blasting ticket. This would of course mean a large reduction in the number of competent miners employed. This could be effected by the system of well-paid sectional shift bosses in charge of a number of working places. Under these you could have men placed on day's pay in charge of each place. These men would be responsible to the shift boss that work was carried out as he ordered; the shift boss to be solely reponsible for blasting. This would remove what I consider the curse of the present system—viz., a miner earning, say, from £40 to £150 per month being under the charge of a shift boss who is paid often as low as £30 per month. What a chance for bribery! As a general working rule I would suggest that the shift boss should be paid sufficiently to resist all temptation to bribery, and the man paid low enough to prevent his being able to afford in comfort to pay bribes or fines for not using water.

In my opinion it would also help if the compensation for first stage were materially increased, and that for third stage phthisis diminished to prevent what is often done now, an unfortunate sufferer "hanging on" till he gets the fatal stages, so as to leave more money to his family. It may be impossible to carry out these suggestions, and the advantages of them may be illusory. I hesitate to express a definite opinion in the face of the experts whom the mining industry are so continually consulting, as I feel that if I did I would only be adding myself to the category of the fools who rush in where angels fear to tread.

I am, Sir, yours faithfully,
PHILIP H. FRANKS, B.Sc. (Mining) Birm.

Johannesburg, May 11th, 1914.

THE PLEA FOR IMMEDIATE OPERATION IN APPENDICITIS.

To the Editor of THE LANCET.

SIR,—Will you permit me to write a few lines in reply to Mr. Edmund Owen's letter in THE LANCET of June 27th? I have said in a former letter that a surgeon can frequently give a correct opinion as to the pathological state of an appendix before its removal in an acute attack of appendicitis from a consideration of the history, symptoms, and local examination of a patient. Mr. Owen denied this. In a second letter I gave notes of cases in which this had been done. It does not assist to call this guess work; the cases to which others could be added represent facts, and it is not possible to ignore them. I do not claim any special skill in this matter; few surgeons are satisfied with the simple performance of the operation in an acute abdominal case. They do not refuse to do the operation because of any doubt which they may have as to the exact cause of the symptoms of urgency. They recognise that early operation is necessary, endeavour to form an opinion before doing it, and make careful notes of everything found in order to compare it with other cases and see why there was a difficulty in making the diagnosis in any particular case. It is not enough at the present day to record in an acute appendix attack that the appendix was "gangrenous." We want to know whether the gangrene was local or affected the whole of the appendix. We also want information as to the probable cause of the gangrene, whether this was secondary to a concretion, took place beyond a stricture as a result of over distension, the position of this stricture, &c. The state of the omentum and surrounding peritoneum, with the character of any exudation, must also be noted. It is not possible for anyone frequently engaged in this branch of surgery to fail to advance in his knowledge of the subject if he tries to work in this way. I think it is the right way in which to proceed, although Mr. Owen does not appear to regard such an attempt as likely to prove of practical use. The custom of "waiting to see" until the veil is lifted is not satisfactory either in politics or in surgery for the ultimate good of the nation. I have not contended that anyone can state the exact condition of the appendix in every case; indeed, I have given evidence to the contrary. My point is that the surgeon can tell in many patients, and I have no doubt the number of these will increase. I have shown that a correct diagnosis of the state of the appendix has a practical value to the individual. The story of the racing man who placed three horses in their correct order before a race has no bearing on the question, and I cannot agree that it is all a game of chance.

I am, Sir, yours faithfully,

July 3rd, 1914. WILLIAM H. BATTLE.

To the Editor of THE LANCET.

SIR,—In view of the recent correspondence in your columns the following case seems to me worth recording, as it shows so plainly the impossibility of differentiating between mild and grave conditions of the appendix, and the danger of delay.

A boy, aged 12, was brought on July 4th at 8 P.M. He had been running about as usual, but had complained of occasional abdominal pains, so his mother thought she had better bring him. The boy was thin and looked badly nourished. The temperature and pulse were normal, and he said he had no pain. The abdominal wall was loose and flaccid; no sign of muscles being *en garde;* no increased resistance; no tender point. The appendix could be easily palpated through the lax abdominal wall; it felt hard and large, but was not tender to light pressure or rolling. When pressed firmly it gave a slight shooting pain to left hypochondrium. I operated the next day, and up to the time of operation the condition was unchanged. The pelvis contained a large amount of free clear fluid. The appendix was congested on the outside and hard with an old adhesion from the meso to the iliac floor. Inside the appendix was tightly strictured at its proximal end, and was full of pus. At the distal end was a piece of iron wire curved with sharp ends, one of which had nearly penetrated the peritoneum, the distance between the two points being three-eighths of an inch.

I had no suspicion that there was serious mischief in this case, and cannot see how anyone could have diagnosed it.—I am, Sir, yours faithfully,

Watford, July 7th, 1914. J. C. BARKER.

THE SURPLUS FUNDS IN LONDON.

To the Editor of THE LANCET.

SIR,—If the Botha-like way in which the Caxton Hall meeting of last week was conducted is a sample of the methods of the new organisation which promoted it, it augurs ill for its future. For a chairman—not named in the notices calling the meeting and not elected by it—to announce that *he* is not going to allow amendments to the resolution he and his friends have drafted is as alien to the true spirit of trade unionism, which was invoked, as anything one can imagine. That my amendment, previously communicated to him, which embodied everything of moment in the resolution, but suggested arbitration as the most practical solution of the difficulties of money allocation, was, after a preconcocted show of fair play, despotically ruled "out of order" was the plainest proof that the men who are contending for a *pro rata* distribution have no confidence in the justice of their own claims. For the greatest number of the men on the London panel are men with small lists. Why on earth they should allow themselves to be led blindfold by the big-list men who, while pretending to speak for the whole body, openly announce their intention, if they can procure such a division of the "surplus," of pocketing the greater part of it themselves, passes my comprehension. Such a division means actual ruin to many a small-list man. Dr. Angus was allowed to speak in favour of a *pro rata* division; I was instantly forbidden even to allude to its unfairness. So "fair play and no favour" is *not* to be the motto of the new organisation. We small-list men have our contract rights if we will but be wise enough to stick to them. For 1913 the right of proceeding against the London Insurance Committee for breach of contract expires on the 11th inst. by the provisions of the Public Authorities' Protection Act of 1893. I have therefore, after patiently waiting to the last moment for the London Insurance Committee to do justice, commenced legal proceedings, which I shall certainly not drop unless some proposal as equitable as the one which my amendment suggested is accepted by the Government and carried into speedy execution.

The Commissioners, it appears, are now stultifying their own consents to other schemes by laying it down "on legal advice" that nothing but a *pro rata* distribution is allowable under the Regulations. The proposition that one clause in a set of regulations can be intended and made to govern a state of things wholly created by the violation of previous clauses of the same regulations is the "tallest" substitute for a legal argument that I have yet met with, and the legal "light" that evolved it, whoever he be, ought to return to school. Besides this, the subsections relied on refer to a doctor's "list" which has, to comply with the Regulations, to be made *after* assignment and to include assigned persons. No legal doctor's "list" therefore exists in London, which again prevents the application of these clauses to the existing facts. If any attempt is made to apply these clauses to the distribution of the "surplus" it can be easily stopped by an appeal to the courts for an injunction, which I should at once make. Nothing but fresh legislation, such as submitting the whole question to arbitration, can solve the problem.—I am, Sir, yours faithfully,

Paddington Green, W., July 6th, 1914. H. BAZETT.

THE NATIONAL MEDICAL UNION.

To the Editor of THE LANCET.

SIR,—You will excuse my trespassing upon your time and space, but on reading Mr. E. H. Worth's letter in your issue of July 4th I notice that he has misquoted the principal resolution passed at the general meeting on June 27th. As chairman on that occasion I feel it my duty to give the resolution in full as passed with only four dissentients. It is as follows:—

> Resolved: That refusal of service in any capacity under the National Insurance Acts, 1911 and 1913 be a condition of membership of the National Medical Union. Nothing in this resolution shall prevent any member of the National Medical Union from signing certificates to enable insured persons to obtain sanatorium and sickness benefits under the National Insurance Acts in his private professional capacity.

May I congratulate Mr. Worth on his generous offer to the guarantee fund? He is not alone in his enthusiasm, and I can assure him that the National Medical Union stands to become a power in the land.

Hoping that many non-panel readers of your valuable paper will respond to his very forcible appeal for their support to the National Medical Union, I am, Sir, yours faithfully,

VIVIAN T. GREENYER.

"Edzell," New Church-road, Hove, July 6th, 1914.

To the Editor of THE LANCET.

SIR,—I read with much pleasure Mr. Worth's letter in your issue of July 4th, and I desire to add my appeal to his and urge all non-panel men to join the National Medical Union, and thereby assist to uphold the best traditions of the profession. The fight, deplorable though the sequel has been, is by no means over, and there may yet be critical times ahead. Surely, then, it is the duty of every man who from principle has not joined a panel to take some part in the work of the National Medical Union, and surely, also, support may reasonably be expected from the consultant branches of the profession, and especially from those who, as teachers in the medical schools, can influence future practitioners.

I shall be glad to join Mr. Worth in increasing my guarantee to a similar extent, and I have no doubt many others will do the same. There are 15,000 non-panel men in the country, and it should be easily possible to make the National Medical Union a most powerful association.

I am, Sir, yours faithfully,

Huddersfield, July 7th, 1914. W. L. W. MARSHALL.

THE NORWICH MEDICAL INSTITUTE.

To the Editor of THE LANCET.

SIR,—I have read with considerable pleasure the remarks of your Commissioner in THE LANCET of July 4th (p. 51), on the work of the Norwich Medical Institute, of which I am one of the medical officers. I am sorry not to have had an opportunity of meeting your Commissioner during his visit to Norwich, when I think I could have shown even more conclusively that institutional practice gives opportunities for good work to be carried on.

I have only one criticism to offer of your otherwise fair summary, and it is on the question of sweating. I do not know what dictionary your Commissioner uses, but mine defines sweating as "the practice of employing poor people at starvation wages." I must therefore beg to differ from him as to the strict meaning of the word "sweating." But apart from this verbal quibble your Commissioner—quite unintentionally I willingly believe—proceeds to convey the impression that this institute, like some others, makes a profit for other purposes out of moneys paid for medical services. Such is not the case, and has never been the case for many years before the coming of the Insurance Act—certainly not within the seven years of my association with the institute. With the exception of a small balance carried over from year to year the whole of the income has been absorbed by the medical needs of the members, with the single exception of an insignificant sum—quoting from memory I think about £12 per annum—paid to the Medical Alliance (a body formed to guard the interests of institutes generally) in subscriptions and expenses of delegates to an annual conference extending over two days. For years the lay members of the board of delegates and management committee have not received a farthing for their services. They are now, since the Insurance Act came, paid a small fee for each attendance, which payment has been sanctioned by the Insurance Commissioners as reasonable.

There have been two other payments to which the local division of the British Medical Association has taken exception, though they are both in a sense medical payments. One is a subscription of 5 guineas annually to a convalescent home, and the other is the payment of consultation fees when recommended by us, the medical officers, in cases requiring special advice which could not be obtained at the hospital, and for which the particular patients were too poor to pay. But though the British Medical Association has denounced these payments certain medical men, who would not meet us in consultation, have not been above taking these fees, though well knowing that the institute paid them. I should add that these consultation fees have not averaged more than 12 guineas a year for several years.

I quite fail to see how these payments can be called making a profit out of our service. Why, Sir, so far from wishing to "sweat" us in this way our committee has, owing to delay in payment by the Local Insurance Committee, borrowed money last year rather than ask us to accept a penny less than the percentage to which we were entitled by our agreement with them. They might with fairness have asked us to share the risk and the delay, but they took the whole burden themselves. I speak of lay management as I find it.

I am, Sir, yours faithfully,

Norwich, July 4th, 1914. ARTHUR H. PRIESTLEY.

VITAMINES AND AN UNUSUAL CASE OF SCURVY.

To the Editor of THE LANCET.

SIR,—As your readers at the present time seem to be interested in vitamines, perhaps the following case of "scurvy" may be of interest.

Mr. X., aged 23, came to the Malay Peninsula to plant rubber. He had eaten nothing but porridge, bread (white) and butter, and milk since the age of 3 years. He had always been very fit and well, was of good physique, and had had some success at football, cricket, &c. Four months after arrival in the Federated Malay States subtertian malaria set in, and six months after arrival he went into the European hospital of the State, complaining of swelling of the left leg and a large "bruise." There was no history of injury and he was discharged in 11 days. A fortnight after his discharge from hospital a second attack of malaria was experienced. Ten months after his arrival in this country he had a third attack of malaria. Then one month after this he returned to the European hospital, as his right leg went "black" and was swollen and painful. There was no history of injury. A diagnosis of scurvy was made. As the patient had nausea at the sight of soup, meat, &c., and vomited if he tried to eat them, he drank lime squashes. He then came under my care, with a view to his being sent home. The patient was bronzed, but had lost 1½ st. in weight lately. The right leg was still swollen and discoloured about the ankle. Pressure on the tibia was very painful. The heart, chest, &c., were clear. Hæmoglobin, 70 per cent. (Tallquist). No parasites in blood. Red blood corpuscles, 3,800,000; white blood corpuscles, 25,000. Urine and fæces, normal.

The patient lived with me for over a week, and as I had no porridge prepared he had to eat "at" whatever was going, and soon could take soup, potatoes, rice pudding, and very little green vegetables and a banana. He quickly improved and was sent to another estate, where there is a resident doctor. He did light work, but soon made porridge his chief article of diet again. In a month he had his fourth attack of subtertian malaria and returned to my care. Hæmoglobin, 65 per cent.; red blood corpuscles, 3,200,000; white blood corpuscles, 25,000. Having scratched a mosquito bite his right leg quickly swelled up and became septic, and when this had healed he returned to England.

This case has two or three points of interest. 1. A man living on practically nothing but porridge without any apparent cause. 2. Scurvy amongst Europeans is extremely rare in the Federated Malay States. I can hear of no other case. 3. The fact that he kept fairly fit so long. I take it that he would probably never have got "scurvy" if he had been able to obtain fresh milk. Fresh milk is very hard to obtain here, and when one has once seen a cow milked one feels much happier with the tinned variety. Also, brown bread is difficult to obtain and does not seem to be made to any extent by the native bakers.—I am, Sir, yours faithfully,

Kuala Lumpur, F.M.S. R. McC. LINNELL.

THE COUNCIL ELECTION AT THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

To the Editor of THE LANCET.

SIR,—May I through the medium of your columns thank those gentlemen who voted for me in the recent election to the College Council? At the same time, I would like to take this opportunity to make it distinctly understood that I dissociate myself entirely from the very undiplomatic letter to which Mr. Percy Dunn takes exception in your issue of July 4th. His complaint as to its tone is very justifiable, and its terms are calculated to alienate the cause of the Members and to put back the realisation of their claims.

When I seek election next year I shall reply to the questions sent me with this experience well in memory. I am, Sir, yours faithfully,

MACLEOD YEARSLEY.

Queen Anne-street, W., July 7th, 1914.

THE BACTERIOLOGICAL EXAMINATION OF MILK.

To the Editor of THE LANCET.

SIR,—I am glad that a distinguished bacteriologist in the person of Professor R. T. Hewlett has come forward to point out in your issue of July 4th (p. 44) the fallacies inherent in the quantitative enumeration of bacteria in milk.

At the Infants Hospital, Vincent-square, S.W., the milk coming from the hospital farm and from other sources is examined daily, and I have long been of the opinion that the bacterial count method is of little value. Especially is this so when milks are examined in different laboratories and the results are compared. The difference in the precise method and in the media employed (even the slight differences in the preparation by competent persons of the same medium), and many other factors, result in all kinds of serious error. Of the greatest importance is the fact that the milk with the higher count may be a much better milk than that with the lower. Thus, we find that A contains 55,000 bacteria per c.c., while B only contains 14,000. But when we come to our observations in regard to (1) time of curdling at 19° C. and 38° C.; (2) development of acidity at 38° C., (3) character of curd formation—gas production or otherwise, (4) nature of bacteria developing in the milk at 19° C. and 38° C., we find that A is a much better milk than B, for the changes in A compare more closely with the changes occurring in a milk taken directly from the cow under strict precautions than do those in B. One method is of great value—the microscopical examination of the centrifugalised deposit suitably stained. By this method an experienced observer can obtain information of the greatest practical importance. Not only can the number of bacteria be approximately estimated, but important information can be obtained with regard to the nature and probable source of any contamination. Thus, Gram-negative bacilli generally indicate colon organisms and consequently manurial contamination. Dust from dirty fodder can be recognised both by the general débris and by the presence of moulds. The cellular elements in the milk are readily recognised and early warning of mastitis may be forthcoming. An interesting point is that in the case of a contaminated milk the observer is often able to make a prognosis in regard to the behaviour of the milk when submitted to the above-mentioned tests. If this prognosis proves to be correct the case against the milk is a strong one. The great practical value of the method is its rapidity. Within half an hour of the receipt of the milk the examination of the centrifugalised deposit can be completed, and consequently, in the case of any defect in quality, we are able immediately to telephone to the farm, at the same time indicating the probable source of the contamination. It is important that the centrifuge should be of large capacity, so that the samples of milk may be sufficiently ample to be representative, and we have recently installed Professor S. Delépine's centrifuge as with this instrument over 1½ litres can be dealt with at one time, while owing to its high speed (at 5000 revolutions—over four miles a minute) the usual time of centrifugalisation is much shortened. I am, Sir, yours faithfully,

Harley-street, W., July 4th, 1914. RALPH VINCENT.

TOUCHING FOR THE KING'S EVIL.

To the Editor of THE LANCET.

SIR,—A second letter upon this subject from Dr. F. Parkes Weber having appeared in your columns on June 27th, may I be excused for taking up my pen at his request in the hope of partially replying to some of the questions put forth by him?

He asks firstly: "Are the old well-cast specimens [of that much-discussed token, *Medallic Illustrations*, Plate xxxiii., 23] to be regarded *all of them* as forgeries of the period for the use of ill-disposed persons to gain fraudulent access to the king?" To this I reply that the wording of the document mentioned by me in my last letter, and which will be published in full in the *British Numismatic Journal*, lies open to a dual interpretation. The passage reads: "Whereas wee are informed by our Serjeant-Chirurgion, that there hath been a great abuse comitted by dissolute and ill-disposed People, who to gaine the Gold only, have counterfeited his tokens, which were cast in a mold made by a Freemason, wherein we have not only been deceaved of many Angells," &c. The grammar, if correct—a doubtful assumption at that period—should mean that the original tokens were cast by the Freemason. Against this is the fact that both struck and cast pieces of the better class exist, but it was no uncommon practice, as we notice in the case of badges and medals of Stuart times, to make one pair of dies, and after striking from them a number of specimens, to multiply these by casting. We might also read the passage as meaning that the Freemason was the forger, but this is immaterial, for fraudulent casts had clearly been made, and some poor examples seem to fit into this category.

Dr. Parkes Weber's second question relates to the fact that we have seen no tokens the size of an angel, and suggests that this condition may have been abandoned. But this I venture to think was unlikely as the change of size would be material in distinguishing the new token from the old, no mention being made of an alteration in design. We might account for the above rarity by the injunction that the tally should be returned to the mintmaster after use, "whereby he may know what number of Angells have bin expended." Naturally under the Commonwealth, "touching" being no longer in vogue, the officials would melt down the metal lying idle. Some pieces, however, should have escaped, being unredeemed, and unless such be found this point must remain "non proven." I am far from suggesting that the other pieces referred to by Dr. Parkes Weber were not made for a similar purpose of admission, but might they not be intended for the coronation or some other ceremony, inasmuch as the legends are less appropriate to "healing" than that of the token which we have discussed?

I did, however, in my lecture in May before the British Numismatic Society go so far as to mention the possibility that the "Soli Deo Gloria" pattern halfpenny—for as such its exact weight induced Mr. Montagu to class it (see Montagu's "Copper Coins of England," p. 41, No. 1)—of the second Charles, might be a ticket of admission to his "touching" séances. It is not very rare and exists in various combinations of metals, a not unlikely precaution to regulate the number of persons coming in successive weeks, for the "healings" under this king were very frequent. Mr. McLachlan suggested that it might be the touchpiece of Charles II.'s exile, and put forth in the *Numismatist* for March, 1912, excellent arguments for this attribution, which we have no documentary evidence to disprove.

Lastly, Dr. Parkes Weber refers to the silver touchpiece in the Wellcome Historical Medical Museum, reading IAC. 8 instead of IAC. 3. This is an example highly interesting to the student, not only from its rarity, but for historical associations, agreeing as it does in other respects with the type used by James Francis Edward during his exile in France, whilst this Scottish title brings to mind the dies, bearing date 1716, engraved for the *King de Jure*, as Jacobus VIII., and intended for the coinage of the northern kingdom, had his second invasion proved successful.

I am, Sir, yours faithfully,
HELEN FARQUHAR.

Belgrave-square, S.W., June 30th, 1914.

To the Editor of THE LANCET.

SIR,—I regret a misstatement in my brief note on the above subject in your last issue. The coin alluded to is *not* the one that caught my attention in the Hodgkin collection: my informant and I misapprehended one another.

I am, Sir, yours faithfully,
London, July 6th, 1914. RAYMOND CRAWFURD.

LATIN FOR MEDICAL STUDENTS.

To the Editor of THE LANCET.

SIR,—I was interested in your annotation on Latin for medical students in THE LANCET of June 27th. I heartily endorse your remark that "the student who has learned Latin will find his examinational career much easier." The fact is, that unless the teaching of classics be so reformed as not to clash with conditions which have vastly altered in the last 25 years, it will have to go. The modern boy can have his interest in Latin awakened if after the necessary grammatical preliminaries he is assisted to read intelligently the more interesting authors. He ought to read far more and do less of putting English into Latin. The master should assist him in class to translate unprepared passages, while he explains all the historical and antiquarian matter necessary to render the author intelligible. Such mysteries as the ethic dative, anacoluthon, and oxymoron are best avoided. The practice of prescribing a set book for an elementary examination is an abomination which London University has done its best to end. Boys who are instructed in class how to tackle passages they have never seen before are bound to get a better grip of Latin than those who work up a set book and notes parrot fashion. Unless the Universities of Oxford and Cambridge can be got to abolish compulsory Greek for those destined for mathematical, medical, or scientific careers the whole fabric of the classics as a valuable educational medium will be crushed under the juggernaut car of modern hustle. Latin verse composition for the average boy is a hideous waste of time, while Greek iambics are something worse. I well remember as a young boy being dragged through Book II. of the Gallic War with never a glance at the map or a word on field service conditions in the Roman army. The same absence of intelligent teaching doutless lies behind the well-known schoolboy regret that the falling tree did not after all make a slightly better shot for Horace's skull—

. . . prope funeratus
Arboris ictu.

I am, Sir, yours faithfully,
Shadwell, E., June 30th, 1914. ATHOLE ROSS.

THE NATIONAL INSURANCE ACT.

THE REPORT OF THE NATIONAL INSURANCE COMMISSION.

THE report of the Insurance Commissioners dealing with the second year of the working of the National Insurance Act gives the following figures with regard to the number of medical men on the panels. 1913: Jan. 15th, 13,996; April 14th, 15,659; Oct. 13th, 15,870. 1914: May 31st, 16,059. The Approved Societies are stated to have 10,533,220 members, the Friendly Societies accounting for 4,856,584. Of this total industrial insurance companies account for 3,759,396, and trades unions for 1,154,484. The other organisations concerned are collecting societies with 663,659, and employers' provident funds with 99,097 insured persons on their lists.

The portion of the report devoted to estimating the financial position of the Approved Societies will naturally be of considerable interest to those concerned with the practical working of the Act, and particularly to the medical profession, because there has been a tendency among Friendly Societies, whether conscious of financial danger or not, to complain that any excessive expenditure upon sickness benefit has been exclusively caused by laxity on the part of the medical profession. The report of the Commission affords little or no proof that this ascription of blame is correct, so far as any serious responsibility for the financial position of the societies is concerned, although Mr. A. W. Watson (the chief actuary of the Commission) is of opinion that an excess of sickness claims referred to below points to the necessity for increased vigilance on the part of societies and of medical men giving certificates, and further expresses the opinion that it is impossible to doubt that there has been in many quarters too little recognition of the high degree of confidence which Parliament reposed in the medical profession when it decided to withdraw the administration of medical benefit from the Approved Societies, and that a great improvement in certification is both necessary and practicable. The general conclusions which he arrives at with regard to the Approved Societies and the incidence of sickness benefit are summarised as follows:—

1. The sickness claims of men, taken as a whole, have been within the actuarial provision.

2. The sickness claims of women, taken as a whole, have been materially in excess of the actuarial provision.

3. Great variations have arisen between the sickness claims made upon individual societies. While in many cases the claims have exceeded the estimates, there are many other cases in which the cost of the benefits has been so far within the estimates as to lead to the expectation that a large number of societies and branches will be found upon the first valuation to be in possession of surpluses.

4. The sickness claims of both men and women have been, in the case of many societies, above the standard which should normally prevail, and which may be expected to obtain when societies have become experienced in administration.

5. The claims for maternity benefit have varied considerably as between different societies.

It may be pointed out that any conduct of medical men producing an unjustifiable drain upon the resources of Friendly Societies might be expected to affect them generally, rather than to produce variations between the claims made upon individual societies. Also it is evident that financial strain upon the funds of societies is most markedly felt in the case of claims made by women. The existence can hardly be urged seriously of a negligent tendency by medical men on the panel to favour the claims of women to sickness benefit. Mr. Watson refers in particular to the allowance of benefit to pregnant women, and observes that many of those claims have been on the border line of justification, and that nearly all represent demands unknown to the societies which were made before the Act provided for women, and would have been repudiated by them as not within the scope of insurance against sickness.

THE LONDON INSURANCE COMMITTEE AND THE DISTRIBUTION OF THE UNALLOTTED FUNDS.

The London Insurance Committee having been advised by their medical benefit subcommittee either to proceed at once with the distribution of the fund in their hands in respect of unallotted patients, or to express the opinion that the Insurance Commissioners should undertake to distribute it, were asked at a meeting held on June 25th, by Mr. F. Coysh, chairman of the general purposes subcommittee, to distribute the fund immediately. Mr. Coysh's motion to that effect was however displaced by an amendment moved by Mr. Kingsley Wood and eventually carried after discussion, in the course of which medical members of the committee protested strongly against the further delay which would be involved and against departure from the principle of distributing in proportion to the numbers on the lists of the recipients. The amendment thus adopted was "that having regard to the decision of the committee that it is undesirable that any medical man on the London panel should undertake to treat a larger number of insured persons than 2000, the committee is not prepared to distribute the surplus moneys in the panel fund on a *pro ratâ* basis unless and until a legal decision has been obtained or further parliamentary authority has been given."

THE LONDON COUNTY COUNCIL AND THE LONDON INSURANCE COMMITTEE.

The London County Council is entitled to appoint 19 out of the 80 members of the London Insurance Committee and three of its nominees must be medical practitioners. The Council has selected the following as its medical representatives for the year 1914–15: Sir John Collie, Sir Shirley F. Murphy, and Dr. R. M. Beaton.

THE LOCAL GOVERNMENT BOARD AND THE TUBERCULOSIS SCHEME FOR LONDON.

The London County Council has received a letter from the Local Government Board commenting on the scheme for the residential treatment of tuberculosis approved by the Council on May 26th (THE LANCET, May 30th, p. 1559). The Board stated that, in consequence of the refusal of the London County Council to bear any part of the cost of reating insured persons, it understood that the London Insurance Committee did not propose to arrange for residential accommodation through the County Council. There were clearly many advantages in dealing with insured and uninsured persons by one scheme, and the Board greatly regretted that the County Council had not been prepared, as the councils of other great towns had been, to undertake to provide the accommodation necessary for the whole community, subject to the condition that half the annual cost, after deducting receipts from the Insurance Committee and other sources, would be met out of grants from the Local Government Board. The Board had some doubt whether the proposals of the Council in regard to the selection of cases for residential treatment would prove satisfactory in actual working. While the Board took no exception to the establishment of the proposed honorary advisory board, it considered that the Council, instead of authorising this board to appoint medical referees to examine selected cases for residential treatment, would have been well advised to appoint a clinical tuberculosis officer, whose duties would have included advising the Council in the selection of cases for residential treatment. The proposed system of payment by fee per case the Board did not regard desirable as part of a permanent arrangement. Presumably the number of cases normally referred to the medical referees would only be a small proportion of the whole; otherwise the expenditure for this purpose would be unduly high. The Board, however, would not object to these proposals on the understanding that they were reviewed at the end of 12 months, when, if experience showed them not to be satisfactory or economical, some other machinery for selecting cases could be adopted. It was important that no action should be taken which might debar persons in need of treatment from obtaining it, and if any charge was made it should only be in cases in which there was clear evidence that a contribution towards the cost might be expected. It did not appear to the Board that any obligation could be imposed on medical practitioners who recommended cases for residential treatment to investigate and advise as to the financial circumstances of the patients. Subject to these comments the Board approved generally of the proposals of the Council as regards adults, on the understanding that the provision of beds at present proposed was to be regarded as an instalment only.

The Board is in communication with the Board of Education in regard to the proposals for the treatment of children. It will be necessary for the institutions in which beds are retained by the Council to be approved by the Board for the treatment of tuberculosis if such approval has not already been given.

The National Medical Union.

The first general meeting of this Union was held in London on June 27th, when the report of the provisional council elected at the conference in November last was dealt with and the permanent officers were appointed. It was decided that the Union should apply for registration under the Companies Act, 1867, without the word "limited" as part of the title, and that the liability of members should be limited by guarantee to £1. Arrangements were made for the immediate election of the permanent council by the federated associations on the basis of one representative for every association of 25 subscribers and under, with an additional member for every 20 additional subscribers, the minimum membership entitling any society to elect a member of council being fixed at 10. The following, among other resolutions, were adopted as the basis of the policy of the Union:—

1. To organise the medical profession to the highest possible degree of efficiency in defence of its freedom and in protection of its economic interests.
2. To render every service possible to non-panel practitioners.
3. To oppose any prospective legislation to include dependants of insured persons participating in the medical benefit of the Acts under the present arrangements.
4. To agitate for repeal of the medical benefit sections of the Insurance Act, or such drastic amendments as would bring these sections into harmony with the principles of freedom on the part of the profession and public.
5. To lay down the principle of unrestricted free choice of doctor in any form of national insurance, to insist upon the unrestricted right of insured persons to make individually their own arrangements in connexion with the Insurance Act, and to insist that no doctor attending such persons be required to sign any contract with the Commissioners or any committee under the Act.
6. To place before the public in any and every way possible the dangers of the Act to public health, and its injustice to doctor and patient alike.
7. To maintain that a Medical Service is necessary for the genuinely necessitous classes of the community, *and for them only.*
8. To preserve an independent attitude with regard to party politics.

Further, it was agreed that the National Medical Union is not opposed to the principle of Health Insurance under such conditions as would conform with the other principles of its policy.

Charges for Medicine Supplied by Medical Men.

The Darwen Insurance Committee passed a resolution recently commending the Lancashire Insurance Committee for "proceeding against panel doctors for charging insured persons for medicine." From the discussion on the subject it appeared that the case for the medical men was that insured patients sometimes prefer to pay for medicines made up by their medical attendants to taking a prescription to a druggist who would supply the medicine free of charge. On the other hand, it was stated that the insured person was often not aware that he could take a prescription and get it made up without having to pay for it, and that in some instances patients were being told that the medicine supplied by the druggist would not be the same as that of the medical man. The question what course the medical man should take when asked to supply medicine by a patient who preferred to have it from him was propounded by a medical member of the committee. It seems reasonable that an insured person should have the same freedom in such a case as one uninsured. Naturally any representation of a misleading character ought to be dealt with by an insurance committee with severity adapted to the needs of the individual case.

Mr. Arthur Hopewell-Smith, M.R.C.S. Eng., L.R.C.P. Lond., John Tomes prizeman of the Royal College of Surgeons of England and surgeon and lecturer on dental anatomy and physiology at the Royal Dental Hospital of London, has accepted the professorship of comparative odontology and dental histology, which the University of Pennsylvania at Philadelphia has decided to establish and endow.

Medical News.

UNIVERSITY OF CAMBRIDGE.—At the examinations for medical and surgical degrees, held recently, the following were successful:—

FIRST EXAMINATION.

Part I., Chemistry, and Part II., Physics.—E. Goodwin, Emmanuel.

Part III., Elementary Biology.—E. Goodwin, Emmanuel; and S. Riddiough, King's.

SECOND EXAMINATION.

Part I.—A. M. Ahmad, Downing; D. J. Batterham, Caius; D. C. Beaumont and W. H. Blackburn, Christ's; T. A. Butcher, Queens'; P. D. Chapman, Sidney Sussex; R. S. Corbett, Caius; G. P. Crampton, Downing; J. M. Downie, Christ's; A. Drewe, Trinity; J. R. Earp, St. John's; H. W. Eddison, Christ's; R. W. Fawcett, Caius; L. P. L. Firman-Edwards, Trinity; G. A. Fisher, Jesus; R. French, Downing; E. O. Goldsmith, Pembroke; G. A. Goolden, Caius; W. S. Gross, Jesus; E A. H. Grylls and J. S. La Fontaine, Caius; J. H. Le Brasseur, Pembroke; G. Lyon-Smith, Emmanuel; W. J. MacCombie, H. H. Marten, and C. K. Mowll, Caius; D. M. Muir, Trinity; C. L. Odam, Sidney Sussex; A. Orr-Ewing, Pembroke; R. R Powell, Emmanuel; I. M. Rattray, D. W. R Richardson, E. N. Showell Rogers, O. S. Thompson, and G. H. Ward, Caius; C. R. H. Weekes, Trinity; and A. Winfield, Downing.

Part II., Pharmacology and General Pathology.—J. C. Andrews, St. John's; G. L. Attwater, Pembroke; S. L. Bhatia, Peterhouse; A L. Bodley, Clare; G. A G. Bonser, St. John's; E. D. Broster, Christ's; M. Chadwick, St. John's; G. D. Compston, Trinity Hall; E. V. de Souza, Downing; A. W. R Don and E. Donaldson, Trinity; J. R. Harris, Queens'; A. G. Irving, King's; L W. Jones, Emmanuel; J. B. Leather and F. G. Lescher, Caius; W. H. Marshall, Pembroke; C. G. T. Mosse, Caius; D. F. A. Neilson, Trinity; J H. Parry, St. John's; C. F. Pedley, Jesus; F. S. L. Piggott, Emmanuel; J. S. Pooley, Trinity; R. A. W. Procter, Clare; W Raffle, St. John's; C. M. Ryley, Emmanuel; T S H Schäfer, Caius; W. G. A. Schüddekopf, Emmanuel; C. G. Schurr, Caius; H. W. Scott, Clare; B. H. Swift and E. P. W. Wedd, Caius; H. A. Whyte-Venables, Queens'; S. M. Wilcox, Emmanuel; and A. T. Woolward, Caius.

THIRD EXAMINATION.

Part I., Surgery and Midwifery.—S. G. Askey, St. John's; *W. F. Bensted-Smith and E. C. Bradford, Pembroke; F. L. Cassidi, Corpus Christi; G. M. Cowper and K. B. Dickson, Trinity; C. L. Gimblett and C. H. M. Gimlette, Caius; H. Hartridge, King's; J. B. Hunter, St. John's; *O. C. Kerby, Trinity; F. G. Lescher, Caius; *Q. Madge, Emmanuel; R. W. Meller, Trinity; R. K. Merson, Emmanuel; A. B. Pavey-Smith, Clare; *J. W. Pigeon, Christ's; W. B. Purchase, Sidney Sussex; *E. C. Rayner, Caius; G. D. Read, St. John's; J. R. Rees, King's; J. E. Sharp, Caius; A. G. Shera, Emmanuel; *H. A. Smith, H. Selwyn; *R. Stansfeld, St. John's; C. R. A. Thacker, Downing; *J. R. A. Todhunter, Caius; and H. G. Wiltshire, Emmanuel.

* In Surgery only, having previously been approved in Midwifery and Diseases of Women.

Part II.—S. G. Askey, St. John's; D. C. G. Ballingall, Emmanuel; H. A. Bell, Jesus; W. G. Bigger and P. R. Boswell, Queens'; E. C. Bradford, Pembroke; H. P. Dawson, Trinity; E. L. Dobson, King's; A. T. Edwards, St. John's; W. B. Gordon, Clare; H. Hartridge, King's; F. G. Lescher, Caius; R. W. Meller, Trinity; A B. Pavey-Smith, Clare; D. V. Pickering, Emmanuel; S. G. Platts, Caius; L. C. Rivett, L. E. S. Sharp, and A. C. S. Smith, Trinity; P. Stocks, King's; and C. R. A. Thacker, Downing.

UNIVERSITY OF LIVERPOOL.—The degree of M.D. has been conferred upon the following:—

J. Bamforth, H. M. Berry, W. E. Cooke, I. C. Edwards, H. W. Jones, R. Kennon, H. Nield, H. Pierce, and G. F. R. Smith.

At examinations held recently the following candidates were successful:—

DEGREES OF M.B. AND CH.B.

Final Examination.—Part I.: H. Garas, A. G. M'Coll, H. C. Roberts and J. Rumjahn. Part II.: Ruth I. Bateman, R. L. Blenkhorn, C. P. Brentnall, G. S. Graham, J. P. Johnson, R. J. Minnitt, L. Oldershaw, and C. G. Skinner. Part III.: G. D. Harding, R. Martlew, A. G. N. Misbah, R. Rimmer, R. E. Roberts, L. B Stott, A. W. Weston, and J. St. G. Wilson.

Honours.—First Class: Ethel Chadwick. Second Class: G. H. Darlington and G. H. Pearson.

Second Examination.—Part A: A. L. Davies, D. C. Grundy, and Edna E. Mawson. Part B: N. J. Allan, M. Azer, A. G. Brett, A. J. B. Griffin, Amy Hodgson, R. Nixon, S. Pool, A. M'K. Reid, and E. S. Stubbs.

VICTORIA UNIVERSITY OF MANCHESTER.—At examinations held recently the following candidates were successful:—

FINAL M.B. AND CH.B. EXAMINATION.

*Lily Allan, Basil Browning, Frank Chadwick, J. W. Craw, H. C. Duffy, C. W. Fort, *†‡D. T. Harris, J. R. Jagger, *O. M. de Jong, E. A. Linell, Kate K. May, A. S. Paterson, ‡J. R. B. Russell, J. R. Slack, and E. H. Walker.

Obstetrics.—G. B. Horrocks, Kamil Maximus, and H. A. Sandiford.

Medicine.—W. S. Booth, G. B. Horrocks, and Kamil Maximus.

Surgery.—G. B. Horrocks.

Forensic Medicine and Toxicology.—J. C. Bramwell, A. T. Gibb (distinction), Edgar Granger, William Halliwell, J. G. McKinlay (distinction), H. M. von Mengershausen, J. F. C. O'Meara, F. G. Prestwich, John Rigby, C. G. Todd, Frank Vause, Louis Walton, and Richard Willan.

* Second class honours. † Distinction in Obstetrics.
‡ Distinction in Surgery.

THIRD M.B. AND CH.B. EXAMINATION.

Pharmacology and Therapeutics and Hygiene.—G. S. Bate, H. W. Bennett, Hitchon Chadwick, William Christopher, Richard Colley, Eva L. Glasier, Alice M. A. Holt, R. L. Newell, F. C. Ormerod, J. A. Panton, Nesta H. Perry, Dorothy Potts, C. R. Sandiford, and Walter Stansfield.

Pharmacology and Therapeutics.—J. H. Albinson.

Hygiene.—J. D. Byrd.

FIRST M.B. AND CH.B. EXAMINATION.

Part III. (Organic Chemistry and Biochemistry).—Nooman Abdoh, T. H. Almond, May Ashburner, Sybil Bailey, Mary G. Cardwell, H. J. Chronnell, Thomas Colley, S. E. Critchley, Elizabeth C. Davies, Herbert Dickie, E. B. A. Edleston, Percival Fildes, G. H. W. Gough, F. L. Heap, F. S. Horrocks, Fahim Isaac, A. W. Kirkham, J. H. Lees, John Mills, Terence O'Brien, Kathleen O'Donnell, Ellis Pigott, H. J. Porter, A. R. Redfern, Lazarus Samuels, A. G. Saunders, L. J. Schwartz, V. T. Smith, J. T. Walker, Marie Wardman, and Ethel D. Willis.

FINAL B.D.S. EXAMINATION.

H. H. Stones (First-class honours), and M. C. Paterson (Second-class honours).

DIPLOMA IN DENTISTRY. (FINAL EXAMINATION.)

E. D. Batty, Benjamin Brown, E. W. Fish, F. F. H. E. Kolligs, Frank Lyth, G. N Scotts, R. S. Smith, and Aquila Whitehead.

Pathology.—T. B. Place.

Systematic Surgery.—John Smith and J. V. Wilkinson.

Dental Prosthetics and Operative Dentistry.—T. B. Place and John Smith.

Dental Surgery.—J. V. Wilkinson.

UNIVERSITY OF DURHAM: FACULTY OF MEDICINE.—At examinations held recently the following candidates were successful:—

FIRST EXAMINATION FOR THE DEGREE OF BACHELOR OF MEDICINE.

Elementary Anatomy and Biology, Chemistry and Physics.—First Class Honours: William Edward Mandall Wardill, College of Medicine, Newcastle-upon-Tyne. Pass List: Montague William Augustus Sandoe, Guy's Hospital; and Habib Toma, College of Medicine, Newcastle-upon-Tyne.

Chemistry and Physics.—John Neville Alexander, Alan Angus, Douglas George Patrick Bell, Edgar Frederick Herbert Bell, John Arthur Gardner Brewis, and Ernest Dewar Charles, College of Medicine, Newcastle-upon-Tyne; Harold Charles Clifford-Smith, Charing Cross Hospital; Wallace Alexander Freedman, Giles Arthur Michael Hall, Alexander Thomas Harrison, and Mary Kathleen Henegan, College of Medicine, Newcastle-upon-Tyne; Reginald Arthur Hickley, St. Mary's Hospital; and George Eric Hyden, William Arthur Jaques, Robert Turnbull Easton Naismith, Charles Burton Phillips, Gainsford Reed, Frank Wesley Sopwith, and Louis William Studdy, College of Medicine, Newcastle-upon-Tyne.

Elementary Anatomy and Biology.—Ewart Gordon Anderson, London Hospital, and College of Medicine, Newcastle-upon-Tyne; and Ibrahim Girgis, Samuel Elijah Goulstine, Hamed Kamel, Robert Graham Melrose, George Galloway Robertson, Thomas Wilfrid Robertson, George Howard Shanley, and Arthur Wilfred Wilkinson, College of Medicine, Newcastle-upon-Tyne.

UNIVERSITY OF DUBLIN.—The following degrees have been conferred:—

M.D.—H. R. M. Ferguson, E. S. Johnson, C. O'Brien, R. O. Smyth, R. E. Tottenham, and H. L. W. Woodroffe.

M.B., B.Ch., B.A.O.—T. W. Allen, J. N. Armstrong, C. D. M. Buckley, J. G. Butt, J. C. A. Dowse, J. S. English, H. R. Ford, N. H. H. Haskins, Rev. E. E. Lavy, T. A. Lawder, H. C. D. Miller, J. D. Oliver, T. D. Power, F. A. Roddy, W. A. Ryan, W. O. Tobias, W. R. L. Waters, and G. H. Wood.

The following licences have been granted:—

L.M., L.Ch., L.A.O.—E. Evans and J. H. Fletcher.

BRISTOL GENERAL HOSPITAL.—The new wing which has been recently added to this hospital will be formally opened on July 27th by Mr. G. A. Wills, the president of the institution.

Alderman Edward Louis McSheehy, M.D., who was Mayor of Wimbledon for two years and is a justice of the peace for the county of Surrey, was presented on July 4th with the freedom of the borough of Wimbledon.

DONATIONS AND BEQUESTS.—The late Miss Ida Freund, of Cambridge, late staff lecturer in chemistry at Newnham College, has left among other large bequests £2000 to Addenbrooke's Hospital, Cambridge.—By the will of the late Mrs. Alice Eliza Davies, of Bury, widow of Dr. Clifford Davies, the testatrix left £500 each to the Robinson Kay branch of the Hospital for Incurables (Manchester), the Bury Infirmary Hospital, and the National Society for the Prevention of Cruelty to Children, Bury.—Mr. William Hough Hey, of Sherburn in Elmet, Yorks, has bequeathed by will £1000 to the Leeds Infirmary and £500 to the National Society for the Prevention of Cruelty to Animals.

ROYAL COLLEGE OF SURGEONS OF ENGLAND: ELECTION OF MEMBERS OF COUNCIL.—A meeting of Fellows was held on July 2nd to elect five members of Council. 1042 Fellows voted, 1028 of these by post and only six personally. Three of the votes were invalid; two because the signatures of the voters had not been witnessed, and one because the voter had voted for six of the candidates n place of five. Eight voting papers arrived after 3 o'clock, so that they could not be included in the voting. The result of the voting was as follows:—

	Votes.	Plumpers.
William Thorburn	534	53
Charles Alfred Ballance	434	5
William McAdam Eccles	351	23
James Stanley Newton Boyd	337	14
Charles Ryall	304	13
John Bowring Lawford	256	5
Thomas Horrocks Openshaw	245	30
Walter George Spencer	238	2
Raymond Johnson	218	7
Frédéric Francois Burghard	204	4
Francis James Steward	177	25
Herbert Stringfellow Pendlebury	106	9
Thomas Herbert Kellock	99	0
Percival Macleod Yearsley	90	2

Mr. Ballance was declared re-elected, and Mr. Thorburn, Mr. Eccles, Mr. Boyd, and Mr. Ryall were declared elected members of the Council.

UNIVERSITY OF OXFORD: THEODORE WILLIAMS SCHOLARSHIPS.—The Theodore Williams Scholarship in Anatomy has been awarded to Kenneth F. D. Waters, scholar of Keble, and the Theodore Williams Scholarship in Pathology to Henry St. H. Vertue, B.A., University College; *proxime accessit*, Christopher J. A. Buckell, B.A., Corpus Christi College.

MR. THOMAS CHETWOOD, M.B. Lond., D.P.H. Oxford, has been appointed school medical officer and deputy medical officer of health for the city of Sheffield in the place of Dr. Ralph P. Williams, who recently resigned these posts to take up his duties as a senior assistant medical officer at the Board of Education. Mr. Chetwood was previously senior assistant school medical officer in Sheffield.

UNIVERSITY OF LONDON.—The Senate at its last meeting reappointed Sir Wilmot Herringham, M.D., Vice-Chancellor of the University for the year 1914–15. The following medical members of the Senate were appointed to the three statutory committees for the ensuing year. Academic Council: the Vice-Chancellor, Mr. H. L. Eason, Professor A. D. Waller, and Mr. H. J. Waring; Council for External Students: the Vice-Chancellor, Sir Thomas Barlow, Sir William Collins, Sir Thomas Croshy, Dr. E. G. Graham Little, Dr. Frederick Taylor, Mr. Waring, and Dr. S. Russell Wells; Board to Promote the Extension of University Teaching: the Vice-Chancellor, Sir Thomas Croshy, Dr. Graham Little, and Dr. Russell Wells. Sir Alfred Pearce Gould was elected chairman of the Graham legacy committee, and Dr. Frederick Taylor chairman of the committee of medical members of the Senate. Dr. R. H. Cole was re-appointed governor of Slough Secondary School.

DENTAL TEACHING AT LEEDS UNIVERSITY.—The dental department of Leeds University was established in 1905 to provide training for students in the modern applications of dental surgery, and to afford facilities for expert dental treatment to those financially unable to obtain it. The public of Leeds are indebted to the governing body of the dispensary for recognising the importance of this work and giving accommodation and other facilities for it in their buildings. Generous subscriptions of dentists and others made it possible to equip this dental department with up-to-date appliances. During the year 1912–13 3237 new patients were treated in the department, and over 14,000 operations were performed or completed; the number of students in attendance was 27. But the present accommodation will not long be adequate, and Leeds will probably soon have to establish a school of dentistry in its own buildings. The staff consists of 12 honorary dental surgeons, with a demonstrator, a house surgeon, a curator, a nurse, and a clerk. The honorary dental surgeons form a clinical dental committee, the chairman of the dispensary board being *ex officio* a member. The department has been self-supporting throughout, and has never become a charge on the dispensary. A scheme submitted by the dental surgeons and approved by the dispensary board has now been adopted by the council of the University, and will come into operation at the beginning of next session, under which the instruction in the dental department will pass under the control of the University and will have the status of University teaching. The honorary dental surgeons will become members of the staff of the University under the title of "clinical dental lecturers," and all future appointments to these lectureships will be made by the University council, and the dental committee will take its place among the academic bodies of the University.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The Death of Mr. Chamberlain.

UNIVERSAL regret at the death of Mr. JOSEPH CHAMBERLAIN is felt at Westminster. For some years illness has withdrawn him from participation in the work of the House of Commons, and time has softened the feelings of asperity which are apt to be generated in keen political controversy. One aspect of his work at the Colonial Office may be specially mentioned here. That was the encouragement which he gave to the study of tropical diseases. He saw clearly that one of the great obstacles to the development of the possessions of the Crown in the tropics was the prevalence of diseases in them which played havoc with the health of the white man.

The Milk and Dairies Bill.

The main question which was discussed in regard to the Milk and Dairies Bill by the Standing Committee of the House of Commons on Thursday, July 2nd, was the inspection of persons employed in or about dairies. Clause 2 authorises the Local Government Board to make orders "for the inspection of dairies and persons employed in or about dairies." An amendment was moved to omit the workers from inspection, but it was opposed by Mr. HERBERT SAMUEL, President of the Local Government Board. He said that there was no intention to establish routine inspection into the health of the persons employed. What the Bill had in contemplation was the occurrence of an epidemic of diphtheria or enteric fever, and the necessity of taking steps to ascertain the cause. For example, certain people who had had enteric fever afterwards became carriers of the germs of the disease, and this danger had to be guarded against. The inspector on his rounds could see whether those who were coming into contact with the milk were cleanly in their persons. Several honourable Members strongly insisted that it was highly desirable to insist upon cleanliness amongst rural workers. The amendment was ultimately withdrawn.

On Monday, July 6th, the Committee had under consideration Mr. ASTOR'S amendment to insert a provision to authorise the use in connexion with the sale of milk of the term "certified milk" and to prohibit the application of such a description to milk which did not fulfil the prescribed conditions. Mr. HERBERT SAMUEL accepted the amendment. He said that much might be done to improve the quality of milk if a higher rate of profit could be obtained by traders who sold milk produced under a system of official regulation and inspection. Mr. ASTOR'S proposal was agreed to.

Milk and Dairies (Scotland) Bill.

The Standing Committee on Scottish Bills of the House of Commons has concluded its examination of the details of the Milk and Dairies (Scotland) Bill. The measure has been reported to the House. Some discussion on the powers of inspecting milk supplies arose during the last sitting of the Committee. Edinburgh and Glasgow under their private Acts possess wider powers of inspecting sources of supplies outside their areas than they would possess if they were under the provisions of the Bill. It was decided by the Committee that those two cities should retain their existing powers of inspection uncurtailed.

National Health Insurance Report.

The report for 1913–14 on the Administration of National Health Insurance has been published as a Parliamentary Blue-book.

Voluntary Insurance Bill.

Sir RICHARD COOPER has introduced in the House of Commons a Bill "to repeal the National Insurance Acts, 1911 and 1913, and to establish a system of voluntary insurance against loss of wages through sickness and unemployment, and for other purposes relating thereto." It was read a first time.

Housing Bill.

Mr. RUNCIMAN, President of the Board of Agriculture, on Wednesday, July 8th, introduced in the House of Commons a Bill for the purpose of giving to the Board of Agriculture and Fisheries "powers with respect to the housing in agricultural districts of persons belonging to the working classes, and to make provision with respect to the housing of persons employed by or on behalf of Government departments where sufficient dwelling accommodation is not available." The right honourable gentleman mentioned that it was proposed to provide £3,000,000 for rural housing and building cottages. The sum to be provided for housing Government employees amounted to £2,000,000. The Bill was read a first time.

HOUSE OF COMMONS.

WEDNESDAY, JULY 1ST.

Infant Mortality.

Mr. PIKE PEASE asked the President of the Local Government Board to state the rates of infant mortality and of stillbirths for the United Kingdom in 1913.—Mr. HERBERT SAMUEL replied: The rate of infant mortality in the United Kingdom in 1913 was 108 deaths under one year of age per 1000 births registered. The proportion of stillbirths cannot be stated, as these are not registrable, and information in regard to them is obtainable only for areas which have adopted the Notification of Births Act, 1907. These areas do not in all cases tabulate the information which they obtain, but it may be stated that during 1912 the stillbirths notified under this Act in the County of London numbered 2593. This number amounts to 2·4 per cent. of the total births notified, and to 0·57 per 1000 of the estimated population at the middle of the year.

THURSDAY, JULY 2ND.

Insured Persons in Ireland.

Mr. WEDGWOOD BENN informed Mr. GRETTON that the latest available figures showed that there were 729,598 insured persons in Ireland, of whom 717,798 were members of Approved Societies.

Deposit Contributors.

Mr. RUPERT GWYNNE asked the honourable Member for St. George's-in-the-East whether he would consider the advisability of making known at an early date the proposals of the Government regarding amendments to the National Insurance Act and the future position of deposit contributors in particular, so that honourable Members might have an opportunity of discussing these proposals with members of Approved Societies and others interested before the matter was discussed in the House.—Mr. WEDGWOOD BENN replied: The Insurance Commissioners are conferring to-day with the Advisory Committee, on which all types of Approved Societies are fully represented, and any proposals of the character referred to will be introduced without avoidable delay.

Grants to Pathological Laboratories.

Mr. CHANCELLOR asked the Chancellor of the Exchequer what amount of the sum of £250,000 to be applied this year to tuberculosis, nursing, and pathological laboratories was to be expended on pathological laboratories.—Mr. LLOYD GEORGE answered: The amount is £50,000.

Mr. CHANCELLOR asked the right honourable gentleman whether the work to be carried on in the pathological laboratories which were to be provided for in this year's Finance Bill would include experiments on living animals.—Mr. LLOYD GEORGE said in reply: The proposed grant is in respect of laboratories to be used primarily for purposes of diagnosis and not of research.

The Grant for Tuberculosis Treatment.

Replying to Mr. ASTOR, Mr. LLOYD GEORGE said: A statement will be made shortly giving particulars of the administration of the proposed grant for tuberculosis referred to in my speech on introducing the Budget.

Motor Ambulances and Petrol Duty.

Mr. CROOKS asked the Chancellor of the Exchequer what steps he was taking to exempt this year all authorities under the Local Government Board who had a service of motor ambulances to convey patients to hospitals and infirmaries from the duty upon petrol spirit.—Mr. LLOYD GEORGE wrote in reply: I am proposing to deal with this matter in connexion with the Revenue Bill, and if the honourable Member will put down a clause in due course I shall be glad to consider it.

MONDAY, JULY 6TH.

The Disabilities of Medical Officers of Health.

Sir PHILIP MAGNUS asked the President of the Local Government Board what steps, if any, he had been able to take to remove the pressing disabilities of medical officers of health as regarded insecurity of tenure, absence of any scheme of superannuation, and inability to obtain payment of travelling expenses in discharge of their duties, which were brought under his notice by the deputation which he and the Chancellor of the Exchequer and the President of the Board of Education recently received; and whether the position of sanitary inspectors, as regarded some of their disabilities, was likely to be improved.—Mr. HERBERT LEWIS (on behalf of Mr. HERBERT SAMUEL) replied: I can say no more at the present moment than that the matter is engaging the close attention of my right honourable friend.

The Grants for Sick Nursing.

Dr. CHAPPLE asked the Chancellor of the Exchequer whether he had received a communication from the Scottish National Conference of Friendly Societies urging that the administration of the grants for sick nursing, tuberculosis, and pathological laboratories be not separated from the present administrators of medical benefit; and, if so, would he say what his attitude would be towards their representations.—Mr. LLOYD GEORGE said in reply: The answer to the first part of the question is in the affirmative. I received a deputation on this subject on Friday last. The matter is engaging the careful attention of the Government.

Cripples' Hospitals.

Lord CHARLES BERESFORD asked the Chancellor of the Exchequer whether he was aware that at the Cripples' Hospital and College at Alton 95 per cent. of the cripples who went there were cured, who otherwise would succumb or be cripples for life; and, looking to the amount of good that this hospital did, whether he could see his way to give a State grant to the hospital and also to create hospitals of a similar character throughout the country.—Mr. LLOYD GEORGE answered: I am well aware of the brilliant work carried on at the hospital referred to by the noble lord. The general question of hospital accommodation is now receiving the attention of His Majesty's Government, and in the meantime I fear I can make no statement.

TUESDAY, JULY 7TH.

Sanitary Authorities in England and Wales.

Mr. ASTOR asked the President of the Local Government Board how many local sanitary authorities there were in England and Wales; how many medical inspectors there were in the service of the Local Government Board whose duty it was to inspect personally and keep in personal touch with the work of these authorities; and what were the other duties of these officers.—Mr. HERBERT SAMUEL wrote in reply: The number of sanitary authorities in England and Wales is 1870. The medical inspectors of the Local Government Board are not specially deputed to make routine inspection of the work of each of these authorities, but in the performance of their various duties, such as the holding of local inquiries, investigations into sanitary circumstances and outbreaks of disease, the inspection of vaccination, and the visiting of localities and conferences with local representatives for various other purposes, they are brought into constant touch with the sanitary authorities and their administration.

Panel Patients in Wales.

Lord NINIAN CRICHTON-STUART asked the honourable Member for St. George's-in-the-East whether any panel patients had been transferred from the Rhymney Valley Medical Association to the Bargoed and District Sick and Medical Aid Society after the closing of the panel list for the year on Dec. 14th, 1913; whether the latter society was an approved society and officially recognised at that date; and whether, under the circumstances, these transfers had been sanctioned.—Mr. WEDGWOOD BENN replied: My right honourable friend is informed by the Welsh Insurance Commissioners that the answer to the first and second parts of the question is in the negative. The third part does not, therefore, arise.

Dental Certificates.

Mr. RAFFAN asked the Parliamentary Secretary to the Board of Education whether a Departmental Committee had recently been appointed to consider the question of dental certificates; if so, whether the Committee had now concluded its deliberations and submitted its report, and when the publication of the report might be expected.—Mr. TREVELYAN replied: The answer to the first part of the question is in the affirmative. The report of the Committee will be issued very shortly.

BOOKS, ETC., RECEIVED.

AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION, LORD BALTIMORE PRESS, Baltimore.
Proceedings of the American Medico-Psychological Association at the Sixty-ninth Annual Meeting, Canada, 1913.

BELL, GEORGE, AND SONS, London.
The Feeding of School Children. By M. E. Bulkley, London School of Economics. Price 3*s*. 6*d*. net.

DULAU AND CO., 37, Soho-square, London.
Drapers' Company Research Memoirs. Studies in National Deterioration, IX. By M. H. Williams, M.B., B.S., D.P.H., Julia Bell, M.A., and Karl Pearson, F.R.S. Price 6*s*.

GRIFFIN, CHARLES, AND CO., London.
A Practical Handbook of the Tropical Diseases of Asia and Africa. By H. C. Lambart, M.A., M.D. Six Coloured Plates and 82 other Illustrations. Price 8*s*. 6*d*. net.

Harrap, George C., Portsmouth-street, Kingsway, London.

Biology of Sex for Parents and Teachers. By T. W. Galloway, Ph.D., Professor of Biology, James Millikin University, Decatur, Illinois. Price 2*s*. net.

Plant and Animal Children: How They Grow. By Ellen Torelle, M.A. Price 2*s*. 6*d*. net.

Hygiene for Girls: Individual and Community. By Florence Harvey Richards, M.D., Medical Director, William Penn High School. Price 2*s*. 6*d*. net.

Lehmann, J. F., München.

Arzt und Schule. Ziele und Erfolge der Schulkommission des Aerztlichen Vereins München auf dem Gebiete des Mittelschulwesens. 1904–1914. Price M.2.

Lewis, H. K., London.

The Ileo-cæcal Valve. By A. H. Rutherford, M.D. Edin. Price 6*s*. net.

Longmans, Green, and Co., London.

An Introduction to the Study of Organic Chemistry. By H. T. Clarke, D.Sc. Lond., F.I.C. Price 6*s*. 6*d*.

Maloine, A., Paris.

La Guerre en Bulgarie et en Turquie Onze Mois de Campagne. Par le Prof. Dr. Octave Laurent. Price Fr.6.

Murray, John, London.

Historical Account of Charing Cross Hospital and Medical School, with which is included Some Account of the Origin of the Other Hospitals and Schools in London. With 40 Illustrations and Plates of Old London. By William Hunter, M.D., F.R.S. Edin., F.R.C.P. Price 21*s*.

Urban und Schwarzenberg, Berlin und Vienna.

Die Experimentelle Pharmakologie als Grundlage der Arzeneibehandlung. Ein Lehrbuch für Studierende und Aerzte. Von Dr. Hans H. Meyer und Dr. R. Gottlieb. Dritte, neubearbeitete Auflage. Price M.15.

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to The Lancet *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

Barrington-Ward, L. E., Ch.M., F.R.C.S. Eng., F.R.C.S. Edin., has been appointed Surgeon to Out-patients at the Great Northern Central Hospital.

Beddard, A. P., M.D. Oxon., F.R.C.P. Lond., has been appointed Physician to Guy's Hospital.

Brereton-Barry, J., L.A.H., has been appointed House Surgeon at the Victoria Central Hospital, Liscard, and Resident Medical Officer to the Wallasey Dispensary.

Buckell, M. A. C., M.B., B.S. Lond., has been appointed Casualty House Surgeon at St. Mary's Hospital.

Cope, V. Z., M.D., M.S. Lond., has been appointed Surgeon in Charge of the Orthopædic Department at St. Mary's Hospital.

Davies, E. T., M.D., C.M. Edin., F.R.C.S. Eng., has been appointed Officer of Health and Medical Superintendent of the Infectious Diseases Hospital by the Tredegar Urban District Council.

Faull, W., L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Osmotherly District of the county of York.

Howell, James B., D.P.H., M.R.C.S., L.R.C.P. Lond., has been appointed Medical Officer of Health for Hammersmith.

Jones, William E., M.R.C.S., L.R.C.P. Lond., has been appointed Honorary Anæsthetist to the Blackburn and East Lancashire Royal Infirmary.

Knowles, John, L.D.S. Eng., has been appointed whole-time Dentist to the Gloucestershire Education Committee.

Lees, K. A., M.B., B.C. Camb., F.R.C.S. Eng., has been appointed Demonstrator of Anatomy to St. Mary's Hospital Medical School.

Macdonald, J. S., L.R.C.P. & S. Edin., has been appointed to the Chair of Physiology in the University of Liverpool.

MacEnricht, D. J. Morrison, M.B., B.Ch., B.A.O. N.U.I., has been appointed House Surgeon at Swansea General and Eye Hospital.

Mackay, Duncan Matheson, M.D., C.M. Edin., M.R.C.S., L.R.C.P. Lond., has been appointed Honorary Ophthalmic Surgeon to the Hull Royal Infirmary.

Pinchin, A. J. Scott, M.D. Lond., M.R.C.S., has been appointed Physician to Out-patients at the Hampstead General and North-West London Hospital.

Poulton, E. P., M.D. Oxon., M.R.C.P. Lond., has been appointed Assistant Physician to Guy's Hospital.

Todd, J. N., M.B., Ch.B. Glasg., has been appointed Anæsthetist to the Harrogate Infirmary.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (*see Index*).

Argyll and Bute District Asylum, Lochgilphead.—Medical Superintendent. Salary £500 per annum, with house and allowances.

Barrow-in-Furness, North Lonsdale Hospital.—House Surgeon. Salary £150 per annum, with residence, board, and laundry.

Bath, Winsley Sanatorium for Consumption.—Assistant Resident Medical Officer, unmarried. Salary £150 per annum, with board, residence, and laundry.

Bedford County Hospital.—Assistant House Surgeon. Salary £100 per annum, with board, lodging, and laundry.

Birkenhead Borough Hospital.—Senior House Surgeon. Salary £120 per annum, with board and laundry.

Birkenhead Union Infirmary.—Senior Resident Assistant Medical Officer. Salary £175 per annum, with board, apartments, &c.

Birmingham, City Fever Hospital, Little Bromwich.—Assistant Medical Officer. Salary £200 per annum, with board, residence, and laundry.

Birmingham General Dispensary.—Resident Medical Officer, unmarried. Salary £240 per annum, with apartments, fire, light, and attendance.

Birmingham, Jaffray Branch of the General Hospital, Gravelly Hill.—Resident Medical and Surgical Officer. Salary £150 per annum, with board, residence, and washing.

Birmingham and Midland Eye Hospital, Church-street.—Junior House Surgeon. Salary £100 per annum, with residence, board, &c.

Birmingham, Queen's Hospital.—One House Physician and Two House Surgeons for six months. Salaries at rate of £50 per annum, with board, lodging, and washing.

Birmingham Union.—Fourth Assistant Medical Officer at Dudley-road Infirmary. Salary £140 per annum. Also Assistant Medical Officer at Selly Oak Infirmary and House. Salary £160 per annum. Each with apartments, rations, laundry, and attendance.

Blackburn and East Lancashire Royal Infirmary.—Junior House Surgeon. Salary £100 per annum, with board, residence, &c.

Bolingbroke Hospital, Wandsworth Common, S.W.—House Surgeon for six months. Salary £75 per annum, with board, residence, and laundry.

Bootle Borough Hospital.—Senior and Junior House Surgeons. Salaries £120 and £100 respectively, with residence, board, and laundry.

Bradford City Hospital for Consumptives.—Resident Medical Officer. Salary £200 per annum, with board and residence.

Bradford Royal Infirmary.—House Surgeon, unmarried. Salary £100 per annum, with board, residence, and washing.

Bristol Royal Infirmary.—Honorary Ophthalmic Surgeon.

Bury St. Edmunds, West Suffolk General Hospital.—Resident Medical Officer, unmarried. Salary £120 per annum, with board, lodging, and laundry.

Buxton, Derbyshire, Devonshire Hospital.—Assistant House Physician for six months. Salary £100 per annum, with apartments, board, and laundry.

Camberwell Infirmary and Gordon-road Institution.—Second Assistant Medical Officer. Salary £170 per annum. Also Third Assistant Officer for Infirmary. Salary £150 per annum. Each with apartments, board, and washing.

Cardiff, King Edward VII.'s Hospital.—Two House Surgeons for six months. Salary at rate of £60 per annum, with board, residence, and laundry.

Cardiff and County Public Health Laboratory.—Bacteriologist. Salary £300 per annum.

Chelsea Infirmary and Workhouse, S.W.—Medical Superintendent and Medical Officer. Salary £500 per annum, with unfurnished house, fuel, and light. Also Second Assistant Medical Officer for Infirmary. Salary £160 per annum, with board, washing, apartments, &c.

City of London Hospital for Diseases of the Chest, Victoria Park, E.—House Physician for six months. Salary at rate of £75 per annum, with board, residence, and washing.

Colchester, Essex County Hospital.—House Surgeon and House Physician. Salary £100 per annum, with board, residence, and washing in each case.

Croydon, County Borough of.—Assistant Medical Officer of Health and Assistant School Medical Officer. Salary £250 per annum.

Derby, Derbyshire Royal Infirmary.—House Physician and Assistant House Surgeon. Salaries £125 and £80 per annum respectively, with residence, board, and laundry.

Devonport, Royal Albert Hospital.—House Surgeon, unmarried. Salary £150 per annum, with board and laundry.

Dewsbury Union Infirmary.—Female Resident Assistant Medical Officer. Salary at rate of £100 per annum, with rations, apartments washing, &c.

Essex Education Committee.—Medical Inspector of School Children. Salary £300 per annum.

Falkland Islands.—Assistant Colonial Surgeon, unmarried. Salary £400 per annum.

Fareham, Hants County Asylum.—Third Assistant Medical Officer, unmarried. Salary £250 per annum, with apartments, board, washing, and attendance.

Glamorgan County Council.—Medical Officer for the Inspection of School Children. Salary £250 per annum.

Gloucestershire Education Committee.—School Medical Inspector. Salary £250 per annum.

Great Northern Central Hospital, Holloway-road, N.—House Surgeon, for six months. Salary £60 per annum, with board, lodging, and laundry.

Greenwich Union Infirmary and Workhouse.—First Assistant Medical Officer, unmarried. Salary £175 per annum, with apartments, rations, and washing.

Grimsby and District Hospital.—Senior House Surgeon. Also Junior House Surgeon. Salaries £100 and £80 per annum respectively, with board, lodging, attendance, and washing.

Halifax Royal Infirmary.—Second House Surgeon and Third House Surgeon, unmarried. Salary £120 and £100 per annum respectively, with residence, board, and washing.

Herefordshire County Council.—Assistant to Medical Officer of Health. Salary £300 per annum.

Hospital for Consumption and Diseases of the Chest, Brompton, S.W.—House Physician for six months. Salary 30 guineas.

Huddersfield Royal Infirmary.—Assistant House Surgeon. Salary £80 per annum, with board, rooms, and washing.

Hull Royal Infirmary.—Casualty House Surgeon. Salary at rate of £80 per annum, with board and lodging. Also Assistant House Surgeon. Salary at rate of £100 per annum, with board and lodging.

Hull, Victoria Children's Hospital, Park-street.—Female Assistant House Surgeon. Salary £45 per annum, with board and laundry.

Leeds General Infirmary.—Resident Obstetric Officer for six months. Salary £50 per annum, with board, residence, and laundry. Also Two House Physicians for six months, without salary, but with board, residence, and laundry.

Leeds Public Dispensary.—Junior Resident Medical Officer. Salary £130 per annum, with board, residence, and laundry.

Leicester Royal Infirmary.—Assistant House Physician for six months. Salary at rate of £100 per annum, with board, apartments, and washing.

Liverpool City Infectious Diseases Hospital.—Assistant Resident Medical Officer, unmarried. Salary £150 per annum, with board, washing, and lodging.

Liverpool, Highfield Infirmary.—Assistant Medical Officer. Salary £180 per annum, with apartments, &c.

Liverpool School of Tropical Medicine.—Research Assistant at Runcorn Research Laboratory. Salary £150 per annum.

Liverpool Stanley Hospital.—Two House Physicians and a House Surgeon. Salary £75 per annum each, with board, residence, and laundry.

London Medical Mission, Endell-street, W.C.—Resident Medical Officer, unmarried. Salary £120 per annum, with board and residence.

Lowestoft and North Suffolk Hospital.—House Surgeon, unmarried. Salary at rate of £150 per annum, with board, residence, and laundry.

Macclesfield, Cheshire County Asylum, Parkside.—Locum Tenens for about two months. Salary 5 guineas per week, with apartments, board, and washing.

Maidstone, Kent County Asylum.—Fourth Assistant Medical Officer, unmarried. Salary £250 per annum, with quarters, board, attendance, washing, &c.

Manchester, Hulme Dispensary, Dale-street, Stretford-road.—House Surgeon. Salary £180 per annum, with apartments, attendance, coal, and gas.

Manchester Northern Hospital for Women and Children, Park-place, Cheetham Hill-road.—House Surgeon. Salary £120 per annum, with apartments and board.

Manchester, St. Mary's Hospitals for Women and Children.—House Surgeon for Children's Department. Also House Surgeon for Obstetrical and Gynæcological Departments. Each for six months. Salary £25 per annum each, with board and residence.

Newark-upon-Trent Hospital.—Female Resident Medical Officer, unmarried. Salary £120 per annum, with board, lodging, and laundry.

Northampton General Hospital.—Two House Surgeons, unmarried. Salary £120 per annum each, with apartments, board, washing, attendance, &c.

Norwich, Jenny Lind Hospital for Sick Children.—Resident Medical Officer for six months. Salary £80 per annum, with board, apartments, and laundry.

Nottingham General Dispensary.—Assistant Resident Surgeon, unmarried. Salary £180 per annum, with apartments (not board), attendance, light, and fuel.

Nottingham General Hospital.—Assistant House Physician for six months. Salary at rate of £100 per annum, with board, residence, and laundry.

Ogmore and Garw Urban District Council.—Medical Officer of Health Salary £325 per annum.

Peterborough Infirmary and Dispensary.—House Surgeon, unmarried. Salary at rate of £120 per annum, with residence, board, and laundry.

Plymouth, South Devon and East Cornwall Hospital.—House Physician for six months. Salary £90 per annum, with board, residence, and washing.

Poplar Hospital for Accidents, Poplar, E.—Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board and residence.

Portsmouth Royal Hospital.—House Surgeon for six months. Salary £90 per annum, with board, &c.

Portsmouth Workhouse Infirmary, Workhouse, and Children's Home.—Second Assistant Resident Medical Officer, unmarried. Salary £150 per annum, with apartments, rations, &c.

Preston County Borough.—School Medical Officer. Salary £350 per annum.

Prince of Wales's General Hospital, Tottenham, N.—Junior House Physician and Junior House Surgeon for six months. Salary £75 per annum each, with residence, board, and laundry.

Queen's Hospital for Children, Hackney-road, Bethnal Green, E.—House Surgeon for six months. Salary £80 per annum, with board, residence, and washing.

Ramsgate General Hospital and Dispensary.—Resident House Surgeon, unmarried. Salary £100 per annum, with board, residence, and laundry.

Rochdale Infirmary and Dispensary.—Senior House Surgeon, unmarried. Salary £120 per annum, with board, residence, and laundry.

Royal Army Medical Corps.—Twelve Commissions.

Royal Ear Hospital, Soho.—House Surgeon. Salary £40 per annum.

Royal Hospital for Diseases of the Chest, City-road, E.C.—Resident Medical Officer. Also House Physician. Both for six months. Salaries at rate of £120 and £60 per annum respectively, with board, lodging, and washing.

Royal Naval Medical Service.—Twenty-five Appointments.

Royal Waterloo Hospital for Children and Women, S.E.—Surgeon to Out-patients. Also Junior Resident Medical Officer. Salary at rate of £50 per annum, with board and washing.

Royal Westminster Ophthalmic Hospital, King William-street, West Strand, W.C.—Assistant Surgeon.

St. Mary's Hospital, Paddington, W.—Resident Assistant Anæsthetist for six months. Salary at rate of £100 per annum, with board and residence.

St. Mary's Hospital for Women and Children, Plaistow, E.—Assistant Resident Medical Officer. Salary at rate of £100 per annum, with board, residence, and laundry.

Salford Royal Hospital.—House Surgeon, Junior House Surgeon, and Casualty House Surgeon. Salary at rate of £100 per annum each, with board and residence.

Scarborough Hospital and Dispensary.—Senior and Junior House Surgeons. Salaries £100 and £80 per annum respectively, with board, residence, &c.

Sheffield, East End Branch of the Children's Hospital (Out-patient Department).—House Surgeon. Salary £120 per annum, with board and residence.

Sheffield, Jessop Hospital for Women.—Senior and Junior Female House Surgeons, unmarried. Salaries £100 and £80 per annum respectively, with board, residence, and laundry.

Shrewsbury, Salop Infirmary.—House Physician. Salary at rate of £110 per annum, with board and apartments.

Somerset County Council.—Assistant Tuberculosis Officer. Salary £300 per annum.

South Shields, Ingham Infirmary and South Shields and Westoe Dispensary.—Junior House Surgeon. Salary £115 per annum, with residence, board, and washing.

Surrey County Council.—Assistant Medical Officer of Health. Salary £400 per annum.

Swansea General and Eye Hospital.—Two House Surgeons. Salary £125 per annum, with board, washing, and attendance. Also House Physician. Salary £125 per annum, with board, apartments, and laundry.

Throat Hospital, Golden-square, W.—Two Resident House Surgeons. Salary £75 per annum, with board, residence, &c.

Truro, Royal Cornwall Infirmary.—House Surgeon, unmarried. Salary £100 per annum, with rooms, board, and washing.

Victoria Hospital for Children, Tite-street, Chelsea, S.W.—House Physician and House Surgeon for six months. Salary £40, with board and lodging.

Walsall and District Hospital.—Assistant House Surgeon. Salary £110 per annum, with board, residence, and laundry.

Wandsworth Union Infirmary, Ouseley-road, Balham, S.W.—Senior Assistant Medical Officer, unmarried. Salary at rate of £150 per annum, with board, lodging, and washing.

West Bromwich, County Boroughs of Walsall and West Bromwich.—Tuberculosis Officer. Salary £500 per annum.

West Bromwich and District Hospital.—Assistant Resident House Surgeon and Anæsthetist, unmarried. Salary £100 per annum, with board, residence, and washing.

West Ham, County Borough of.—Assistant School Medical Officer. Salary £250 per annum.

West Ham and Eastern General Hospital.—Junior House Physician and Junior House Surgeon. Salary at rate of £75 per annum, with board, residence, and washing.

West Hartlepool, Cameron Hospital.—House Surgeon, unmarried. Salary £150 per annum, with board and rooms.

West London Hospital, Hammersmith-road, W.—Resident Casualty Officer and Anæsthetist. Salary at rate of £40 per annum, with board, lodging, washing, &c.

Weston-super-Mare Hospital.—House Surgeon, unmarried. Salary £120 per annum, with residence, board, and laundry.

Winchester, Royal Hampshire County Hospital.—House Physician. Salary £80 per annum.

Wrexham Infirmary.—Resident House Surgeon. Salary £120 per annum, with board, lodging, and washing.

The Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies for Certifying Surgeons under the Factory and Workshop Acts at Shardlow, in the county of Derby; at Malton, in the county of York; and at Runcorn, in the county of Chester.

Births, Marriages, and Deaths.

BIRTHS.

Booth.—On July 8th, at 78, Southampton-street, Reading, the wife of Norman Booth, M.B., B.S. Lond., of a son.

Goodman.—On June 28th, at Powderham-crescent, Exeter, the wife of W. H. Goodman, L.D.S. R.C.S. Eng., of a daughter.

King.—On June 17th, at Castries, St. Lucia, B.W.I., the wife of Alex. King, M.B., of a son.

Marshall.—On July 4th, at Old Court, Ealing, the wife of C. F. Marshall, M.D., F.R.C.S., of a son.

Pineo.—On June 29th, at Richmond House, Langford, Somerset, the wife of Ernest D. Pineo, M.R.C.S., L.R.C.P., of a daughter.

Sandiland.—On July 3rd, at the City of Westminster Infirmary, South Kensington, the wife of Digby S. Sandiland, M.R.C.S., L.R.C.P., of a daughter.

MARRIAGES.

Cane—Guyot.—On July 4th, at St. Martin's-in-the-Fields, Trafalgar-square, Lionel Charles William Cane, M.R.C.S., L.R.C.P., to Doris, eldest daughter of Mr. and Mrs. Guyot, of Belvedere, Kent.

Hughes—Reeves-Smith.—On July 2nd, at St. George's, Hanover-square, Basil Hughes, F.R.C.S., to Janet, only daughter of Mr. and Mrs. Reeves-Smith, of Berkeley-street, W.

Pearson—Stanley.—On July 1st, at the Parish Church, Edgbaston, Dudley Garencières Pearson, M.B., M.R.C.S., L.R.C.P., to Annie Gordon, eldest daughter of William Stamer Stanley.

DEATHS.

Burgess.—On June 10th, at Darjeeling, India, John Hay Burgess, M.D., M.R.C.P. Lond., F.R.C.S. Eng., Captain, I.M.S., Surgeon to His Excellency the Governor of Bengal, aged 34 years.

Coleman.—On July 6th, at Epsom, Charles Alfred Coleman, M.D., aged 65 years.

Laidlaw.—On July 2nd, at Grantchester Meadows, Cambridge, Robert Laidlaw, M.D., F.R.C.S. Edin., in his 73rd year.

Rose.—On July 1st, at Warwick-avenue, Maida-hill West, W., Henry Cooper Rose, M.D., Surgeon-Major, and of the Middle Temple, Barrister-at-law, aged 83 years.

Vachell.—On July 2nd, at a nursing home at Clifton, Charles Tanfield Vachell, M.D. Lond., of Cardiff, aged 66 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

AN INTERESTING HOSPITAL.

A CORRESPONDENT writes us an account of the hospital which the Roman Catholic Sisters of Providence have built recently in Seattle, State of Washington, U.S.A. The hospital of 375 beds cost a million dollars, and contains a certain number of free beds and others for which £2 a week (in room with four to six beds) and upwards are asked. There are large private rooms, with bathroom *en suite*, which cost £8 a week, and, in addition, patients pay from 5 to 10 dollars for the use of the operation room if required, and in every case the fees of the patient's physician who has sent him into this hospital are to be paid in addition. The hospital is a good type of the modern paying institution, and is nursed by 50 religieuses and 80 nurses, mostly pupils undergoing a three years' course of training.

"An ambulance brings the patient to a door on the ground floor," writes our correspondent, "but you, as a visitor, will mount a flight of steps that covers this lower door, and you will enter a spacious white-tiled hall on the first of the six floors of the building. The surgical suite is on the uppermost floor, where there are eight operation rooms with excellent light from roof and side, and separated by well-equipped sterilising rooms, while in an anteroom are tanks for the after-washing of all appliances used in the operation. There are also a dressing-room for the surgeons, X ray and ophthalmoscope room, and anæsthetising rooms. The wards have never more than six beds, generally less, and in the private rooms there is always a wardrobe sunk in the wall. The floors are of hard wood, corners always rounded, the doors are smooth, and the mouldings very low and rounded. Lighting is by overhead lamps concealed inside sanded glass globes, in addition a light on the wall. Each patient has a signal for the nurse, which lights a green lamp over the door, easily conspicuous in the spacious white-tiled corridor; other lights—one in the nurses' duty room and one in the superintendent nurse's office—are extinguished by the nurse when she goes to the patient. There are also red lights in the corridors, indicating the position of the wide fire-escapes. The hospital is built of fireproof cement concrete."

In illustration of the care taken in the preparation and distribution of the food, our correspondent writes: "In each section there is a diet kitchen, to which the food is brought from the main kitchen by a small lift. Here it is transferred to a steam-carving table, where it is portioned out and put on trays, with clean linen and attractive crockery. On a dresser for these trays, when not in use, there are numbers for each bed served, and the tray appropriate is placed there. The sisters here well support their traditional credit for serving appetising meals." Of the engine-room he says: "Three oil-fired Babcock and Wilcox water-tube boilers of 200 h.p. each provide steam to drive dynamos for the electric light. This installation makes electricity at six-tenths of a halfpenny per kilowatt, and the exhaust steam heats the building at 7½*d.* per square foot of heating surface over the 40,000 square feet of radiators in the building. The heat is regulated from the engine-room, but in every room there is an automatic regulator which keeps the temperature constant as desired. If the room is to be warmer, the valve admits more steam to the radiators and *vice versâ*. No fire is there in the hospital outside the power house, and gas is only used in the baking ovens and grill. The engine-room does a great deal for the hospital, and does it to the satisfaction of everyone. It takes the local water, filters it, and pumps it through the building, besides storing it under pressure for fire protection (supply of 500 gallons a minute) in case pressure in the town supply falls at a crisis. The engine-room makes 500 lb. of ice per day, and besides supplies iced water at 37° (40° in the wards) for drinking; ice is never allowed into the drinks. It also supplies cooled brine to all the refrigerators through the diet kitchens and the main kitchen where they are large like caves; some of the smaller have glass linings; the largest is tiled. Steam is also used for cooking at 250 lb. Even roasting is thus done (it seems to take twice as much steam as boiling), and the sister who took me round declared the meat thus roasted was far better cooked than that out of an ordinary roasting oven. She showed me with pride, too, the racks of bottles of preserved fruit they had prepared in the summer, when perhaps they might get a carload (some ten tons) of peaches, for example, when the sisters in their off hours would peel and stone these, for nothing is wasted.

The requisite air for ventilation is taken in through tempering coils, washed as it passes through a 7′ × 9′ screen of bronze gauze and distributed by two No. 14 Sirocco fans each delivering 41,000 cubic feet per minute, but each capable of doing the full work if one breaks down. From the plenum chamber the air is conveyed to the hospital by two passages 50″ × 74″ and by a third 84″ × 40″. High-pressure steam is supplied for the kitchen, also for steam-carving tables, sterilisers, and disinfectors, and low pressure for blanket warmers and mop driers. The pressure-water system keeps a constant flush going in the water closets, and the hot water-supply to lavatories. Another set of pipes to the engine-room serves the vacuum cleaners; their dust comes down to the engine-room and is burnt with other rubbish in an oil-fired destructor. Electric power supplies light, power for laundry, for the two large elevators and seven dumb waiters, and for the announcement service (the green light), which is worked through small accumulators; the large accumulators are always charged to prevent light failing in an operating theatre during an operation. This reminded one of the provision of portable electric lights with batteries in German battleships in case of failure of light during action. Telephones connected with the city system are everywhere and also a private installation which rings calls throughout the hospital, calls which vary according to the particular high official whose presence is needed. In the office is a master clock which every minute sends round a current which moves through one minute the hands on each of the 41 dials it controls in the hospital, and, in addition, makes the meal and other signals required to indicate that duty at this moment necessary."

"So well thought out is the whole scheme," concludes our correspondent, "you do not even have to go down to the office to pay your bill, but it is enclosed in the office in a carrier which is blown up to you through a pneumatic tube which later brings you back your change before, grateful and recovered, you leave this excellent and airy hospital from which you get, besides, so fine a view over beautiful Puget Sound."

NUMBER OF DOCTORS ON THE PANEL.

To the Editor of THE LANCET.

SIR,—In THE LANCET of Feb. 21st, 1914, p. 580, you reported under Parliamentary Intelligence the reply of the Secretary to the Treasury as to the numbers of medical men on panels in England, Scotland, and Wales respectively as follows. "Mr. Wedgwood Benn: The approximate numbers of medical men on panels in England, Scotland, and Wales respectively are 16,300, 2700, and 1250 respectively, including medical men who are on more than one panel." These figures produce a total of 20,250 panel men. I observe that at the dinner of the National Medical Union, held on June 27th, 1914, it was stated that there are only 14,472 panel men. If this latest total is right, and there are actually only that number of individual men on the panel, then I suppose it would be correct to assume that there are 5778 names of medical men on panels which are duplications, or triplications, or so on (the difference between 20,250 names and 14,472 individuals). I wish to make a note of the figures for reference purposes.

I am, Sir, yours faithfully,
London, June 29th, 1914. ENQUIRER.

⁂ We see no other way to reconcile two statements, which apparently vary, while each was made with a sense of responsibility.—ED. L.

"DIE BUCHE SUCHE."

To the Editor of THE LANCET.

SIR,—Dr. F. S. Arnold will find some statistics of the relative frequency with which the beech and other trees are struck by lightning, as well as a good deal of other information on the subject, in the late Sir Jonathan Hutchinson's *Haslemere Museum Gazette*, Volume I., published by John Bale and Sons, London, pp. 118 and 202, &c.

I am, Sir, yours faithfully,
Seymour-street, W. E. MUIRHEAD LITTLE.

ARSENIC IN POTASSIUM CARBONATE.

AT the Manchester police court on June 16th six chemists were summoned at the instance of the Lancashire county council for an offence under the Food and Drugs Act—viz., selling on April 23rd salt of tartar not of the nature and quality demanded, inasmuch as the salt contained arsenic. The prosecutor made a statement as to the facts, and then asked the bench to allow the cases to be withdrawn, the defendants agreeing to pay the cost. Salt of tartar is known as carbonate of potassium, and there are several ways of manufacturing it. The old way was to make it from wood ash, when there was no risk of arsenic contamination. It is now made in England from a salt which comes from Germany. In the process this salt is treated with sulphuric acid, which it is well known often contains arsenic, and it was suggested that in that way the arsenic got into the carbonate of potassium.

The quantity of arsenic found varied from 9·5 grains to 4·5 grains per pound. Among 79 samples recently analysed by the county analyst only 23 were found free from arsenic, while the other samples contained from 1 grain to 14·5 grains per pound. The prosecutor believed that the defendants sold the salt not knowing it to be adulterated. But none of the defendants had any reason to suspect the presence of arsenic in the salt. They were all buying from reputable wholesale firms, who themselves had no suspicion. In the British Pharmacopœia itself there is no warning at all that arsenic may be an impurity.

WANTED—A HOME.

To the Editor of THE LANCET.

SIR,—Could any of your readers inform me where a gentleman would be taken into a home or family in a quiet country district or the seaside for the inclusive fee of 21*s*. per week? He is quite able to look after himself, and would not require any special care or nursing.

I am, Sir, yours faithfully,
J. POLLOCK SIMPSON, M.D.
8, Upper Montagu-street, W., July 2nd, 1914.

To the Editor of THE LANCET

SIR,—Can any of your readers recommend a convalescent home for a lady, where the services of a nurse can be obtained? Terms must be moderate. S.E. coast preferred.

I am, Sir, yours faithfully,
W. H. FROME YOUNG, M.R.C.S.Eng.
Bembridge, I.W., July 3rd, 1914.

FORCIBLE FEEDING.

A LETTER signed by 70 registered medical men objecting "to the forcible feeding as carried out in His Majesty's prisons" has been forwarded to the Home Secretary, with a request that Mr. McKenna will receive a deputation on the subject.

FLIES AND AERATED WATERS IN STOPPERED BOTTLES.

To the Editor of THE LANCET.

SIR,—The other day I sent for a bottle of lemonade and noticed all around the mouth of the stoppered bottle evidence of filth deposited there by flies. It is clear that the flies had been attracted by the remaining saccharine matter. This would, of course, also apply to the mouths of syphons. I write this letter in order that some inventive genius may bring forward a stopper—a simple matter—which will cover as a shield the aperture of the bottle and prevent flies depositing their filth there. A paper cover over the stopper could be used for bottles—as in the case of a well-known brand of bottled beer—and a small metal shield or cap, with chain, for syphons. It must be patent to everyone that if some protection is not made when the fluid is poured out of the bottle or syphon the filth of the flies must become mixed with it.

I am, Sir, yours faithfully,
July 3rd, 1914. A MEDICAL OFFICER OF HEALTH.

"BIOMALZ."

IN the analysis of the above preparation, a combination of malt extract with calcium glycerophosphate, we reported in THE LANCET of May 9th, 1914, that the percentage of moisture was 37·83. Two recent samples have since been examined, and the results showed a perceptible reduction in the amount of moisture—viz., 34·93 per cent. and 34·94 per cent. respectively.

ERRATUM.—In Dr. E. G. Fearnside's article in THE LANCET of last week on Diseases of the Pituitary Gland the acknowledgment to Mr. F. S. Kidd on page 23 should have been to Dr. Percy Kidd, while the author wishes to make acknowledgment also to Dr. Theodore Thompson.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

A DIARY OF CONGRESSES.

THE following Congresses, Conferences, and Exhibitions are announced. In 1914:—

May 1st–Nov. 1st (Lyons).—International Town Hygiene Exhibition.
,, 15th–Oct. 15th (Berne).—Swiss National Exhibition.
May–October (London, Shepherd's Bush).—Anglo-American Exposition.
June–July (Groningen).—University of Groningen 300th Anniversary Celebration.
July 6th–11th (Blackpool).—Twenty-ninth Congress of the Royal Sanitary Institute.
,, 15th–20th (Edinburgh).—Congress of the Royal Institute of Public Health.
,, 21st–23rd (Chester).—British Pharmaceutical Conference.
,, 27th–31st (London).—Fifth Annual Session of the Clinical Congress of Surgeons of North America.
,, 28th–31st (Aberdeen).—Eighty-second Annual Meeting of the British Medical Association.
July–September (Australia).—Eighty-fourth Annual Meeting of the British Association for the Advancement of Science. (July 28th to August 3rd at Perth, August 8th to 12th at Adelaide, August 13th to 19th at Melbourne, August 20th to 26th at Sydney, August 27th to Sept. 1st at Brisbane).
Aug. 2nd–10th (Paris).—Tenth Congress of Esperantists.
,, 3rd–8th (London).—Sixth International Dental Congress.
,, 10th–15th (St. Petersburg).—Twelfth International Congress of Ophthalmology.
,, 29th–Sept. 14th (Toronto).—Canadian National Exhibition.
Sept. 7th–12th (Berne).—International Congress for Neurology Psychiatry, and Psychology.
,, 10th–12th (Fort William and Port Arthur, Ontario).—Fourth Annual Congress of the Canadian Public Health Association.
,, 21st–26th (Victoria, B.C.).—Dominion Exhibition.
,, 21st–26th (Vienna).—Third International Congress on Diseases of Occupation.
,, 30th–Oct. 4th (Brussels). Fourteenth French (de langue française) Congress of Medicine.
Oct. 31st–Nov. 2nd (Berlin).—First Congress of the International Society for Sexual Research.
Nov. 15th–21st (London).—Health Week. (Under the direction of the Health Week Committee appointed by the Royal Sanitary Institute.)

Medical Diary for the ensuing Week.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. D. Corbett: Clinique (Skin). 5.15 P.M., Lecture:—Dr. T. D. Lister: Artificial Pneumothorax.

TUESDAY.—4 P.M., Dr. E. H. Shaw: Clinique (Medical). 5.15 P.M., Lecture:—Dr. J. D. Mortimer: The Medico-Legal Position of the Anæthetist.

WEDNESDAY.—4 P.M., Mr. A. E. Johnson: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. J. D. Windle: Some Modes of Respiration in Pneumonia (lantern demonstration).

THURSDAY.—4 P.M., Mr. G. Taylor: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. S. R. Wells: Certain Irregularities of the Pulse.

FRIDAY.—4 P.M., Mr. E. A. Peters: Clinique (Ear, Nose, and Throat).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 10.30 A.M., Medical Registrar: Demonstration of Cases in Wards. 12 noon, Dr. Bernstein: Pathological Demonstration. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Dr. Pritchard: Bacterial Therapy Department. Mr. B. Harman and Mr. Gibb: Diseases of the Eye. 5 P.M., Lecture:—Mr. T. Gray: Some Surgical Aspects of Indigestion.

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. Dr. Owen: Demonstration of Cases in Wards. 12 noon, Mr. T. Gray: Demonstration of Fractures, &c. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin. 5 P.M., Clinical Lecture:—Dr. Davis: Diseases of the Ear.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 11 A.M. Mr. Souttar: Demonstration of Minor Operations. 12 noon Lecture:—Mr. Souttar: Abdominal Diagnosis. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations. Dr. Simson: Diseases of Women. Mr. Gibb: Diseases of the Eye. 5 P.M., Lecture:—Dr. Bernstein: Pyrexia.

THURSDAY.—9 A.M., Dr. Bernstein: Bacterial Therapy Department. Dr. Simson: Gynæcological Demonstration. 12 noon, Lecture:—Dr. G. Stewart: Neurological Cases. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Mr. B. Harman: Diseases of the Eye. 5 P.M., Lecture:—Dr. Bernstein: Pyrexia.

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 10.30 A.M., Surgical Registrar; Demonstration of Cases in Wards. 12.15 P.M., Lecture:—Dr. Bernstein: Applied Pathology. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin. 5 P.M., Lecture:—Dr. Bernstein: Bacillus Coli Infections.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Operations of the Eye. 12 noon, Lecture:—Mr. T. Gray: Surgical Anatomy of the Abdomen. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10.30 A.M., Surgical Out-patient (Mr. E. Gillespie). 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Gynæcological (Dr. Banister). 3 P.M., Medical In-patients (Dr. R. M. Leslie).

TUESDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. Howell Evans); Nose, Throat, and Ear (Mr. H. D. Gillies). X Ray and Electrical Methods (Dr. Metcalfe). 3.30 P.M., Medical In-patient (Dr. A. J. Whiting).

WEDNESDAY.—Clinics:—2 P.M., Throat Operations (Mr. Gillies). 2.30 P.M., Children's Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. Dorell).

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson); X Rays and Electrical Methods (Dr. Metcalfe).

FRIDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld): Surgical (Mr. E. Gillespie); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. G. P. Chappel).

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, Medical School, City-road, E.C.

MONDAY.—1.30 P.M., Department for the Prevention of Consumption. 2 P.M., Cardiac Department, Dr. Stott; Out-patient Department, Dr. Phear, Dr. S. Thompson. 3 P.M., Wards, Dr. Phear.

TUESDAY.—9 A.M., Laryngological Department, Mr. Mant. 1.30 P.M., Department for the Prevention of Consumption. 2 P.M., Out-patient Department, Dr. M. Leslie, Dr. B. King; Operations, Mr. A. Evans. 3 P.M., Wards, Dr. White. 4 P.M., Wards, Dr. M. Leslie.

WEDNESDAY.—2 P.M, Wards, Dr. A. Davies; Out-patient Department, Dr. Drysdale, Dr. Kellie. 4 P.M., Wards, Dr. Drysdale. 4.30 P.M., Roentgen Ray Department, Dr. Jordan.

THURSDAY.—9.30 A.M., Dental Department, Mr. G. Thomson. 10 A.M., Cardiac Department, Dr. Stott. 1.30 P.M., Department for the Prevention of Consumption. 2 P.M., Out-patient Department, Dr. Phcar, Dr. S. Thompson. 4.30 P.M. Laryngological Department, Mr. Mant.

FRIDAY.—1.30 P.M., Department for the Prevention of Consumption. 2 P.M., Wards, Dr. Calvert; Out-patient Department, Dr. M. Leslie, Dr. B. King. 5 P.M., Lecture-Demonstration:—Dr. Kellie: Broncho-pneumonia.

SATURDAY.—10 A.M., Out-patient Department, Dr. Drysdale, Dr. Kellie. 11.30 A.M., Roentgen Ray Department, Dr. Jordan.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.

WEDNESDAY.—4.30 P.M., Dr. Burrell: Treatment with Tuberculin of Tuberculosis in Children.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.

Course of Demonstrations for Post-Graduates:—

FRIDAY.—4 P.M., Dr. S. R. Gloyne: The Use of Tuberculin. (Laboratory demonstration.)

CENTRAL LONDON THROAT. NOSE, AND EAR HOSPITAL, Gray's Inn-road, W.C.

TUESDAY.—3 P.M., Mr. Stuart-Low: Diseases of the Ear.

THE THROAT HOSPITAL, Golden-square, W.

MONDAY.—5.15 P.M., Special Demonstration of Selected Cases.

THURSDAY.—5.15 P.M., Clinical Lecture.

MANCHESTER HOSPITALS POST-GRADUATE CLINICS.

TUESDAY.—MANCHESTER AND SALFORD HOSPITAL FOR SKIN DISEASES, Quay-street.—4.30 P.M., Dr. W. Dyson: Bullous and Erythematous Diseases of the Skin.

WEDNESDAY.—ROYAL INFIRMARY—4.30 P.M., Dr. Brockhank: Cases of Anæmia and a Simple Method of Blood-examination.

THURSDAY.—ANCOATS HOSPITAL—4.30 P.M., Demonstration of Cases by Medical Staff.

For further particulars of the above Lectures, &c., see Advertisement Pages.

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Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

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Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed " To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. I. of 1914, which was completed with the issue of June 27th, were given in THE LANCET of July 4th.

VOLUMES AND CASES.

VOLUMES for the first half of the year 1914 will be ready shortly. Bound in cloth, gilt lettered, price 16*s.*, carriage extra.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, July 8th, 1914.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
July 2	29·64	S.W.	0·20	123	77	68	66	71	Cloudy
,, 3	29 68	S.	0·03	118	71	63	63	64	Cloudy
,, 4	30·06	W.	...	119	74	56	56	61	Fine
,, 5	29·92	S.W.	0·33	90	68	58	58	60	Cloudy
,, 6	29·77	W.	0·01	107	66	54	54	55	Cloudy
,, 7	29·93	W.	0·05	124	69	54	56	62	Cloudy
,, 8	29·99	S.	...	82	64	57	59	60	Raining

The following magazines, journals, &c., have been received:— St. Bartholomew's Hospital Journal, St. Thomas's Hospital Gazette, Undergraduate, New York Post-graduate, American Journal of Roentgenology, Medico-Legal Journal, American Journal of Tropical Medicine, Journal of Laryngology, Rhinology, and Otology, Canadian Journal of Medicine and Surgery, Journal of Comparative Pathology and Therapeutics, West London Medical Journal, Concrete, British Journal of Children's Diseases, Science Progress, Practitioner, British Journal of Inebriety, Review of Neurology and Psychiatry, Clinique Infantile, New Zealand Medical Journal, Magazine of the London (Royal Free Hospital) School of Medicine for Women, Pediatrics, Cleveland Medical Journal, Archiv für Schiffs- und Tropen-Hygiene, Quarterly Journal of Medicine, Caledonian Medical Journal, Revue de Gynécologie, Public Health, Dominion Medical Monthly, South African Nursing Record, American Journal of Tropical Diseases.

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ABSTRACT OF

The Bolingbroke Lecture

ON

PROGNOSIS.

Delivered before the South-West London Medical Society on June 10th, 1914,

By W. HALE WHITE, M.D. Lond., F.R.C.P. Lond.,

SENIOR PHYSICIAN TO GUY'S HOSPITAL.

Mr. President and Gentlemen,—When your secretary did me the honour of inviting me to address you, he asked that the paper might be concerned with something that would especially interest those whose work is chiefly clinical. Now we have to find out what is the matter with our patients, to treat them, and to try to foretell what the result of their illness will be, and it is with prognosis that I propose to deal chiefly. Of the importance of it there is no doubt; patients' friends do not care what is the matter, or what you do—all they care is will the sufferer get well. Hippocrates said: "The best physician is the one who is able to establish a prognosis, penetrating and exposing first of all at the bedside the present, the past, and the future of his patients, and adding what they omit in their statements. He gains their confidence, and being convinced of his superiority of knowledge they do not hesitate to commit themselves entirely into his hands. He can treat, also, so much better their present condition in proportion as he shall be able from it to foresee the future."

The art of prognosis is as old as the hills and has probably existed as long as the human race. Astrologers were constantly attempting to find out if patients would get well. To quote from Dr. C. A. Mercier's FitzPatrick lectures recently published[1]: "If the moon should be in conjunction with a propitious planet in the ascendant, and should be moving forward and her light waxing, and both should be free from adverse influences, then the disease will be quickly cured; but if the moon should be in the House of Death the patient cannot be saved." However, to leave these fanciful speculations and to turn to modern prognosis. Obviously we cannot discuss the prognosis of every disease, but let us take a few of the commoner.

Prognosis in Syphilis.

Syphilis has been much before the profession lately, and it has been shown that it is considerably more far-reaching in its effects than was formerly thought. If there were no syphilis there would be no tabes dorsalis and no general paralysis. Further, both these diseases may occur in children and be due to congenital syphilis, and some of the many mentally deficient children may owe their trouble to congenital syphilis. Then, although syphilis is not the only cause of atheroma, for atheromatous vessels are found in Egyptian mummies of about 1000 B.C., which is long before syphilis had been introduced into the old world, yet it is a cause for some cases of atheroma, and if you will have a Wassermann reaction done on all cases of atheroma of the aortic valves you will sometimes find it positive when there is no other evidence of syphilis. Without mentioning other results of syphilis it is clear that it is most important to try to foretell the outlook of this disease.

Now it used to be taught that if a patient had had two years' continuous treatment he might be regarded as cured, but we all often come across cases which show that this is certainly not always true, and the following figures from the "Medico-Actuarial Mortality Investigation" (vol. iv., Part 1, 1914) support my contention:—

	Actual deaths.	Expected deaths.	Ratio.*
Class 1.—Syphilis Certain, Thoroughly Treated; 2 years' Continuous Treatment and 1 year's Freedom from Symptoms.			
Certain syphilis between 3 and 5 years prior to application	13	9·32	139%
Between 5 and 10 years	34	19·56	174%
More than 10 years	53	24·42	217%
Class 2.—Not Thoroughly Treated or no Details Given.			
Certain syphilis between 2 and 5 years prior to application	44	15·52	284%
Between 5 and 10 years	54	25·52	212%
More than 10 years	76	59·09	129%
Class 3.—Doubtful Syphilis.			
More than 2 years prior to application	67	48·71	138%

* Being the ratio of actual and expected deaths.

All these persons, all men, were apart from their syphilis exceptionally good lives, for in spite of their syphilis they were accepted at standard rates; yet see what bad lives they were. The death-rate from tabes and general paralysis was five times the normal, and the death-rate from non-syphilitic diseases as pneumonia was also excessive. We see the same with the figures of the Gotha Insurance Company of Germany, for among 1778 men who had undergone treatment for syphilis there were 487 actual deaths against 290 expected. I think you will agree with me that the prognosis of syphilis treated as it was till quite recently is worse than we commonly thought. These cases, however, remind us that for a long while it was taught that the outlook of tabes as regards amelioration was very gloomy. Now we know it is not so bad as this, for with a thorough course of mercurial inunctions or injections many tabetic symptoms lessen, and perhaps future investigations will show that they do better still if the mercurial treatment is preceded by salvarsan or by salvarsanised serum injected intrathecally. Since, too, we taught patients the importance of exercises the ataxia may lessen considerably.

Tuberculosis.

Everything points to the conclusion that the outlook for sufferers from tuberculosis is much better than it was. There has in this country been a steady fall in the mortality during the last 60 or 70 years, and apparently the rate of fall has not been altered by modern treatment; but, of course, it is possible that the rate might have been slower during the last few years if it had not been for treatment. All post-mortem room experience shows that healed tubercle is very common, and there is no case of phthisis so bad as to be quite hopeless. Even cases of long-continued suppuration from cavities or dilated tubes can occasionally be cured by the induction of an artificial pneumothorax, and I have a friend in whom the tuberculous process spread to the ribs causing necrosis of some, his temperature was 106° F., and yet he recovered well enough to enjoy life and look after a small farm. The most fatal variety of tubercle is tuberculous meningitis, and fortunately that is one of the rarest complications of ordinary adult phthisis, but I know of two cases of undoubted tuberculous meningitis in children which recovered.

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[1] The Lancet, Nov. 29th, 1913, p. 1522; April 18th, 1914, p. 1119.

The most important thing to observe in trying to foretell the course of a case of phthisis is the state of the gastro-intestinal tract. Anorexia, vomiting, and diarrhœa are very bad signs, especially if persistent; indeed, loss of weight from any cause is bad. The most important instrument in a case of established phthisis is not a stethoscope but a weighing machine. But very bad as is the outlook of tuberculous intestinal ulceration even that may heal, for Mr. F. J. Steward once opened the abdomen of a patient of mine in whom six cured tuberculous ulcers of the intestine were found. The signs next in importance are those of general infection: for example, a persistently rapid pulse, continued pyrexia, and frequent profuse sweats are all bad, but it is surprising what a time some of these may persist and yet return to normal. These signs of general infection are of much greater importance than pulmonary signs; very few patients die from the local disease of the lungs; those that die do so because of the intensity of the general infection. Albuminuria and profound anæmia are unfavourable, and so is a strong family predisposition.

Of associated conditions diabetes, syphilis, and pregnancy very greatly increase the gravity of the outlook. As far as my experience goes I am much impressed with the extreme seriousness of either syphilis or pregnancy occurring in a person with active phthisis. I well remember a young man with active phthisis who acquired syphilis. The rapidity with which he went downhill after this was remarkable, but I have no evidence to show whether or not healed phthisis is relighted by syphilis. On the other hand, patients with pleurisy or emphysema often do well.

Many patients are brought to us because they have coughed up a little blood. The patient usually pleads that it comes from the throat, and sometimes he looks so well and his physical signs are so healthy that the doctor comes to the same opinion, but this is always hazardous, for nearly always such blood means slight phthisis. Cases such as these often come before us for life insurance. The following results are interesting:—

	Actual deaths.	Expected deaths.	Ratio.
A. One hæmoptysis within 5 years of application	46	30·41	151%
B. One between 5 and 10 years prior to application	63	48·16	131%
C. One or more hæmoptysis, last more than 10 years prior to application	223	219·6	102%

Now these were all taken at normal rates, and therefore apart from the hæmoptysis were apparently exceptionally good lives, yet we see that really they were much under average lives. The deaths from tuberculosis of the lungs in Group A were five times the normal, in Group B three times, and in Group C twice. In connexion with this it is interesting to notice that an actuarial investigation was made of 3000 patients who had been in the Adirondack Sanatorium from 1885 to 1911. The mortality after the date of discharge from the sanatorium of those apparently cured was about twice the normal.

I have just mentioned that cases of phthisis accompanied by pleurisy often do well, and that I think is true; but at the same time a person who has had tubercle pleurisy cannot be considered normal, for he is liable to phthisis. Thus actuarial investigations show that the mortality of those who except for a history of pleurisy are healthy is above the normal rate, and that among those who have had pleurisy the death-rate from tuberculosis of the lungs is three times the normal.

Heart Disease.

It is strange that for many years several (although not all) physicians quite missed the most important factor in the prognosis of heart disease—namely, the state of the cardiac muscle—and concentrated their attention on the murmurs. The tale is told that the chaplain of one of the London hospitals had a loud murmur, and the medical staff reported that he could not live long with such a murmur. He was pensioned at his full salary and lived 40 years.

Generally speaking, the louder the murmur the better, for it means that owing to the vigour of the cardiac muscle the blood is being sent forcibly through the diseased valve. The loudest murmur I ever heard was audible to the unaided ear a yard from the foot of the bed. The patient sought relief because the noise of his murmur kept his wife awake. He was doing his work as a dock labourer. Another man with a loud murmur won a London to Brighton walking race. I knew a doctor with a loud murmur who worked and lived to be over 80. Soft murmurs indicate a feeble muscle; thus many a case of valvular disease has no murmurs on admission to the hospital, the muscle is too exhausted, but a murmur appears after the patient has rested in bed. The cases of mitral constriction with a loud crescendo murmur do well; the loudness of the murmur shows a strong auricle forcing the blood so strongly through the constricted auriculo-ventricular orifice as to compensate effectually for its narrowing. Then, too, we must remember that many of the weakest murmurs we hear are directly due to myocarditis, the weakened muscle allowing of dilatation of the auriculo-ventricular ring.

More than half the cases of heart disease are caused by acute rheumatism, the micro-organism of which either directly or through its toxin affects chiefly the synovial membranes and the heart. To reach the heart, however, the poison must be carried there by the coronary vessels, and far more of it must reach the muscle than the valves or the pericardium; indeed, considering the fewness of the vessels in the valves, it is strange that they are affected at all, and putting aside malignant endocarditis the affection of them would hardly matter were it not that they pucker and so become inefficient. It is clear that the implication of the muscle is the most important. Indeed, it is by damage to the cardiac muscle by toxins that probably most people die; hence that invaluable rule of prognosis that a rapid pulse is a bad sign. We all know that a case of suppurative peritonitis is doing badly if the pulse is mounting in rate. Whether or not the pulse is mounting often determines whether an operation on the abdomen shall or shall not be performed; a rapid pulse is of bad omen in typhoid fever, pneumonia, phthisis, exophthalmic goitre, and indeed in any condition. In life insurance work the actual deaths of those with rapid pulses are double those which would be expected with healthy lives. The importance of the muscle being so great we shall be guided in our prognosis by the signs of diseased muscle—e.g., rapidity of the pulse, force of the apex beat, force of the pulse, signs of dilatation of the heart, and in hospital work the electrocardiograph is of help.

In passing we may note that an irregular pulse is not so often of bad prognostic significance as a rapid one. Probably because its very irregularity means—as in the case of extrasystoles—long pauses during which it can recover itself. Nevertheless, irregularity is of some considerable importance, for Cowan tells us that out of 102 cases of mitral disease 31·4 per cent. died, but the deaths among those with regular rhythm were 20·5 per cent., with irregular 58·6 per cent. Among 58 cases of aortic disease 29·3 per cent. died; 25·6 per cent. of them had regular rhythm and 40 per cent. irregular. Of all irregularities that due to extrasystoles is by far the least important.

When a patient is lying in bed with recent rheumatic carditis we must keep him in bed, it may be weeks, so long as there is any clinical evidence that the affected muscle is undergoing repair, but if the murmur is valvular we do not need to keep him in bed till it has disappeared; indeed, we might keep him till his death if we were to wait for that. Nothing shows the skill of a doctor more than his management of heart cases. If he keeps them in bed too long he does irreparable harm, for the muscle gets feeble and flabby; if he keeps them in too short a time the prognosis is made bad because the raised blood pressure that follows exertion leads to dilatation of the heart if the muscle is weakened by unhealed carditis. When such a case gets up the ultimate prognosis will depend entirely upon the judgment with which we allow a little exercise so as to strengthen the heart, but not so much as to dilate it; for the first few weeks the doctor must frequently see his patient, increasing or decreasing the exercise day by day. All this can generally be done at home; if so, there is no need for places which lay themselves out for cardiac patients. We cannot leave the prognosis of heart disease without reminding you of the remarkable fact that rheumatic nodules are always associated with severe cardiac disease; we now know this because there are always similar nodules in the muscle substance of the heart.

PNEUMONIA.

Let us take another common disease—viz., lobar pneumonia—to illustrate some points in prognosis. A most important circumstance is the age. I took at random from my case-book 12 cases. Six were over 60; of these, 5 died without any complication. Six were young. The first was a girl, aged 15, who had such severe mania that Sir George Savage and I both thought she would die; she got perfectly well. The second, a lad with such severe pericarditis that his temperature was up for three weeks, got well. The third, a girl aged 15, who coughed up pus from an empyema following the pneumonia, got quite well; the fourth, a girl so ill that she was comatose, with a temperature of 105° F., got well; the fifth, a male aged 25, got double empyema after his pneumonia, but made a complete recovery; and the sixth, a young man with respirations of 108, got quite well. Probably the next most important fact in the prognosis of pneumonia is whether the patient is alcoholic; those who have drunk heavily rarely recover. It is important to remember that it is not often the amount of lung that is involved that kills in pneumonia, as is shown by the fact that it is comparatively rare to see a patient with pneumonia dying livid, but pneumonia is chiefly fatal by the action of the toxin on the heart; a very rapid feeble pulse of poor volume is always very serious.

Much can be learnt about the prognosis in pneumonia from the temperature chart. A high temperature—provided it is not so high, e.g. over 105°, as to be in itself dangerous—is a good sign. On the other hand, a low temperature—namely, under 100°—is a bad sign, for it means that the patient is not reacting to the stimulation of the invasion by the pneumococcus. In the same way a striking leucocytosis indicating a good reaction is favourable —for example, in consecutive cases that got well the counts were 30,000, 27,000, 40,000, 28,000, 24,000.

As with so many diseases, so with pneumonia, the time at which the patient has the disease is important; thus, in some years the mortality is high, in others low. In 1895, when post-influenzal pneumonia was very rife, in some institutions the mortality shot up to the appalling figure of 64 per cent. If sufferers from pneumonia sleep badly they do badly as a rule, and if they sweat much apart from the crisis they do badly, probably because the sweating indicates severe infection.

NEPHRITIS.

Turning now to the prognosis of nephritis. One of the most serious facts is the presence in the degenerative variety of albuminuric retinitis. Sufferers from chronic renal disease in whom this is present probably never recover. In one set of cases 85 per cent. of them were dead within the first year after the discovery of the degenerative retinitis, and 9 per cent. more died in the second year. On the other hand, inflammatory retinitis, best shown by optic neuritis, may be associated with acute nephritis, which gets well.

An important circumstance in the prognosis of chronic interstitial nephritis is the age of the patient. Young subjects with chronic granular kidney rarely if ever do well, and almost anyone under 30 who has it will soon die. Probably the cases in the first half of life are a different disease from the cases in middle life, for while people with interstitial nephritis in later middle life may die from cerebral hæmorrhage or pneumonia or various conditions which are associated with granular kidney, those in the first half of life who have granular kidney almost invariably die soon of uræmia.

The sufferer from this disease who complains of general weakness does badly, so does the patient who is thin and pale, and if a patient takes to bed because of weakness he probably will not live long. Skin troubles, too, increase the seriousness of the outlook; the rare general dermatitis of Bright's disease usually kills, and very œdematous parts are liable to erythema or more severe inflammatory changes in the skin, and these are frequently fatal. Severe long-continued diarrhœa in Bright's disease, inasmuch as it points to some colitis or enterocolitis, is of very dangerous prognosis. To estimate the outlook when the patient is definitely uræmic is very difficult, but, speaking generally, the more severe the symptoms of uræmia the worse the prognosis. When the patient has a cerebral hæmorrhage the outlook is by no means necessarily fatal. The public have a saying that the third stroke is fatal. The following point to a fatal result: (*a*) Coma still present at the end of 24 hours; (*b*) Cheyne-Stokes breathing as a result of the hæmorrhage; (*c*) much mucus in the lungs; (*d*) paralysis of all four limbs; (*e*) a very low temperature; and (*f*) a very high temperature.

Pneumonia, pleurisy, peritonitis, and pericarditis all greatly increase the gravity of the outlook. Suppression of urine is of most serious importance. The actual amount of albumin is not of much value in prognosis, but an increase in the amount is of bad augury, a lessening is of good. The normal amount of urea in the blood is 0·3 per cent.; anything over 1·0 per cent. shows that uræmia is likely, in which condition we may get a reading as high as 3 per cent.

DIABETES.

Diabetes is a disease of great interest from many points of view, and not least from that of prognosis. In the first place it is a racial disease, being terribly common among the natives of India, and at the present time the frequency of death from diabetes in the East is so serious that the Government have sent out a member of our profession to investigate the subject. Then, too, we have the well-known fact that it is commoner in Jews than Christians.

Quite apart from race, however, it is a family disease. Thus Otto May, investigating 76,333 deaths at the Prudential Assurance Company, found 1143 were from diabetes. The family histories of these showed a death from diabetes in 41—i.e., 3·6 per cent. A control investigation of 1143 other cases picked out at random from the same period gave a family history of diabetes in only 12—i.e., 1·05 per cent. A further study of his figures shows that diabetes includes at least two different groups of cases: (1) a group in which the incidence is in middle or late life, the disease comparatively mild, and the family factor absent; and (2) a group characterised by earlier incidence, more rapid termination, and a tendency to run in particular families. This affects our discussion of prognosis, for if there be a strong family history the sufferer from diabetes will probably die rapidly and before he attains middle life. Further, it appears that the hereditary factor comes out more in the male—that the death from diabetes of a father or brother is more ominous than that of a mother or sister, and that the male is more liable to suffer from family diabetes than the female. The distinction that these investigations show as to two kinds of glycosuria according to age are well known. I often wonder if the passage of a little sugar by an elderly person matters. We all know the elderly persons, men especially, whose sugar is easily controlled by diet; usually they pass no diacetic acid and have few of the symptoms of diabetes. Indeed, it is highly probable that a number of elderly men have a little glycosuria, but they go to their grave without its ever having been suspected and as far as we know without its ever having done them any harm.

I would suggest that the most important thing about the prognosis of diabetes is the effect of treatment; it is impossible to know beforehand whether a patient is going to respond easily to this. The other important thing is whether the sufferer is able to live in easy and comfortable circumstances. No doubt if diabetics are well off the ease with which they can buy suitable food is greatly in their favour, but of almost equal importance is the fact that they can give up their work and lead a quiet life. Worry is a powerful factor in precipitating diabetic coma. I know middle-aged persons who have had diabetes for 20 years and whose urine always contains some sugar and often a little diacetic acid, but then they have always been very careful to carry out the treatment ordered and to live quietly. A member of our own profession always gets considerable glycosuria when working hard, but when he takes a long holiday it always diminishes considerably and often disappears altogether.

Those who are occasionally a little drowsy must always be on their guard, but if large doses of bicarbonate of soda are given the drowsiness may entirely pass away; but, on the other hand, I doubt if persons ever recover from real coma, although alkalies may prolong life a little. Lately Dr. E. P. Poulton and others have shown that during the dyspnœa which so often precedes, and always accompanies, diabetic coma there is a considerable diminution in the CO_2 in the alveolar air. The explanation is that the blood being more acid than normal in those who are going to have diabetic coma, the increased acidity exciting the respiratory centre leads to deeper respiration and consequent washing out of CO_2 from the alveolar air, and an apparatus has been devised for easily measuring the CO_2 in the alveolar air. I have a strong suspicion that if lipæmia is very marked the outlook is bad. I need hardly remind you that gangrene, phthisis, and almost any severe illness increase the gravity of the outlook in diabetes, but it is of interest to remember that pyrexia sometimes increases the sugar and sometimes leads to its disappearance, and operations have the same variable result.

SOME GENERAL FACTORS IN PROGNOSIS.

There is another aspect of the prognosis question and it is this: that we cannot possibly tell whether a treatment is good or bad unless we know what is the natural course of the disease. Over and over again good results are ascribed to treatment quite unjustly; the patient has got well because in the natural course of the disease he would do so, treatment has had nothing to do with it. [The lecturer here gave results already published of the natural course of the disease in those who suffer from gall-stones and those who suffer from exophthalmic goitre.]

In trying to estimate the prognosis in any disease we have not only to think of the natural course of the disease but the kind of patient who is afflicted by it. Time will only permit us to take three instances of this. One circumstance that makes a patient a bad life is excessive weight. The actuarial research to which I have already referred has constructed a table:—

	Ratio of actual to expected deaths.
Average normal weight	98 per cent.
From 5 to 15 per cent. overweight	114 ,,
,, 15 ,, 25 ,, ,, ...	129 ,,
,, 25 ,, 35 ,, ,, ...	136 ,,
,, 35 ,, 50 ,, ,, ...	165 ,,
More than 50 ,, ,, ...	228 ,,

Further, a study of the figures clearly shows that the mortality increases in proportion as the abdominal girth over that of the expanded chest increases; thus the expectation of life of a man who is 50 per cent. overweight and whose abdominal girth exceeds that of the chest by more than 3 inches is very bad. Among heavy people the death-rate from diabetes, apoplexy, heart disease, pneumonia, and Bright's disease was very high, while from tuberculosis it was very much lower than normal, and generally speaking the greater the weight the lower the mortality from phthisis. It must be remembered that the figures just given understate the case, for all the people from whom the figures are drawn were taken at standard rates, and as they were heavy a rigid selection was made so that only those which appeared exceptionally healthy were insured.

It is well known that over-indulgence in alcohol greatly damages prognosis in any disease. The following ratio shows that alcoholic subjects are bad lives, as when there was one alcoholic excess or more, the last within two years of application, the ratio of actual to expected deaths was 174 per cent. Here again the case is understated, for these figures refer to lives apparently so exceptionally good that they were taken at ordinary rates in spite of the history of alcoholic excess.

Lastly, there is the mental factor. Every doctor dislikes the patient with an acute illness who is sure he will die, and likes the patient who is certain he will recover. A boy said he knew he would die as a result of an anæsthetic necessary for an operation, and he did before the operation was begun, although the anæsthetic was given by a highly skilled anæsthetist.

INCOMPLETE ROTATION OF THE INTESTINAL LOOP AS A CAUSE OF RETROCOLIC HERNIA.

WITH NOTES ON THE DEVELOPMENT OF THIS CONDITION.

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HERNIA other than that of the vermiform appendix into a retrocolic fossa is a rare condition. An analysis of the cases hitherto described is given by Moynihan,[1] according to whom many of the cases hitherto recorded cannot be regarded as authentic. He passes in review some 14 cases, and decides that but 7 of these are genuine. The interesting case described by Fürst (*vide infra*) is relegated to the doubtful category; however, it seems not improbable that it is in reality one of retrocolic hernia due to a developmental anomaly, as in some of its features it resembles the case I describe later. For a more complete understanding of this interesting form of retrocolic hernia it will be necessary first to review our knowledge of the anatomy and development of the retrocolic fossæ.

Anatomy of the retrocolic pouches of peritoneum.—The retrocolic fossæ vary considerably. Often they are both absent, and in the majority of cases only one is present. Berry[2] gives the following statistics: (1) Internal fossa alone, 15 per cent.; (2) both fossæ, 10 per cent.; and (3) external fossa alone, 5 per cent. The same anthority places the retrocolic position of the appendix second in order of frequency. According to Lockwood,[3] hernia into the internal fossa is the more common. He states: "I have many times found the inflamed appendix in the fossa. ...... When the hernia is complete and the mouth of the fossa closed the greatest difficulties may arise." It is difficult to exaggerate, therefore, the importance of a knowledge of the surgical anatomy of these fossæ to the surgeon.

Having regard to the confusing nomenclature that has gathered round these fossæ, Jonnesco's nomenclature is the best because it is the simplest and most accurate. He divides them into external and internal retrocolic fossæ. The internal retrocolic fossa is best described by Lockwood and Rolleston[4] as follows: "It is bounded on the right by the mesentery of the ascending colon and on the left by the enteric mesentery. It is situated behind the angle of junction of ileum and cæcum, which have both to be lifted up to see its mouth. The fossa itself runs a varying distance upwards behind the ileo-colic junction and parallel to the ascending colon." It must be borne in mind, to avoid confusion, that they gave the term "ileo-cæcal" to the fossa under consideration—a term which is now more usually applied to the fossa between the meso-appendix and the ileo-cæcal fold. In another place (*loc. cit.*) Lockwood states that "the fossa may reach half-way up the ascending colon beyond the crest of the ilium and end close to the kidney and duodenum."

The external retrocolic fossa, first described by Treitz, separates the layers of the mesocolon, and its mouth is usually at the junction of cæcum and colon, and looks forwards and downwards. It is usually quite small, but occasionally may be as large as a finger. A retrocolic hernia due to a developmental anomaly is usually into a modification of this fossa.

Richard Berry confirms Jonnesco's work on the fossæ, and states: "When both fossæ are present three peritoneal folds are required for their formation; these are from without inwards: 1. External parietocolic fold or outer layer of the ascending mesocolon. 2. Internal parietocolic fold or inner layer of ascending mesocolon. 3. Mesenterico-parietal fold or abdominal attachment of the enteric mesentery internal to the mesocolon."

Comparative anatomy of the retrocolic fossæ.—The process of secondary adhesion of the ascending colon to the posterior abdominal wall, to be shortly described, is an adaptation to the upright position, and the retrocolic fossæ are therefore only found in orthograde primates.

Development of the retrocolic fossæ.—With regard to this there are two principal theories—viz., that they are either (*a*) primary or (*b*) secondary in origin. (*a*) The primary origin. Treitz, Gruber, and Lockwood held that during the descent of the testis the gubernaculum exerted its influence upon the cæcum as well, causing its descent into the right iliac fossa, and that this descent by dragging upon the peritoneum caused the formation of the folds bounding the fossæ. Waldeyer held that the cæcum continues to descend after the ascending colon has become fixed, and thus raises up the peritoneum in the form of two folds which bound the retrocolic fossæ. (*b*) The secondary origin. The theory of secondary formation of Toldt states that the retrocolic fossæ are due to a secondary or delayed adhesion of the ascending colon, cæcum, and ileocæcal angle to the posterior abdominal wall. This theory is probably the correct one, and it will be seen that it has an important bearing on the developmental form of retrocolic hernia.

Abstract of symptoms of retrocolic hernia.—According to Moynihan the symptoms appear rapidly and are those of sudden strangulation of the bowel—viz., severe pain in the abdomen, followed by vomiting and absolute constipation. In two of the cases there were previous abdominal symptoms. In Atherton's case the patient had complained of pain and tenderness in the right iliac region for some time, which led to a diagnosis of chronic appendicitis. In the case recorded by Mansell Moullin there was a history of four previous attacks similar to the one that led to operation. Diagnosis is rarely possible, although in a case of Rieux a swelling was present on the inner side of the cæcum, which was smooth and rounded and was tympanitic on percussion, and which led to a correct diagnosis.

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[1] Moynihan: Retroperitoneal Hernia.

[2] R. Berry: The Cæcal Folds and Fossæ.

[3] Lockwood: Appendicitis, its Surgery and Pathology.

[4] Lockwood and Rolleston: On the Fossæ round the Cæcum and the Position of the Appendix, with Special Reference to Retroperitoneal Hernia, Journal of Anatomy and Physiology, vol. xxvi., 1892.

Case of Aschoff. A coil of intestine was found in a pouch behind the cæcum and ascending colon. The ascending colon had a very long mesentery.

Case of Mansell Moullin. On passing a finger down towards the cæcum a ring was felt around some intestine. It passed inwards towards the middle line and slightly downwards. At post-mortem examination a loop of ileum was found lying in a sac behind the cæcum, communicating with the general peritoneal cavity by an opening a little more than an inch in diameter.

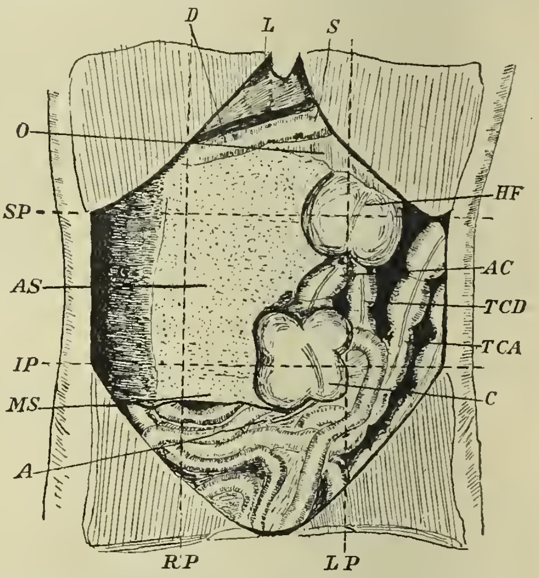
Case of Neumann. A loop of small intestine 10 cm. in length was found to be strangled in the retrocolic fossa. On lifting up the cæcum a rounded opening with sharp-edged margin was seen which would admit two fingers. This led to a peritoneal pouch extending upwards behind the ascending colon.

Case of Funkenstein. At post-mortem examination an opening was found behind the cæcum with rounded, firm edges 2 cm. in diameter. Through this the finger could be passed into a sac running up behind the cæcum and ascending colon as far as the upper margin of the ilium.

Case of Atherton. Post-mortem examination showed that the cæcum was distended and the lower two feet of ilium collapsed; at this point resection had been made. There was a pouch one inch deep with an opening of the same diameter situated to the outer side of the lower end of the cæcum and partly behind it.

Case of Fürst. This deserves a little more attention, as it has been the subject of a great deal of controversy. Fürst himself considered it a case of retrocolic hernia due to a developmental abnormality. There can be little doubt, having regard to its similarity to the case to be presently described, that he was correct. The case recorded by Fürst came to light in the body of a man aged 61, in the dissecting room. A large peritoneal sac was present occupying the right hypochondriac, right lumbar, and part of the umbilical regions. The cæcum was below the umbilicus, and it and the ascending colon were both on the inner wall of the sac. The rest of the large intestine was pushed well over into the left side of the abdomen. The sac contained two-thirds of the small intestine, the entering coil of which was jejunum just beyond the duodeno-jejunal flexure. Brösike considered that the case was one of hernia into the parajejunal fossa which is present when the jejunum is fixed in the peculiar manner described by him, and that the hernia had developed in an abnormal manner owing to a free common mesentery to the cæcum and ascending colon and to migration of the mouth of the sac. It is unfortunate that Fürst gives no full account of the duodenum and commencement of jejunum. Nevertheless, it is in all probability a case of retrocolic hernia due to incomplete rotation of the U-shaped loop of intestine.

Author's case.—This came to notice in the dissecting-room. The subject was a man, aged 75, whose death was due to senile degeneration of the heart. On opening the abdomen (see diagram) a broad, apron-like fold was seen stretching across the greater part of the right side of the abdomen. Further examination showed that the fold of peritoneum was the anterior wall of a hernial sac, and had the following boundaries. On the left side it was attached to the "hepatic" flexure of the colon, ascending colon, and cæcum. Superiorly it was attached to the lower border of the first part of the duodenum and became adherent to the right edge of the great omentum. On the right side it bulged somewhat and became continuous with the peritoneum over the right kidney and iliac fossa. Inferiorly it presented a free edge which was by no means tense, and it was devoid of any vessel. The lower free edge ran in the interspinous plane and was attached laterally to the peritoneum over the right psoas muscle, and internally to the posterior surface of the appendix and meso-appendix. The anterior wall of the sac occupied the following regions (see diagram): Lower half of epigastric region in its right two-thirds, right two-thirds of umbilical region, the right lumbar and hypochondriac regions, and the upper third of the right iliac and hypogastric regions.



Sketch of appearance on opening abdomen. D, Duodenum (first part). L, Liver. S, Stomach. O, Great omentum. SP, Subcostal plane. AS, Anterior wall of sac. IP, Intertubercular plane. MS, Mouth of sac. A, Appendix. RP, Right latero-vertical plane. LP, Left latero-vertical plane. HF, Hepatic flexure of colon. AC, Ascending colon. TCD, Transverse colon, descending limb. TCA, Transverse colon, ascending limb. C, Cæcum.

The large intestine.—(*a*) Cæcum. The position of this was most unusual. The whole viscus was rotated and kinked, so that the posterior surface looked directly forwards and the anterior surface was in contact with and partly hid from view the ascending colon. The lower border of the cæcum thus was only separated from the hepatic flexure of the colon by a very short distance. The anterior surface of the cæcum was also in very close proximity to the middle of the transverse colon (*q.v.*) and bound down to it by a prominent peritoneal adhesion. The upper two-thirds of the cæcum occupied the lower and left quadrant of the umbilical region; the lower third occupied the upper left quadrant of the hypogastric region (see diagram).

(*b*) Appendix. Occupied the upper left quadrant of hypogastric region; pointed downwards and backwards, but chiefly inwards, so that the tip exactly reached the mesial plane a third of the distance between the symphysis pubis and intertubercular plane. Length 3 cm. Meso-appendix reached the tip and was thick and fatty.

(*c*) Ascending colon. Commenced at the points of intersection of the central plane and the intertubercular plane, and ran upwards and to the left to the hepatic flexure. Length 2·2 inches; it was adherent to the post-abdominal wall, and had attached to its right side the above-mentioned fold.

(*d*) Hepatic flexure. The intersection of the left lateral vertical and subcostal planes occurred in the centre of this, which therefore occupied the adjacent parts of the following regions—epigastric, left hypochondriac, umbilical, and left lumbar zones.

(*e*) Transverse colon consisted of two limbs, a descending and an ascending. The descending ran from the hepatic flexure following the left lateral plane as far as the brim of the pelvis; the ascending limb passing upwards and outwards in the left iliac and lumbar regions to splenic flexure. The kink in the transverse colon lay over the brim of the pelvis and was connected to the anterior surface of the cæcum in the aforementioned way. The mesentery of the transverse colon was not connected with the posterior layers of the great omentum, but was connected by somewhat loose adhesion to the mesenteries of the descending and iliac colon.

(*f*) Descending and iliac colon. Each pursued a fairly normal course, but there was a mesentery common to both attached near the middle line to the posterior wall of the abdomen.

(*g*) The great omentum had the usual attachments but was pushed over into the left side of the abdomen and ended in a long pointed process.

(*h*) Liver and stomach were normal in their position.

Appearances on opening the sac.—On opening the sac it was seen to extend upwards beneath the right lobe of the liver, and it was seen at once that the condition was due to a developmental abnormality. On the floor of the sac could be seen the root of the mesentery, which was attached along an oblique line stretching from the junction of the first and second parts of the duodenum downwards and to the left to the termination of the ileum. Its length was about 6 inches. Some 5 feet of small intestine, presenting a perfectly normal appearance, were also found in the sac. The second part of the duodenum, which was also in the floor of the sac, had a continuation of the mesentery attached to its left side, but was adherent behind to the posterior abdominal wall in a fairly normal way. The third part of the duodenum was freely movable, having a common mesentery with small intestine from which it was indistinguishable. It was not crossed by the superior mesenteric artery, neither was there any trace of a duodeno-jejunal flexure. The whole length of the small intestine was only 9½ feet.

Developmental considerations.—At an early stage of development the intestine is a straight tube of nearly uniform calibre attached to the posterior abdominal wall by a continuous mesentery. The growth of the liver and intestine causes the mid-gut—i.e., that portion between the entrance of the common bile-duct into the duodenum and the splenic flexure—to form a U-shaped loop, which is forced through the widely open umbilicus into the umbilical cœlom. To the convexity of the loop is attached the vitelline stalk, which may persist as a Meckel's diverticulum. The mesentery of the loop is continuous anteriorly with the dorsal mesogastrium and posteriorly with the hind-gut mesentery. Running in the loop mesentery is the superior mesenteric artery, which divides the mesentery into a pre-arterial and a post-arterial part. This condition may be seen at the fifth week. The pre-arterial part of the mesentery is destined to form the greater part of the mesentery of the small intestine; the post-arterial part forms the mesentery of the ascending and transverse colon and the lower part of the mesentery proper. At the seventh week a rotation of the U-shaped loop occurs round the axis of the superior mesenteric artery, so that the distal limb of the loop, which is destined to become the ascending and transverse colon principally, comes to lie in front of the proximal limb from which the greater part of the small intestine is formed. This process goes on to such an extent that the rapidly growing proximal limb sweeps under the distal limb and comes to lie on its left side. Just before rotation commences an evagination appears on the distal loop which is the first rudiment of the cæcum, and when the process is completed this organ lies in the right hypochondrium under the liver. The rotation brings the transverse colon against the duodenum and its mesentery, in which lies the head of the pancreas. The pressure causes the duodenal mesentery to adhere to the posterior abdominal wall, and the duodenum and pancreas become fixed, so that the superior mesenteric artery comes to lie in front of the third stage of the duodenum. The continued growth of the small intestine presses the descending and iliac colon with their mesenteries against the peritoneum of the posterior abdominal wall, and secondary adhesion takes place between them, so that normally these parts of the large intestine have no mesentery.

Application of these facts to the case under consideration.—In all probability rotation of the U-shaped loop ceased at the point where the distal limb lay in front of the proximal limb. Secondary adhesion of the distal limb—the future ascending colon—to the peritoneum of the posterior abdominal wall occurred early and imprisoned the proximal limb of the loop from which the greater part of the small intestine is formed. Thus the cæcum was prevented from swinging upwards and to the right to its position beneath the liver. The small intestine developed towards the right chiefly, and in its growth pushed the large intestine to the left side of the abdomen. The peritoneum connecting the right part of the posterior surface of the ascending colon to the posterior abdominal wall (right layer of ascending mesocolon or right parietocolic fold) became greatly stretched and formed the anterior wall of the sac. The abnormal position in which the small intestine developed accounts for its extreme shortness and also explains why the descending and iliac colon have both a mesentery. The form of the duodenum, the presence of its mesentery, the absence of the duodeno-jejunal flexure, and the position of the superior mesenteric artery all show that rotation stopped at the above-mentioned stage. The conclusion is, therefore, that this form of hernia is due to an abnormality of development occurring at a very early stage.

My thanks are due to Professor Edward Fawcett for kind suggestions during the preparation of this article.

HÆMORRHAGIC TYPHOID FEVER.

BY ADRIAN CADDY, M.D., B.S. LOND., F.R.C.S. ENG.;
AND
BARRÉ MOLONY, M.B., CH.B. EDIN., F.R.C.S. EDIN.

DURING the past two years we have had under our care three interesting cases of typhoid fever, two of the cases developing very unusual symptoms. In the first case during the course of the fever there developed an extensive purpuric eruption, which was followed by a generalised bleeding from the mucous membranes—viz., the tongue, gums, bladder, and intestines. In the second case hæmatemesis occurred while the fever was at its height. This happened on three occasions, together with bleeding from the bowel. The third case was one of intestinal hæmorrhage complicating typhoid fever and ending in recovery. All these cases occurred in private among Europeans who, while not new to the country, yet had not resided in India for more than a few years and were living under good conditions. The following are the clinical histories of the cases.

CASE 1.—The patient, a European aged 38, came to our consulting-rooms one evening (Sept. 28th, 1912), complaining of fever and saying that he had been ill with fever for about a week at Dacca. We examined him, found his temperature was 104° F., sent him to bed in the hotel where he was staying, and put him on large doses of quinine, 30 grains daily. As he did not improve we removed him to a nursing home two days later. His fever continued high, varying from 102° to 104°, but otherwise there was no point of special interest. The quinine was discontinued after he had taken 30 grains daily for a week, as it had not had any influence on the fever. This course of quinine excluded the possibility of any malarial infection. The blood was now tested by the health department of the corporation, and Widal's reaction for typhoid fever proved positive. On Oct. 5th some bleeding from his gums was noticed. On the 6th a purpuric eruption started on his legs and gradually spread all over his body, the spots remaining discrete and varying in size from a pin's head to that of a pea. The spots kept on coming out until his death. On the 7th a hæmorrhage occurred into his bladder. This bleeding was so severe that clots formed and the bladder was washed out to get rid of them. On the 9th there was a big hæmorrhage from the bowel. A small pin-point on the dorsum of the tongue started oozing freely. On the 10th there were further hæmorrhages from the gums and intestines, and he gradually sank and died the next day.

CASE 2.—The patient, aged 30, a European overseer employed in a jute mill eight miles from Calcutta, was admitted by us into a nursing home with the following history. He had been suffering from fever since Sept. 16th, 1912, but continued his work until the 22nd, the day he saw us. In the nursing home the fever continued, varying from 101° to 103° F., and was uninfluenced by quinine in quantities of 30 grains daily continued for a week. The blood was tested and Widal's reaction for typhoid fever found positive. The temperature touched normal on Oct. 7th, the pulse having varied from 70 to 90 during this period. The temperature remained intermittent for a few days, and then commenced rising again, reaching 104° on the evening of the 11th. Quinine was again started in doses of 20 grains daily without effect. On the 14th the temperature dropped to 100°, and the pulse rose to 120 per minute; this was followed by his bringing up a large amount of blood. It was a little uncertain whether it was vomited or coughed up. On the 15th he brought up more bright red blood; this time there was no doubt that he vomited it; also he passed bright red blood by the bowel. This vomiting and passing of blood continued during the next two days, the temperature varying from 100° to 104°. He died on the 18th, after another large hæmorrhage from the bowels.

CASE 3.—The patient, a European aged 24, an employee in a jute mill, was admitted into a nursing home under our care on March 30th, 1914, with a history of having suffered from fever for six days. When we saw him his temperature was 104° F. During the next two weeks it varied from 101° to 103·5°. We gave him quinine in quantities of 30 grains daily for five days, and then stopped it, as the temperature was going up and the quinine seemed to be causing diarrhœa. On the twelfth day of the fever Widal's reaction for typhoid fever was positive. His fever continued steadily with some diarrhœa for 22 days. The temperature then shot up to 105·6°. Sponging rapidly brought this down to 102°. In the course of a few hours his temperature fell to normal, and this was followed by a hæmorrhage from the bowel. These bowel hæmorrhages occurred on five occasions during the next four days and his condition became very serious. Then he gradually took a turn for the better. The temperature in the course of ten days came to normal. The diarrhœa ceased, the bowels became constipated and had to be relieved by enema. His temperature has now (June 10th) been normal for three and a half weeks; he is sailing for Japan in a day or so for a sea voyage to complete his recovery.

Remarks by DR. CADDY.—It will be noted that in each case the patient was forthwith put on to a course of quinine. Although malaria is uncommon in Calcutta, still two of the cases developed their fever at the period of the greatest incidence of malaria in the year—viz., September. None of the cases actually resided in the city of Calcutta, two of them living eight miles outside, and one coming from Dacca, over 100 miles away, where malaria is much more prevalent.

It is very uncommon for Europeans living in the English quarter of Calcutta to get infected by malaria. Europeans who perform all their service in Calcutta without ever living in other parts of India generally escape malarial infection. One might say that all cases of fever coming from the country districts are put on a course of quinine forthwith. It is uncommon to find malarial parasites in Europeans; so habitually do they dose themselves with quinine for slight colds and chills, that the parasites are driven out of the peripheral circulation. The quinine is given in doses of 30 grains daily in solution for five days. If the temperature has not fallen to normal in that time, one may exclude the probability of malarial infection. The dose of quinine required to reduce a malarial temperature to normal was worked out some seven years ago at the General Hospital, Calcutta. It was found that if only 20 grains daily were given to an uncomplicated case of malaria the fever took a week to abate. If, however, 30 or 40 grains were given daily the temperature came down to normal in four days. A still further increase in the dose to 60 grains daily did not shorten the period any further, and in addition was in the danger zone of quinine blindness.

This quinine treatment in cases which eventually prove to be typhoid often seems to me to aggravate the disease. The headache is made worse, the stomach is often irritated, and diarrhœa is brought on. But one is on the horns of a dilemma. If suspicions are correct and the case turns out to be typhoid all is well. On the other hand, one must bear in mind that the common malarial infection is malignant tertian. I once saw an English army officer die through omission to give quinine. The patient had fever; the blood was examined by his medical attendant and no parasites found. Three days latter he became comatose; parasites were then found in large numbers in his blood by another medical man. In spite of quinine solution being given intravenously he died.

As regards purpura complicating typhoid and hæmorrhagic typhoid fever we have been able to find very few references in current literature. Sir Thomas Barlow[1] has described a case of typhoid fever with extensive purpura, some of the mucous membranes being affected. The patient passed into a state of coma lasting 48 hours, but subsequently recovered. She died later from a relapse of the fever, and there was found a large hæmorrhage in the subarachnoid space, also hæmorrhages into the mediastinum and retroperitoneal tissues. The best description of a case of hæmorrhagic typhoid fever is given by Goodall.[2] His case is very similar to our own. His article contains several references to the current literature on the subject. In his own experience of 1733 cases in 11 years at the Eastern Fever Hospital, Homerton, he only saw one marked case. In 14 other cases hæmorrhage other than intestinal had occurred, affecting the fauces, nose, pleura, lungs, conjunctiva, mesentery, and uterus. All but 3 of the 15 cases died. Hence he thinks that a purpuric or petechial eruption is of grave import in typhoid fever.

In THE LANCET[3] is quoted a paper by Pissavy and Gauchery, of Paris, describing a case of typhoid fever complicated by acute hæmorrhagic nephritis. These authors found records of five similar cases in the "Thèses de Paris." McCrae[4] in a series of 1500 cases at the Johns Hopkins Hospital had only

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[1] Barlow: Royal Society of Medicine, vol. i., p. 122, Clinical Section.
[2] Goodall: Clinical Society's Transactions, vol. xxxvi., 1903, p. 135.
[3] THE LANCET, 1911, vol. i., p. 180.
[4] McCrae: Osler and McCrae, System of Medicine.

3 cases of hæmorrhagic typhoid fever—that is to say, cases in which bleeding occurred from various parts of the body. In this same series purpuric spots were noted in 38 cases. In the majority of these rose spots first appeared which later became hæmorrhagic. In 9 of these cases the rash was regarded as hæmorrhagic, 3 of them being the hæmorrhagic type noted before.

Remarks by Dr. Molony.—In discussing the question of treatment (other than dieting and nursing) of these cases one must think of them as examples of two different types of hæmorrhage as it occurs in the course of typhoid fever—viz., (1) due to widespread damage to vessels in different parts of the body; and (2) due to gross damage by ulceration to one or more vessels in the gut. Case 1 is an example of the first type; Cases 2 and 3 are examples of the second type. The aims of treatment (we are not discussing prevention) are, first to stop the bleeding, and secondly to make up for the loss of body fluids.

To stop the bleeding the first essential is to rest the bleeding part. This, as in the third case, may be obtained by administering opium, in the form of pil. plumbi c. opio, 4 grains every three hours. The coagulability of the blood may be increased by giving calcium salts. A patient on three pints of milk per diem has a daily intake of about 100 grains of calcium salts, chiefly in the form of phosphate, in the 24 hours—an amount sufficient, one would think, for his needs. In the second case the hæmorrhages were so sudden and profuse and came from so high up the intestinal tract, possibly from the stomach, that drug treatment was unlikely to be successful. In all future cases one would certainly use emetine hydrochloride as advocated by Low,[5] who reports success from its use in cases of bleeding from cancer of the rectum and from gastric ulcer. In the first case a different line of attack is obviously necessary, but the attack is even more of a forlorn hope than in the other type of case. There seems as little hope of checking the bleeding in this type of case as there is in stopping the hæmorrhage in the last stages of acute lymphatic leukæmia, a condition which Case 1 resembles. One might try normal horse serum, but there is little hope of success.

To make up for loss of body fluids it seems logical that one should transfuse these cases of the second type, and hypertonic saline, as likely to help in increasing the coagulability of the blood, would be the fluid of choice. Against transfusion it may be said that Case 3 made a rapid and complete recovery without it. One doubts very much whether any transfusion could have saved Case 2, so rapid and profuse was the hæmorrhage. As for transfusion in Case 1, the bleeding here seems rather the expression of a profound toxæmia and was merely a contributory cause to the fatal issue, whereas in the other cases the actual loss of body fluid was the chief feature to be combated. In the third case it is interesting to note that a dose of antityphoid vaccine was given the day before the fever started. It is difficult to say whether this influenced the result one way or another.

Calcutta.

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[5] Low: Recent Researches on Emetine, Royal Society of Medicine, Therapeutical and Pharmacological Section, p. 48, March, 1914.

South-West London Medical Society.—The twenty-first annual dinner of this society will take place at the Waldorf Hotel, Aldwych, on Wednesday, Oct. 7th, at 7.45 for 8 p.m. The honorary secretary is Mr. Robert F. Chance, 34, West-side, Wandsworth Common, S.W.

ORAL SEPSIS IN THE DIAGNOSIS AND TREATMENT OF PULMONARY TUBERCULOSIS.

By R. C. WINGFIELD, B.A., M.B. Oxon., M.R.C.P. Lond.,
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The results of the first year's coöperation between the dental and tuberculosis departments at St. Thomas's Hospital have been sufficiently encouraging to make me think them worth recording. Every tuberculosis officer knows the trouble of the doubtful case with its suspicious but indefinite history of loss of weight, occasional irregular pyrexia, cough, and expectoration of muco-purulent sputum, repeated examinations of which fail to demonstrate the presence of tubercle bacilli. The physical signs in the chest, as also the X ray findings, may be suggestive, but at the same time not conclusive of pulmonary tuberculosis, while the complement-fixation test and experimental inoculation of the patient's sputum require some time for their completion; meanwhile the patient, in spite of general tonic and hygienic treatment, may show no signs of improvement, and the original problem, "Is this or is this not a case of early pulmonary tuberculosis?" remains unsolved. Further, one may have the uncomfortable feeling that the time and money of the tuberculosis department are being spent upon patients who are in reality non-tuberculous. It is true the facilities afforded by observation beds often assist the officer in arriving at a proper diagnosis by more careful clinical observation or by the employment of diagnostic injections, but it must be remembered that not only are the doubtful cases too numerous for the application of these procedures, but also many dispensaries are not equipped with observation beds at all. Early diagnosis is important if the disease is to be cured or arrested, but at present no specific method has been discovered whereby the early diagnosis can be made with certainty.

I have found, and I expect many have made a similar discovery, that the routine examination and treatment by an experienced dental surgeon of the mouth of all dispensary patients is not only of value in the treatment of chronic pulmonary tuberculosis, but is also of considerable use in eliminating numbers of doubtful cases. A clean mouth is the exception among the poor, although many of this class, it is true, enjoy good health in spite of the constant septic absorption thereby entailed. But once infection by a chronic debilitating disease such as tuberculosis has occurred, oral sepsis undoubtedly plays a large part in dealing with, and perhaps altogether preventing the acquisition of, that high degree of resistance by which alone a cure can be effected. Chronic cases with a tendency to relapse who have had full sanatorium treatment require the greatest care and the best environmental conditions if the working capacity, which after all is of essential importance, is to be maintained; untreated oral sepsis under these conditions may frequently turn the balance adversely for the patient.

The number of cases dealt with during the year in the tuberculosis department of St. Thomas's Hospital is hardly large enough to allow of definite conclusions being drawn as to the efficacy of the radical treatment of oral sepsis in chronic pulmonary tuberculosis, but it is sufficient to give an indication which may be worth while following up.

It will be noticed that out of the 41 cases collected 21, or roughly 50 per cent., were diagnosed as ? pulmonary tuberculosis—that is to say, they were sent to the dispensary as tuberculous patients, and though the diagnosis could not be definitely proved it is probable that in some of the cases at any rate it was correct. This being so, seeing that all these patients had severe degrees of oral sepsis, the supposition arises that oral sepsis may play an important part in determining the reaction to infection by the tubercle bacillus. For in an overwhelming majority of cases a man with a clean mouth must be in a better state of health than a man with a dirty one, and perfect health is our greatest asset when we have to deal with tuberculous infection.

The coöperation between the two departments mentioned above is not so easy in actual practice as it sounds. The first difficulty is to get the patient to see the dentist at all. This can best be got over by arranging for the dental surgeon to examine the patients in the dispensary at the time of their ordinary attendance to receive medical treatment. If this is not done it is generally found that nothing short of raging toothache will induce the patient to have his teeth seen to. The second difficulty consists in persuading the patient to submit to the treatment advised, and is less easily surmounted. The ordinary patient employs two criteria and two only in judging of the soundness or otherwise of his teeth, and if they both enable him to bite his food and cause him no pain he supposes them to be healthy. One can hardly be surprised, therefore, if he hesitates to have what he believes to be healthy teeth extracted in bulk for a condition of his gums which he can neither understand nor appreciate. Sternness in refusing all treatment until the oral condition has been dealt with is the best method of overcoming this difficulty, while a great deal can be done by getting patients who have derived benefit from the removal of their teeth to talk to the more refractory cases.

TABLE I.—*Cases of Chronic Pulmonary Tuberculosis which showed Improvement.*

No.	Age and sex.	Diagnosis.	Condition, and how treated.	Result.	Weight, how affected.
1	33, F.	C.P.T. *	Pyorrhœa. Septic teeth removed.	Improved.	Gained 3 lb.
2	45, M.	C.P.T.	Pyorrhœa. All removed.	Marked improvement.	No gain.
3	50, F.	C.P.T.	Pyorrhœa. All removed.	Marked improvement.	Gained 5 lb.
4	49, F.	C.P.T.	Pyorrhœa. All removed.	Marked improvement.	,, 6 lb.
5	40, M.	C.P.T.	Pyorrhœa. All removed.	Improved and restarted work.	No gain.
6	45, M.	C.P.T.	Pyorrhœa. Septic roots removed.	Improved.	Gained 3 lb.
7	55, M.	C.P.T.	Pyorrhœa. All removed.	Improved and restarted work.	No gain.
8	25, F.	C.P.T.	Pyorrhœa. All removed.	Marked improvement.	Gained 1 st.
9	29, M.	C.P.T.	Pyorrhœa. Some removed. (Sanatorium.)	Improved.	,, 7 lb.
10	28, M.	C.P.T.	Pyorrhœa. All removed. (Sanatorium.)	Improved.	,, 4 lb.

* C.P.T. = Chronic pulmonary tuberculosis.

In Table I. are the cases of undoubted pulmonary tuberculosis which improved after the removal of oral sepsis. The disease in all cases was of the chronic type. Two, Nos. 9 and 10, had sanatorium treatment, so that their improvement as the result of dental treatment is not proven. In the other 8 cases there was well-marked improvement, and Nos. 7 and 5, though they did not gain weight, both became well enough to resume the work which

TABLE II.—*Cases of Chronic Pulmonary Tuberculosis which showed no Improvement.*

No.	Age and sex.	Diagnosis.	Condition, and how treated.	Result.
1	32, M.	C.P.T.*	Pyorrhœa. All removed. (Pulmonary tuberculosis active.)	Worse.
2	35, F.	C.P.T.	Pyorrhœa. All removed. (Pulmonary tuberculosis active.)	Died.
3	41, F.	C.P.T.	Pyorrhœa. All removed. (Pulmonary tuberculosis active.)	Unaltered.
4	28, F.	C.P.T.	Septic roots removed.	,,
5	35, F.	C.P.T.	Pyorrhœa. All removed.	Worse.
6	35, F.	C.P.T.	,, ,, ,,	Unaltered.
7	42, F.	C.P.T. Lupus.	,, ,, ,,	,,
8	33, M.	C.P.T. Subacute.	Pyorrhœa. All removed. (Sanatorium. Pulmonary tuberculosis active.)	Worse.
9	21, F.	C.P.T.	Pyorrhœa. All removed.	Unaltered.
10	35, F.	C.P.T.	Septic roots removed.	No marked improvement.

*C.P.T. = Chronic pulmonary tuberculosis.

TABLE III.—*Cases of (?) Chronic Pulmonary Tuberculosis which showed Improvement after Radical Treatment for Oral Sepsis.*

No.	Age and sex.	Diagnosis.	Condition, and how treated.	Result.	Weight, how affected.
1	30, M.	? C.P.T.*	Pyorrhœa. All removed.	Discharged well.	Gained 8 lb.
2	30, F.	General debility. ? C.P.T.	Pyorrhœa. All removed.	Discharged well.	,, 3 lb.
3	30, F.	General debility. ? C.P.T.	Pyorrhœa. All removed.	Discharged well.	No gain.
4	33, F.	? C.P.T.	Pyorrhœa. All removed.	Marked improvement.	Gained 12 lb.
5	27, M.	? C.P.T.	Pyorrhœa. All removed.	Marked improvement and restarted work.	,, 4 lb.
6	35, M.	? C.P.T. B. & E.†	Pyorrhœa. All removed.	Marked improvement.	No gain.
7	37, F.	Chronic broncho-pneumonia.	Pyorrhœa. All removed. Influenza vaccine ? due to teeth ‡	Marked improvement.	,,
8	35, F.	? C.P.T.	Pyorrhœa. All removed.	Improved.	,,
9	30, F.	? C.P.T.	Pyorrhœa. All removed.	Improved. Ceased to attend.	,,
10	47, F.	? C.P.T.	Pyorrhœa. All removed.	Improved. Ceased to attend.	Gained 4 lb.
11	30, M.	General debility. ? C.P.T.	Pyorrhœa. All removed.	Improved. Started work again.	,, 3 lb.
12	47, M.	B. & E. ? C.P.T.	Pyorrhœa. All removed.	Marked improvement.	,, 8 lb.
13	37, F.	Bronchitis. ? C.P.T.	Pyorrhœa. All removed.	Quite well.	,, 1 st. 2 lb.
14	35, F.	Pleurisy. ? C.P.T.	Pyorrhœa. All removed.	,,	,, 1 st.
15	39, F.	? C.P.T.	Pyorrhœa. All removed.	Marked improvement.	,, 3 lb.

* C.P.T. = Chronic pulmonary tuberculosis.
† B. & E. = Bronchitis and emphysema.
‡ Did not improve till date of vaccine commencement.

they had given up some months previously—a more important criterion of improvement than weight.

Table II. shows the cases of undoubted pulmonary tuberculosis which did not improve after the mouth was cleaned. Six out of the 10 cases remained unaltered. In 4 the steady progress of the disease was in no way arrested. In these 4 cases the disease was active. In no case did dental treatment appear to have a definitely bad effect on the patient.

Table III. shows 15 cases of doubtful pulmonary tuberculosis which improved after radical treatment for oral sepsis. Perhaps none of these cases were tuberculous. Most of the patients have been discharged well or have ceased to attend of their own accord. One of the most striking cases was No. 13. This woman had been under treatment for years at different institutions, her case always being diagnosed as "? pulmonary tuberculosis." No. 7 should, perhaps, not be included in this list. This patient was suffering from a chronic influenzal infection, and though her mouth was in a very bad state and was cleaned, there was no improvement until the case was treated with a vaccine of the influenza bacillus which was isolated in pure culture from the patient's sputum.

TABLE IV.—*Cases of Doubtful Pulmonary Tuberculosis which did not show Improvement after Dental Treatment.*

No.	Age and sex.	Diagnosis.	Condition, and how treated.	Result.
1	33, F.	? Syphilis. ? C.P.T.*	Pyorrhœa. All removed.	No marked improvement.
2	33, F.	Chronic bronchitis.	,,	No improvement.
3	40, F.	? C.P.T.	,,	,,
4	45, F.	? C.P.T.	,,	,,
5	22, F.	? C.P.T.	,,	,,
6	30, M.	General debility. ? C.P.T.	,,	,,

* C.P.T. = Chronic pulmonary tuberculosis.

Table IV. is a list of the cases of doubtful pulmonary tuberculosis which did not show any improvement after dental treatment. These patients may be those who are really tuberculous.

The numbers in Tables III. and IV.—viz., out of 21 patients 15, or 74 per cent. roughly, showing well-marked improvement—have been sufficiently encouraging to lead me to turn my attention more thoroughly this year to the eradication of oral sepsis in my patients with already increasing good results.

Last year 150 cases were examined and treated by the dental surgeon in the department, but in this article I have only dealt with those cases in whom the report was "Sepsis; advised removal of all," and on whom the treatment was fully carried out. My thanks are due to Mr. R. McKay and his assistant, Mr. W. H. Dye, who have given such an immense amount of time and trouble to the dental treatment of my cases.

LIVERPOOL SCHOOL OF TROPICAL MEDICINE.—The chairman, Mr. F. C. Dawson, and committee, of the Incorporated Liverpool School of Tropical Medicine, have issued invitations to a luncheon at the Adelphi Hotel, Liverpool, on Thursday, July 23rd, at 1 P.M., to meet Sir Thomas Barlow, President of the Royal College of Physicians of London, on the occasion of the opening of the Sir Alfred Jones Tropical Ward of the school. The ceremony will be performed at the Royal Infirmary by the Countess of Derby at noon.

AURICULAR FLUTTER FOLLOWED BY PAROXYSMAL AURICULAR FIBRILLATION.

BY E. B. GUNSON, M.D. EDIN., M.R.C.P. LOND.

(From the Cardiac Department, London Hospital, E.)

AURICULAR flutter is a condition in which the normal auricular contractions are replaced by rhythmical contractions arising at a greatly increased rate from an abnormal focus in the auricle. Some degree of heart block is usually present, the ventricle responding in many cases to alternate auricular impulses; in other cases the response is less frequent. A varying block may result in an irregular pulse.

In auricular fibrillation the auricular contractions are replaced by a continuous fibrillary movement of the auricle. The ventricular response is haphazard and gives rise to complete irregularity of the pulse.

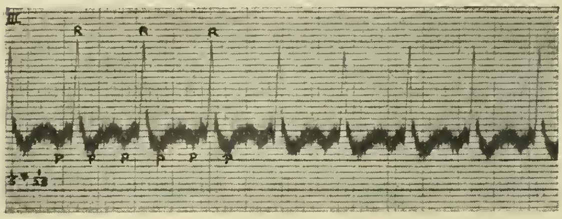
By means of the electrocardiograph it is easy to recognise these two conditions. The contracting heart muscle gives rise to an electric current, which is conveyed to a string galvanometer by means of two wires connected with the patient's body. The current produces deflections of the string, which are recorded on a moving photographic plate. From this plate the electrocardiogram is printed. In the illustrations the rise P corresponds to the auricular systole, the rises R and T to the ventricular systole. The P–R interval, the measure of the time occupied by the passage of the impulse from the auricle to the ventricle, is normally less than one-fifth of a second.

In all probability the majority of cases of paroxysmal tachycardia are due either to auricular flutter or to auricular fibrillation. The present case is an illustration not only of this fact, but it also shows the close relationship which exists between the two conditions.

The patient, aged 68, was admitted to the London Hospital on August 25th, 1913, under the care of Dr. James Mackenzie. Fifty-two years ago, when aged 16 years, he had an attack of acute rheumatism and was an in-patient of St. Bartholomew's Hospital. Four years later, when aged 20, he had a second attack of acute rheumatism and was an in-patient of the London Hospital. On discharge he had a systolic murmur at the base, but no other abnormal physical signs. Forty years ago, when aged 28, he had ague. For the past 25 years he had suffered from a winter cough, which had become more severe in recent years. Six years ago, when aged 62, he had pneumonia. He had been unable to work for four years owing to præcordial pain, which was readily induced by exertion and accompanied by a "choking sensation." General weakness and shortness of breath had gradually developed during the same period. For 15 months he had been subject to severe anginal attacks. The pain, which was accompanied by a tightness in the chest and a feeling of suffocation, affected the upper part of the chest, especially the second left interspace, and extended down the inner side of the left arm to the ring and middle fingers.

On August 5th, 1913, an electrocardiogram showed a normal rhythm and a rate of 105 per minute. On the 11th the patient complained particularly of attacks of pain in the chest. His colour was good; there was no œdema. The apex beat was not palpable. Deep cardiac dullness extended an inch to the right and 5 inches to the left of the middle line. A systolic murmur was present at the mitral, aortic, and tricuspid areas. The rhythm was not noted. The liver dullness extended 3 inches below the costal margin. On the 25th the patient complained that the pain had persisted, had increased in severity, and had interfered with sleep. He was pale and dyspnœic, and had an anxious expression. He was at once admitted to the ward. The radial pulse was regular, with a rate of 155 per minute. An electrocardiogram showed the presence of auricular flutter, with 2 : 1 heart block. (See Fig. 1.) The apex beat was palpable in the sixth space, 6 inches from the mid-line. Deep cardiac dullness extended 1½ inches to the right and 6 inches to the left of the mid-line. The heart sounds were present and unaccompanied by murmurs. There was dullness at the base of the left lung; crepitations were present at both bases; rhonchi were general. The liver extended 4½ inches below the costal margin. There was no œdema. The urine contained a thick cloud of albumin. The Wassermann reaction was positive.

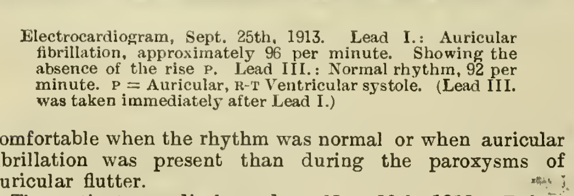
Fig. 1.



Electrocardiogram, Oct. 30th, 1913. Auricular flutter with 2 : 1 block. Auricles 320 per minute. Ventricles 160 per minute. The rise P indicates the auricular systole and the rises R and T the ventricular systole.

Course.—Polygraphic tracings were taken daily and electrocardiograms were taken when the nature of the rhythm was doubtful. Respirations numbered 20 to 30 per minute. The quantity of urine varied from 30 to 70 ounces per diem, the large amount being recorded after digitalis administration. The albumin diminished in amount and disappeared before discharge. The temperature remained normal and subnormal throughout. For several days after admission the patient's symptoms of distress persisted and he occasionally had Cheyne-Stokes respiration. Deep cardiac dullness and liver dullness increased slightly. On Sept. 1st digitalis was given for the first time. On the 4th, 10 days after admission, coincident with the onset of auricular fibrillation, the patient was distinctly more comfortable. He had then taken 2½ drachms of tincture of digitalis. After this date paroxysms of auricular fibrillation were frequent. The patient did not know when the changes in rhythm occurred, and they were not accompanied by any definite change in the other physical signs, but he was more comfortable when the rhythm was normal or when auricular fibrillation was present than during the paroxysms of auricular flutter.

Fig. 2.

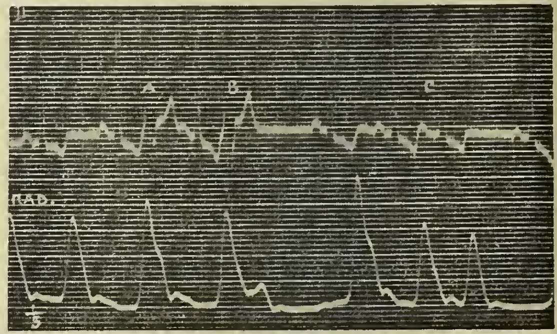


Electrocardiogram, Sept. 25th, 1913. Lead I.: Auricular fibrillation, approximately 96 per minute. Showing the absence of the rise P. Lead III.: Normal rhythm, 92 per minute. P = Auricular, R-T Ventricular systole. (Lead III. was taken immediately after Lead I.)

The patient was discharged on Nov. 30th, 1913. Before this he was able to walk about the ward with but slight shortness of breath. There was no œdema and no ascites. Deep cardiac dullness extended 1½ inches to the right and 4½ inches to the left of the mid-line, compared with 1½ inches and 6 inches on admission. Liver dullness extended 2 inches below the costal margin, as compared with 4½ inches on admission. The pulse-rate was 87 per minute and the rhythm normal.

Changes in cardiac rhythm.—During his stay in hospital from Oct. 25th until Nov. 30th the patient showed a great variety of cardiac irregularities. There were two paroxysms of tachycardia due to auricular flutter. The first attack continued from August 25th until Sept. 4th, the second from Oct. 28th until Oct. 31st. There were two paroxysms of tachycardia, with a radial pulse-rate of 150 per minute, during which auricular flutter was suspected, but of which conclusive records were not obtained. There were 13 paroxysms of auricular fibrillation, the offset of two paroxysms being recorded. (See Fig. 2.) The first paroxysm was the longest and continued for nine days; the shortest lasted for three and a half hours. Premature auricular contractions, premature ventricular contractions, and interpolated extra-systoles all occurred when the rhythm was otherwise normal. (See Fig. 3.) Alternation of the pulse was frequently present during flutter and also during periods of normal rhythm. The various changes which occurred in the heart's rhythm, and their relation to digitalis administration, are shown in the accompanying table.

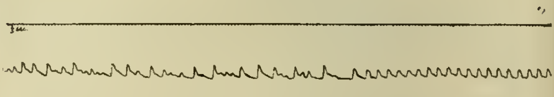
Fig. 3.



Electrocardiogram, with radial tracing, Sept. 17th, 1913. A, Premature and interpolated ventricular contraction. B, Premature ventricular contraction. C, Premature auricular contraction.

On Dec. 4th, four days after discharge, the severe thoracic pain returned, extending down into both arms, especially the left, leaving the fingers numb. The pain persisted; it was accompanied by shortness of breath, and soon followed by œdema of the legs. On examination at his home on the 17th the patient was dyspnœic and in great pain. There was moderate œdema of the legs. The liver extended 4 inches below the costal margin. The heart sounds were distinct at all areas; no murmurs were heard. A radial tracing showed a regular rhythm of 140 per minute. Pulsus alternans was present. On the 26th the patient was again seen at his home. Thoracic and abdominal pain had been very severe since the last visit. The heart sounds were unchanged. Radial tracings only were obtained and showed a regular rhythm of 136 per minute, with pulsus alternans. No irregularity of the pulse was noted by the medical attendant at subsequent visits. The patient became gradually worse and died on Jan. 1st, 1914. No necropsy was obtained.

Fig. 4.



Radial tracing, Sept. 25th, 1913. Offset of auricular fibrillation. Rate during auricular fibrillation approximately 110 per minute. Rate during each of five successive periods of six seconds, after the onset of normal rhythm, 88, 90, 92, 94, and 92 per minute.

Summary.—A fatal case of myocardial failure has been described in which auricular flutter gave

Date.	Digitalis.	Instrumental records.	Radial pulse.	Rhythm.
1913.			Per min.	
Aug. 5	None.	Electrocardiographic. E.C.*	105	Normal.
Aug. 25 to Sept. 1.	,,		150–160	Auricular flutter; 2 : 1 block.
Sept. 1.	ʒ ss. tr. dig.	—	—	—
,, 2–3.	ʒi. tr. dig.	Polygraphic.	160–170	Auricular flutter; 2 : 1 block.
,, 4.	ʒi. tr. dig.	Polygraphic. E.C.	100	Auricular fibrillation.
,, 6–9.	ʒi. tr. dig.	Polygraphic.	65–75	,,
,, 11.	None.	Polygraphic. E.C.	66	,,
,, 12.	,,	Polygraphic. E.C.	82	Normal.
,, 17–24.	,,	Polygraphic. E.C. (See Fig. 3.)	75–80	Normal. Numerous premature contractions, auricular, ventricular, and interpolated.
,, 25—10.30 A.M.	,,	No tracing.	100	Normal.
2 P.M.	,,	Polygraphic. E.C.	110	Auricular fibrillation.
3 P.M.	,,	E.C.	90	Normal.
5 P.M.	,,	Polygraphic.	144	Auricular fibrillation.
10 P.M.	,,	Polygraphic. (See Fig. 4.)	110	Auricular fibrillation. (Offset recorded.)
		E.C. (See Fig. 2.)	92	Normal.
Sept. 26–29	,,	Polygraphic.	90–100	,,
,, 30—11.15 A.M.	,,	,,	150	? Auricular flutter.
1.15 P.M.	,,	,,	126	Auricular fibrillation.
2.45 P.M.	,,	E.C.	104	Normal.
10 P.M.	,,	Polygraphic.	116	Auricular fibrillation. (Offset recorded.)
10.20 P.M.	,,	,,	100	Normal.
Oct. 1—10.30 A.M.	,,	,,	95	,,
3 P.M.	,,	,,	113	Auricular fibrillation.
5 P.M.	,,	,,	150	? Auricular flutter.
Oct. 4—11 A.M.	,,	,,	94	Normal.
9.30 P.M.	,,	,,	138	Auricular fibrillation.
Oct. 5—10.30 A.M.	,,	,,	97	Normal.
Oct. 6—11 A.M.	,,	,,	98	,,
10 P.M.	,,	,,	135	Auricular fibrillation.
Oct. 7.	,,	,,	94	Normal.
,, 8—9 P.M.	,,	,,	146	Auricular fibrillation.
Oct. 9–10.	,,	,,	95–100	Normal.
,, 11—10.20 A.M.	,,	,,	140	Auricular fibrillation.
9 P.M.	,,	,,	91	Normal.
Oct 13.	,,	,,	135	Auricular fibrillation.
,, 14–22.	,,	,,	100	Normal.
,, 23—10.20 A.M.	,,	,,	150	Auricular fibrillation.
9 P.M.	,,	,,	102	Normal.
Oct. 28.	,,	Polygraphic. E.C.	161	Auricular flutter; 2 : 1 block.
,, 29.	ʒi. tr. dig.	Polygraphic.	165	,,
,, 30.	ʒi. tr. dig.	Polygraphic. E.C. (See Fig. 1.)	160	,,
,, 31—11 A.M.	ʒi. tr. dig.	Polygraphic.	112	Auricular fibrillation.
4 P.M.	ʒi. tr. dig.	E.C.	104	Normal.
Nov. 3–30.	Tr. dig. stopped on Nov. 3.	Polygraphic. E.C.	85–95	,,

* E.C. = Electrocardiographic record.

place under digitalis to auricular fibrillation on two occasions. An intervening period of normal rhythm was interrupted by numerous paroxysms of auricular fibrillation.

I am indebted to Dr. John Parkinson for assistance in the preparation of this article.

THE BACILLUS OF BOVINE TUBERCLE AS A FACTOR IN PHLYCTENULAR AFFECTIONS OF THE EYE.[1]

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THE close relationship subsisting between phlyctenular affections of the eye on the one hand and "scrofula" or "struma" on the other has been known from early times, and was mirrored forth in the names "scrofulous" or "strumous ophthalmia" bestowed upon the disease by the older writers. After the discovery by Robert Koch in 1882 of the tubercle bacillus the clinical use of the word "scrofula" or "struma" became much restricted, if not actually abandoned. That tendency, as might be expected, was reflected in the nomenclature of the eye disease under discussion. The suggestion made many years before by the famous Dr. William Mackenzie, of Glasgow, that for the word "strumous" the word "phlyctenular" should be employed was very generally adopted in this country, and is so still. One never hears of "strumous ophthalmia" in England nowadays. Some of us, however, remained keenly alive to the fact that the ocular disease was frequently associated with the symptoms once termed "scrofulous," but now generally spoken of as "tuberculous."

About 14 years ago[2] I published an account of my personal investigations into the etiology of what may conveniently be termed "phlyctenulosis." Among a total of 669 such cases I found tubercle to be present in 214, or 31·98 per cent. A family history of tubercle was obtained in 72 per cent. of about 800 cases of phlyctenulosis. For purposes of comparison this could be got in 49·72 per cent. of 181 non-ophthalmic out-patients at the Evelina Hospital, London, and in 35 per cent. among 200 such children at the Queen's Hospital for Children, London. These facts and some others led me to express the opinion that a well-marked tendency to phlyctenulosis was to be regarded as indicating that the patient was, or was likely to become, tuberculous.

The general accuracy of my figures was borne out by those published by Dr. Vilmos Leitner some five years later.[3] Leitner found scrofulosis to be present in 45·1 per cent. of 371 children with various diseases of the conjunctiva, as against 88·7 per cent. of 585 children with phlyctenular affections of the conjunctiva. A few years later Dr. L. Weekers, of Liége, found active tuberculosis in 36 per cent. of his 156 phlyctenular cases, while a family history of tubercle was forthcoming in 56 per cent.[4] With the introduction of the various biological tests for tubercle, the opinion formed on purely clinical grounds has been confirmed, extended, and strengthened.

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[1] A paper read before the Oxford Ophthalmological Congress on July 10th, 1914.

[2] Medical Press and Circular, Oct. 10th, 1900.

[3] Zeitschrift für Augenheilkunde, July, 1905.

[4] Bulletin de l'Académie Royale de Médecine de Belgique, vol. xxiii., 909, No. 9.

In 1907 I applied the Calmette tuberculin test to the eyes of 6 children, all of whom were affected with long-standing and relapsing ulceration of the cornea, diagnosed as of phlyctenular type.[5] Of these patients two alone manifested obvious tuberculous lesions in other parts of the body. Yet the ophthalmo-reaction was obtained in all of them. Aubaret and Lafon[6] had previously elicited the Calmette reaction in 4 healed cases of phlyctenular disease. Since those early experiments other observers have found that by this method the reaction can be obtained in from 80 to 100 per cent. of the cases of phlyctenulosis.

As regards the injection of tuberculin, in 1907 I obtained a positive general reaction in 4 children suffering from phlyctenulosis. W. Stock[7] had a general reaction in 87 per cent. of 23 patients with phlyctenulæ of the cornea. Weekers[8] obtained a general reaction in 10 cases of phlyctenulosis after the subcutaneous injection of tuberculin, and a focal reaction was observed in 8 of the cases.

The results obtained by Dr. George S. Derby with the von Pirquet method were of considerable importance.[9] Of 43 instances of phlyctenulosis 89 per cent. reacted to the tuberculin, while in nearly 80 per cent. physical examination disclosed evidence of tuberculosis. Weekers[10] obtained a positive cuti-reaction in 91 per cent. of 156 children suffering from phlyctenulosis. In passing, it may be said that the test was positive in only 11 per cent. of the children not affected with phlyctenulosis. The experiments made with von Pirquet's test by Dr. J. A. Jamieson and myself[11] may be briefly quoted. We employed the method in 20 patients, whose ages were from 2 to 12 years, and found that the cutaneous reaction was positive in every instance. A local reaction as regards the conjunctiva or cornea was observed in 8 of the patients. It should be added that 50 per cent. of these patients had more or less obvious signs of tubercle, medical or surgical, while a family history of tubercle was elicited in 75 per cent.

Finally, employing the Moro inunction method, Dr. H. H. Bywater, of Preston,[12] obtained 16 positive results in 16 cases of phlyctenulosis, and Rosenbauch[13] in 50 such cases 96 per cent. of successes.

We may take it, then, that the association between phlyctenulosis and tubercle is proved on both clinical and biological grounds, and can no longer be doubted even by the most sceptical. The connexion, however, has recently entered upon a new and somewhat significant phase. It has been pointed out by Dr. Bywater that the subjects of phlyctenulosis respond to the specific tests for bovine tubercle. For example, in 15 juvenile cases of phlyctenular disease he had obtained a positive reaction in every instance to the Moro inunction test with bovine tuberculin.[14] Twelve of these cases had been previously tested with human tuberculin, applied by the same method, and had reacted positively. In a latter communication[15] Dr. Bywater stated that in 16 cases of typical phlyctenular disease in children from 3 to 17 years of age he had obtained positive results in every single instance, both with the human and the bovine product. In 56·25 per cent. of the patients there was a family history of tubercle. No phthisis was present, but some other signs of tubercle were general in the children, especially enlarged glands.

Dr. Bywater's results appeared to me to be of considerable importance, and so, with the assistance of Dr. L. W. Jeffries, I have recently investigated the point at the Queen's Hospital for Children, London, in 20 children, aged from 17 months to 12 years, who were suffering from various forms of phlyctenulosis. Von Pirquet's method was adopted. In every case a positive result, both as regards bovine and human tuberculin, was obtained. The intensity of the reaction with the two products varied according to the particular patient. Thus, in one-half of the children the reaction was recorded as equal; in 6 the bovine exceeded the human reaction; and lastly, in 4 the reverse was the case.

That the conjunctival phlycten is not a tuberculoma is universally admitted. Nobody has yet succeeded in reproducing tuberculosis by inoculating the anterior chamber of susceptible animals with such products. Tubercle bacilli have not been found in the efflorescence. The lesion itself does not present the histological structure of tubercle.[16] We may well ask ourselves in what way and by what means a focus of tubercle, latent or manifest, is able to produce a phlyctenule of the conjunctiva or cornea. Leber, as is well known, suggested that the phlyctenulæ were the direct result of dead bacilli set free from a caseous focus elsewhere in the body. The hypothesis was supported by a certain amount of experimental evidence. He found that an inflammation recalling phlyctenular keratitis sometimes followed the injection into the corneal parenchyma of dead tubercle bacilli.[17] To this it has been objected that any foreign substance would do the same. Bruns (a pupil of Leber's) produced changes resembling phlyctenulæ by the injection of dead tubercle bacilli into the blood stream.[18]

A somewhat similar view has been espoused by J. B. Nias and Leslie Paton[19] on the ground that in upwards of 50 patients the opsonic index of the blood behaved in a way that was typical of a definite tuberculous infection. In an earlier communication, however, it is to be noted that those authors seemed to think that the condition must be assigned to "tubercle toxins circulating in the blood apart from their bacilli." [20]

The best working hypothesis is probably that set forth with conspicuous ability by Dr. Weekers—namely, that the eye disease is due to the circulation of soluble toxins thrown off by the deposit of tubercle elsewhere in the body. The analogy that he institutes with the so-called "toxi-tuberculides" is very much to the point. Those eruptions, as is well known, occur in tuberculous subjects, and yet tubercle bacilli have not been found in them, neither can they be successfully inoculated into guinea-pigs. Exactly the same may be said of phlyctenulosis. Both the cutaneous and the ocular disease have on occasion been known to follow the subcutaneous injection of tuberculin (Hallopeau). The association of phlyctenulosis and of lichen scrofulosorum in one and the same subjects is, in my experience, not exactly an uncommon event. It may be reasonably suggested that such obvious tuberculous manifestations of the skin as scrofuloderma, lupus, and Bazin's disease (erythema induratum scrofulosorum) bear the same relationship to tubercle of the conjunctiva as is borne by lichen and acne scrofulosorum to phlyctenular affections.

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[5] Brit. Med. Jour., Oct. 19th, 1907.

[6] Gazette Hebdomadaire des Sciences Médicales de Bordeaux, August 4th, 1907.

[7] Tuberculose als Aetiologie der chronischen Entzündungen des Auges und seiner Adnexæ, Leipzig, 1907.

[8] Loc. cit., 1900, p. 590.

[9] Archives of Ophthalmology, September, 1908.

[10] Loc. cit., 1909.

[11] Brit. Med. Jour , April 16th, 1910.

[12] Thesis, 1911.

[13] Von Graefe's Archiv für Ophthalmologie. Band lxxvi., 1910, p. 370.

[14] The Ophthalmoscope, July, 1910.

[15] Thesis, 1911.

[16] Leber, almost alone among authors, has described the phlyctenule as possessing a tuberculous structure. The nodule, according to his investigations, is composed of polynuclear leucocytes, epithelioid cells, and many giant cells. The vessels of the part show endarteritis. Caseation is not present.

[17] 29 Berichte der Ophthalmologische Gesellschaft, Heidelberg, 1902, p. 66.

[18] Von Graefe's Archiv für Ophthalmologie, 1904, p. 439.

[19] THE LANCET, Dec. 1st, 1906, p. 1500.

[20] Transactions of the Ophthalmological Society of the United Kingdom, vol. xxvi., 1906, p. 232.

The incidence of bovine tubercle as a cause of disease in human beings is known to vary greatly according to the locality. For example, as regards the Edinburgh district, Dr. A. P. Mitchell found bacilli of the bovine type in no less than 90·27 per cent. of 72 cases of cervical adenitis in children.[21] On the other hand, in Berlin Gaffky found them in not more than 3·84 per cent. among 78 instances of tuberculous glands. Gosio examined the type of the bacillus in 122 cases of human tubercle, and found the bovine variety in 0·81 per cent. only. The infection of human beings by bovine bacilli, indeed, appears to be as rare an event in some cities, as Berlin, as it is common in others, as Edinburgh. The figures brought forward by Dr. Bywater and myself apply to two cities only—namely, Liverpool and London. It will be interesting to see whether they are supported by returns from other cities of Great Britain.

If it can be shown that phlyctenulosis is usually associated with the bacillus of bovine tubercle, then the remedy lies at hand in the shape of a pure milk-supply. It is indeed possible that could such be secured by legislation, as at the moment appears to be very probable in England, phlyctenulosis might become one of the rarer affections of the eye in poor children instead of being, as it is at present, accountable for the vast majority of inflamed eyes in that class. The greatest cause of defective sight in childhood might be largely remedied. At all events, pending legislation, it would certainly seem advisable to sterilise raw milk before giving it to infants and children.

An even larger point, to which attention has been recently directed by an American physician, Dr. Louis C. Ager, of Brooklyn, should not be lost sight of. That observer urges that all children affected with phlyctenulosis should be submitted to expert physical examination for evidences of incipient tuberculosis, and that they should receive suitable treatment for that condition when present.[22] That raises the question whether the ophthalmic surgeon can be said to have discharged his whole duty when he dismisses the child suffering from phlyctenulosis with a little good advice and a pot of yellow ointment.

Welbeck-street, W.

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[21] Brit. Med. Jour., Jan. 17th, 1914; THE LANCET, March 7th, 1914, p. 674.

[22] Long Island Medical Journal, June, 1912.

MEDICAL MAGISTRATES.—Mr. Hugh Stott has just been placed on the commission of the peace for the county of Sussex. Mr. Stott, who resides at Lewes, is medical officer of health to the East Sussex combined districts. He held the office of Mayor of Lewes in 1911–12 and 1912–13.—Dr. Sylvanus Glanville Morris, of Maerdy, Glamorganshire, has been placed upon the commission of the peace for the county of Glamorgan.

A CASE OF FEMORAL HERNIA TREATED BY BONE TRANSPLANTATION.

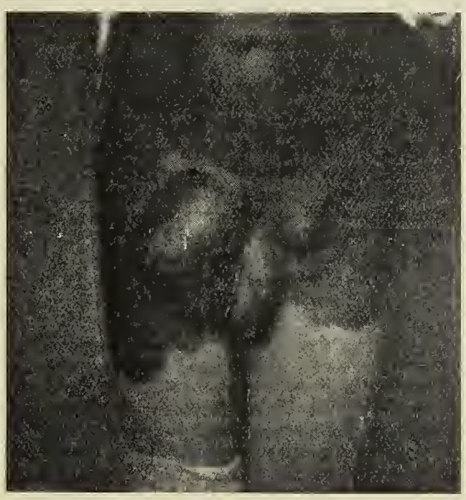
BY W. H. CLAYTON GREENE, M.B., B.C. CANTAB., F.R.C.S. ENG.,
SURGEON TO ST. MARY'S HOSPITAL, ETC.

FROM time to time surgeons have commented on the difficulty of dealing with the opening of a large femoral hernia. The method of approaching the neck of the sac from above Poupart's ligament and the subsequent suturing of the conjoined tendon to Cooper's ligament has given satisfactory results in ordinary cases, but where the opening is exceptionally wide other measures are required, and the implantation of filigree does not seem satisfactory in this situation.

The numerous articles recently published on the subject of bone grafting suggested to me the possibility of closing the entrance to the femoral canal by a bony transplant connected with the pelvis, and in this way increasing, as it were, the pelvic skeleton. The following is an account of a case in which the method was employed.

The patient, a male aged 57 years, was admitted to hospital with a double femoral hernia of about 14 years' duration. That on the right side was very large and caused great inconvenience; that on the left was smaller, but had recurred a year after an operation previously undertaken. (Fig. 1.) The right-sided swelling was reducible, and the whole hand could be introduced into the ring.

FIG. 1.

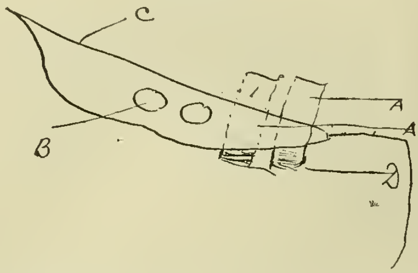


Large right and small left femoral herniæ.

An operation was performed on May 28th when the sac was exposed by means of a transverse incision, the contents reduced, and the neck ligatured in the ordinary manner. About two inches of the eleventh rib were then excised subperiosteally and the bone was split into two pieces through the cancellous tissue. The femoral wound was then widely retracted and the bone grafts were introduced into pockets made in the periosteum at the back of the pubic bone. There was no trouble in fixing them, and Poupart's ligament was then drawn down to the pectineus fascia, leaving a firm bone plate on its abdominal aspect. The left hernia was dealt with by the ordinary method. The wounds healed soundly and the bone transplant can be felt firmly in position. The shadow of the transplanted bone can be seen in the X ray photograph.

I am publishing this case as it suggests a method of dealing with large inguinal as well as femoral hernias, and I am not aware of any case in which the method has been tried previously. The advantage of the natural material over foreign bodies such as silver filigrees is obvious, though I do not suggest that a rib is the most suitable site from which to take the graft. On another occasion I shall probably select the tibia.

FIG. 2.



After operation. A A, Bone transplants. B, Femoral vessels. C, Poupart's ligament. D, Pockets in pubic periosteum into which the grafts are fitted.

Note.—Since the above was written the man has been examined again and the bone transplants can be felt firmly in place. There is a good deal of bulging of both inguinal regions, but the femoral canal is quite secure.

Devonshire-place, W.

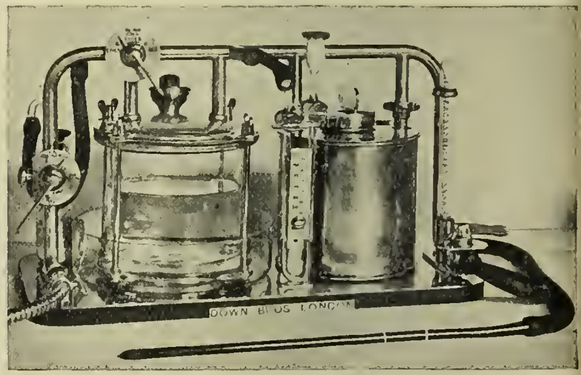
INTRAPHARYNGEAL ADMINISTRATION OF WARMED ETHER VAPOUR BY THE NASAL ROUTE.

BY H. M. PAGE, F.R.C.S. ENG.,
ANÆSTHETIST TO GUY'S AND THE WEST LONDON HOSPITALS.

AT the International Congress of Medicine, 1913, I read a report on Nasal Methods, in which I mentioned the experience of Souchon,[1] Thoms,[2] Pinneo,[3] and myself,[4] with ether by this route. Since then I have made further trial of the method with the help of an intratracheal apparatus. The advantages peculiar to intratracheal insufflation are the power of distending the lung and the prevention of blood and other matters from entering the trachea by means of the back flow of air. The other advantages incidental to the method are an even administration of a warmed ether vapour with the minimum of respiratory effort and the removal of the anæsthetist and his apparatus, with the exception of a tube, from the seat of operation. These incidental advantages can be obtained by intrapharyngeal insufflation.

For those possessing an intratracheal apparatus the method is perfectly simple and easy. A preliminary injection of morphia or omnopon and atropine, combined with scopolamine if desired, is of advantage in the case of adults, but is not necessary. Anæsthesia is first induced by one of the usual methods or drugs. If in a particular case a very light anæsthesia is indicated it is only necessary to produce a sufficient depth to enable the nasal tubes to be passed, but generally it is best to induce full surgical anæsthesia. Indiarubber catheters of suitable size are passed through the nares into the pharynx behind the tongue; they are coupled up with the delivery tube of the apparatus by means of a Y-piece, and the warmed ether vapour is delivered over the glottis. In some cases in children, for example harelip, I have found one tube to be sufficient.

The question of positive pressure used is, of course, quite unimportant as compared to the use of an intratracheal tube, but as I have found that the respiratory movements are less than normal with this method, though oxygenation is excellent, and as it must be possible to raise the intrathoracic pressure by closing the mouth if the nasal tubes fit closely, I have always set the safety valve of the apparatus to blow off at 15 mm. Hg. The pressure used as recorded by the manometer has been 3 to 10 mm. Hg. The mouth can be kept more or less closed according to the depth of anæsthesia required, but there must always be a way for expiration. As a matter of fact, in the majority of cases the mouth need not be interfered with at all. In some of my first cases, if resistant and "full" ether required, there was so much cooling of the ether that the dew was frozen on the outside of the reservoir with consequent loss of evaporation and weakening of the anæsthetic vapour, but the apparatus I now use is one of Kelly's latest pattern, to which Messrs. Down Bros. have added a simple water jacket to the ether reservoir as seen in the diagram, and this trouble is done away with.



To the left of the glass bowl forming the water jacket is seen the supply tube which is connected with an electric motor blower or foot bellows. The delivery tube is shown below.

The kind of cases in which I have successfully used the apparatus in this way are cleft palate, harelip, decompression, glands (neck), goitres, radical cure of hernia, cystoscopy, suprapubic cystotomy, and operations on the trunk and limbs and on bones. I have found it a particularly easy and good way of giving ether to children and I have had no trouble with adults. My youngest patient, aged 10 days, was a bad case of cleft palate with double harelip, another was aged 3 weeks, and there was a decompression in a patient aged 5. I have not yet tried this nasal plenum method in intraperitoneal operations, excepting hernias, but the authors mentioned above report favourably of its use in these cases. In the operations on the neck, such as glands and goitres, there was no trouble from interference with respiration. The absence of exaggerated breathing and the perfect oxygenation impress upon one the importance of the air way in anæsthesia, and point to the seat of obstruction or interference being above the glottis in the majority of cases. The nasal tubes take the place of an artificial air way passed through the mouth and act more efficiently.

I would particularly emphasise the possible advantages of this method in such cases as cleft palate, harelip, and cranial operations in children, in whom from their age and size it is difficult and perhaps inadvisable to pass a tube through the glottis or to use any appreciable increase of intrathoracic pressure, and in consequence chloroform is generally given. This method acts well in operations for goitre. In operations for exophthalmic goitre I consider it better than intratracheal insufflation, as in my opinion there is less chance of producing bronchitis, one of the special causes of death after these operations when done under general anæsthesia, and it obviates the necessity of inducing the deep anæsthesia which is a necessary preliminary to intubation. Full surgical anæsthesia is dangerous in well-marked cases of exophthalmic goitre, and is quite unnecessary in any case of goitre if morphia, &c., has been previously given and local infiltration with novocaine used as well. So far there has been no case of post-anæsthetic bronchitis or pneumonia, and no trouble from after-vomiting.

The important points in connexion with a plenum method by means of nasal tubes as here described are that there is an excellent air way, that the ether vapour is warmed, that the anæsthesia produced, though efficient, is light and even, and that ether can be given in certain cases where chloroform would otherwise be used.

Bibliography.—1. Medical News, Nov. 23rd, 1895. 2. Surgery, Gynæcology, and Obstetrics, December, 1911, p. 695; Yale Medical Journal, May, 1910. 3. Journal of the American Medical Association, June, 1912, vol. lix., p 1862. 4. Proceedings of Seventeenth International Congress of Medicine, 1913, Subsection VII. B, part ii., p. 100.

CASE OF PRIMARY CARCINOMA OF LIVER IN A CHILD 3 YEARS OLD.

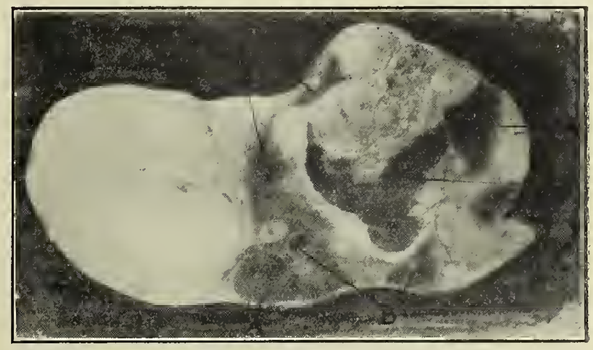
BY W. T. FREEMAN, M.D. DURH., F.R.C.S. ENG.,
PHYSICIAN, ROYAL BERKSHIRE HOSPITAL, READING.

THE patient, a male aged 3 years, was admitted into the Royal Berkshire Hospital under my care on Dec. 10th, 1913. There was a history of abdominal swelling extending over eight months, accompanied with dyspnœa, but with very little belly pain. Upon admission the urine was found to be normal, not containing albumin, sugar, or bile. The bowels were open. The heart was normal; the bases of both lungs yielded a few rhonchial and sibilant sounds. Abdominal examination showed that the belly was enormously distended. In the right hypochondrium for 2 inches below the costal margin a hard (very hard) and somewhat uneven ridge could be felt; this ridge extended across to just within the left hypochondrium. The main mass of the growth grew apparently from beneath this ridge and passed downwards into the right iliac fossa and pelvic region, and to the left an inch beyond the umbilicus and downwards well into the corresponding iliac fossa, but to a lesser extent than on the right side. The spleen was barely palpable and could be differentiated from the liver growth. No lymphatic glands and no other lumps could be felt.

The temperature was normal or subnormal until within four days of death (Feb. 17th, 1914). The abdominal measurements gradually increased from 24 inches on admission (level of umbilicus) to 25½ inches. There was gradually increasing cachexia, but the child took his feeds remarkably well; indeed, was ravenous until within a week of the end. Some vomiting occurred on Dec. 20th, and on Jan. 1st and 2nd, but upon no other occasions. Pain and tenderness during the child's residence in hospital were almost negligible symptoms.

In January the case was exhibited before the Reading Pathological Society, and the diagnosis was one of malignant growth of the liver with a possible alternative of Banti's disease. In this latter connexion the presence of a small amount of ascitic fluid was noticed. The blood examination report soon after admission by Dr. R. Donaldson was as follows: Red cells 4 × 10^6, hæmoglobin 55 per cent., colour index 0·6. White cells 15,000, polymorphonuclears 55 per cent., eosinophiles 4 per cent., small lymphocytes 33 per cent., mononuclears 6 per cent., and transitionals 2 per cent. The red cells showed ano- and polychromasia.

The accompanying figure (reproduced from a photograph) faithfully depicts a section through about the centre of the growth. The bile-stained (AA) and blood-stained (BB) portions were the only parts of the tumour showing some approach to normal liver tissue. A small amount of peritoneal fluid was found after death. No secondary growths were discovered anywhere. The mass weighed 51 oz.



The points of interest appear to me to be the primary malignant growth of a carcinomatous nature in a child of only three years of age, the absence of all secondary deposits, and until the end was quite near the comparative absence of pain, tenderness, or of decided dyspepsia or anorexia. Dr. Donaldson is publishing at a later date a detailed macroscopical and microscopical description.

Reading.

LITERARY INTELLIGENCE.—Mr. Henry Kimpton announces the following works for publication: "Gonorrhœa and its Complications in the Male and Female," by Dr. David Watson; "Practical Pediatrics: A Modern Clinical Guide in the Diseases of Infants and Children for the Family Physician," by Dr. James H. McKee and Dr. W. H. Wells; "The Diagnosis and Treatment of Digestive Diseases," by Dr. G. M. Niles; "Nutrition: A Guide to Food and Dieting," by Mr. C. E. Sohn; "Surgery, its Principles and Practice, for Students and Practitioners," by Dr. A. P. C. Ashhurst; and also a second edition of "Practical Therapeutics," by Dr. D. M. Hoyt.—It is intended that in the future the St. Bartholomew's Hospital Reports shall be published in three parts each year; the first two parts containing scientific and clinical papers, the remaining part the hospital statistics, &c. It is hoped that these parts will appear in July, December, and March of each year. The first part will appear at the end of the present month.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

CASE OF SEVERE INJURY TO AN EYE FROM THE CONTENTS OF A GOLF BALL.

By Walter H. H. Jessop, M.B. Cantab., F.R.C.S. Eng.,
SENIOR OPHTHALMIC SURGEON TO ST. BARTHOLOMEW'S HOSPITAL.

The following case is interesting in demonstrating an unexpected accident. To most people a golf ball means a ball made solely of rubber. The eye of the patient whose case is here noted was very severely injured (and it is still doubtful how much his vision will be interfered with) in the course of discovering that some rubber golf balls contain other material than rubber.

The patient, a man aged 43, on June 9th was cutting away with a knife the substance of a zone zodiac golf ball to show its construction to a friend, when the core of the ball was pierced. This was followed suddenly by a discharge of a semi-fluid caustic substance with such force that it was deposited on the ceiling, about 10 feet high, and also thrown laterally. Unfortunately the patient's eyes were open, and the substance hit the right eye with great force, covering the cornea and conjunctiva with a greyish putty-like caustic substance. The eye was washed with boric lotion and this substance picked off in shreds. Mr. N. Rushworth found the external surface of the lids of the right eye very red and swollen; when I saw the case the same evening the ocular and palpebral conjunctivæ were much burnt and ecchymosed, and the cornea hazy. The treatment was olive oil and atropine. The next day the conjunctiva of the right eye was roughened, ashy-grey in colour, and ecchymosed; the cornea had considerable loss of surface, especially at the nasal side. With fluorescine the cornea stained green nearly all over its surface, and there was a marked crescentic deep ulcer at the nasal side.

June 23rd.—The patient has had great pain, especially at night, and there is marked photophobia. Right eye: conjunctiva very rough on the surface, and is in rags from ulceration in the nasal and inferior portion near the cornea; much vascular congestion, small ecchymoses, and chemosis; mucopurulent discharge. The cornea looks more opaque, and the ulcer at the nasal side is about the same; the staining by fluorescine is more marked. Vision: right eye barely counts fingers. Treatment: oil and atropine, fomentations, and the eye to be bandaged as much as possible.

June 26th.—The patient still in bed and in a darkened room. He cannot stand much pressure on the eye by bandage. Photophobia very marked and still much pain. The conjunctiva has still the ragged, rough appearance. The cornea is roughened all over the surface and is greyish in appearance; the ulcer is healing, but nearly the whole surface of the cornea stains with fluorescine.

July 3rd.—The eye looks much better, but there is still much photophobia. The conjunctiva, though congested, is smooth as to its surface. The cornea, hazy all over its surface, does not now stain with fluorescine.

July 6th.—Patient still has photophobia. The conjunctiva smooth, though still congested; cornea very hazy, but surface smooth; pupil well dilated under atropine. Vision, right eye 6/60.

Harley-street, W.

A NOTE ON THE EFFECT OF THE HYPODERMIC INJECTION OF ADRENALIN CHLORIDE SOLUTION.

By W. Miller, M.D. Edin.

This note is based on the experience gained by treating during the past two and a half years 11 cases, 8 of spasmodic asthma and 3 of hay fever, with hypodermic injections of adrenalin chloride solution. Four of the patients were males and seven were females, and the ages ranged from 6 to 35 years. The injections were given once a week, and usually numbered eight or ten, but in one case 58 were given. The doses were small, varying from 10 minims of 1:15,000 to 10 minims of 1:5000 solution.

My general conclusions are as follows. About one minute after the injection the patient may complain of a feeling of oppression and sometimes of faintness; there is marked pallor, and the pulse as a rule increased to 110, being small and slightly irregular, and may attain to 130 per minute. These symptoms pass off gradually in from three to ten minutes, the patient grows comfortable, recovers colour and a pulse of good volume, which becomes slower by some ten beats per minute than before the injection, the slowness continuing markedly for some hours.

There are, however, considerable variations from this general story, not only in different individuals, but also on different occasions in the same patient. Thus:—

(*a*) Two patients showed no immediate effect.

(*b*) In a lady aged 25, after an injection of 10 minims of 1:5000 solution, the pulse remained small, rapid, and irregular for three hours, and there was no second stage of slowing and steadying. She felt and looked very ill, and it was some days before she recovered. There was no obvious heart lesion, but the pulse was normally small.

(*c*) A man, aged 34, was little affected by the first injection (10 minims of 1:5000), but after the second (10 minims of 1:5000) and third (10 minims of 1:10,000) the pulse, although increased only in rate about 15 beats per minute, became very irregular and remained so for quite 20 minutes. The drug was therefore stopped.

Intravenous injection produces startling results. It occurred accidentally on two occasions with the same patient, a lady aged 33, who was receiving weekly injections and responding in the usual way. On the first occasion the pulse before the injection was 85 per minute, regular, but soft. Ten minims of 1:5000 solution were injected under the skin of the forearm. No vein was noticeable at the site punctured, but on withdrawing the needle a drop of blood followed. Within a few seconds the face and lips became ashen and the patient leant back in her chair murmuring that she felt very ill. Respiration was quick and shallow, the pulse very small and so rapid as to be uncountable. She remained in this state for four or five minutes before improvement was noticeable. After about 15 minutes she was better, but felt rather shaken; the pulse was then 78 per minute, of fair volume and almost regular.

On a second occasion an attack of asthma was just commencing; the pulse was 100 per minute. Ten minims of 1 : 10,000 was given and a drop of blood followed the withdrawal of the needle. Again the same symptoms followed, but although the pulse was not countable, her condition was not so alarming, and after about three minutes began to improve. Within five or six minutes she was quite comfortable, the pulse 80 per minute, regular, and of good volume, while the respiration was normal.

I have never given a series of large doses (e.g., 10–20 minims of 1 : 1000 solution) for asthma, but I have given occasionally a single one for other conditions without noticing any initial lowering of the blood pressure. A colleague, however, who used the drug in a bad case of spasmodic asthma, accompanied by mitral disease, gave 10 minims of 1 : 1000 solution, which immediately relieved the breathing. He repeated this dose on two succeeding days, with the result that the patient's condition became extremely critical owing to delirium cordis. A week later, the heart having recovered and the asthma returning, he gave a single dose, but the heart symptoms followed at once.

The result in asthma is not cure, but temporary relief. That the injections may be utilised to enable other treatment to take effect was indicated by one of my 11 cases. A girl, aged 7, had suffered since the age of 2 from occasional attacks, which had gradually become more frequent and lengthy until they occupied three or four days of each week. There was enlargement of the bronchial glands. The usual remedies had no effect, so injections (10 minims of 1 : 10,000) were given once a week for 58 weeks, during which time general treatment was adopted for the glands. At the end of this time there had been no attack for three months, and since then (July, 1912) there has only been a return on a few occasions when the patient had colds. I do not attempt to generalise from so small a number of cases; I only indicate the points suggested: (1) the difference in the immediate effect of large and small doses is in accordance with physiological results; (2) individual variation in susceptibility may be great; (3) possibly a condition resembling anaphylaxis develops in some cases—for example, Case (*c*) and the case whose notes were sent me by a friend.

Rayleigh.

Presentations to Medical Men.—In commemoration of his marriage and in recognition of his many years' service as medical officer, the Brighton Division of the Sons of Temperance on July 10th presented Mr. E. Fitzgerald Frazer, F.R.C.S. Irel., with a silver coffee-pot.—In the Grand Hotel, Leicester, on July 8th Mr. Robert Wallace Henry, M.D., B.Ch. Dub., was presented with a solid silver tea and coffee service, with kettle, stand, and tray, the latter bearing the following inscription: "Presented to Dr. R. Wallace Henry, Originator, Founder, and First President of the Union of Medical Practitioners and the Leicestershire and Rutland Public Medical Service. A mark of love and esteem from his colleagues. July 8th, 1914." The reception was attended by medical men from all parts of Leicestershire and Rutland and the surrounding districts, and the speeches bore ample testimony to the excellent work which Dr. Henry has done in the fight for medical efficiency and the public good. Mrs. Henry's name was associated with the presentation. In acknowledging the gift Dr. Henry said that both in inaugurating the Public Medical Service and the Medical Practitioners' Union they had set an example which was likely to be followed throughout the country.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION OF OBSTETRICS AND GYNÆCOLOGY.

Exhibition of Specimens.—Utero-rectal Adenomyoma.—Migratory Adenomyomata.

A meeting of this section was held on July 2nd, Dr. W. S. A. Griffith, the President, being in the chair.

Dr. H. R. Andrews showed a Uterus which he had removed after performing Cæsarean section. Labour was obstructed by a carcinomatous growth which had surrounded the external os, but had caused no symptoms. The patient, who was aged 39 years, was admitted to the London Hospital on March 1st, 1914, having been in labour about 24 hours. On admission the pains were strong and frequent. The cervix was rigid and only two-fifths dilated. More careful examination of the cervix found it to be extremely hard and firm feeling, as if a portion of a thick rubber ring pessary had been let into the tissues of the cervix on its anterior two-thirds; the posterior one-third was normal. There was no ulceration, but in front and to the left a raised everted edge could be made out. On examination with a speculum it was impossible to diagnose that it was carcinomatous by its appearance, but a sound sank into the tissue about half an inch with only gentle pressure. Cæsarean section was performed and the uterus then removed. The anterior wall of the cervix above the growth was so thin that it tore in separating it from the bladder. On examination after the operation a hard, white growth was found to occupy all the lower part of the cervix except a little more than an inch posteriorly. Sections showed squamous-celled carcinoma. It was very curious that in this case carcinoma which was sufficiently advanced to cause obstructed labour had produced no symptoms of its presence.—Remarks were made by Dr. Herbert Spencer and Dr. Amand Routh.

Mr. John D. Malcolm showed a specimen of Fibromyoma complicating and masking carcinomatous disease of the cervix uteri. The patient was a healthy looking woman aged 53, who had for years suffered with a fibroma, but of late had very free red discharge and discomfort. On examination there was an obvious fibroid about four inches in diameter at the fundus, but there was also another growth in the region of the upper part of the cervix. There was no ulceration of the tissues, but a diagnosis was made that some active degeneration, either malignant or necrotic, was in progress. On opening the abdomen the fundus contained a large fibromyoma. Slight traction on this caused a laceration of the tissues of the cervix below the tumour, which was now found to be the seat of extensive cancerous disease. The removal of the malignant mass was found to be very difficult owing to its extensive connexions to the bladder and ureters. The operation lasted three hours. Unfortunately, though the patient did well for a time, the growth recurred, and she died within a year. Sections of the growth proved it to be a carcinoma, partly squamous and partly cylindrical celled in type. It apparently arose from the interior of the cervical canal.

Dr. H. Macnaughton-Jones showed a specimen of Adeno-carcinoma limited to the summit of the uterine cavity. The uterus had been removed from a patient aged 54, a widow. She had had four children. For some years she had a vaginal discharge which was coloured but never offensive. The uterus was curetted and the material removed was reported to be adeno-carcinoma. Ten days later the uterus was removed, and at the summit of the fundus a soft growth was found projecting into the uterine cavity and involving the myometrium. The growth was 1¾ inches in length. It exhibited the ordinary features of an adeno-carcinoma.

The President read notes of, and showed, a case of Utero-rectal Adenomyoma with extensive decidual metaplasia complicating pregnancy. The patient, aged 37, had been married 15 years, and had had one child born in December, 1899. She was pregnant again when seen at about the sixth month. The last regular period ceased on Sept. 22nd, 1913, and the expected day of confinement was June 27th, 1914. She was admitted to St. Bartholomew's Hospital on account of a curious mass in the recto-vaginal septum complicating the pregnancy. The pregnant uterus extended 9½ inches above the symphysis, and on its anterior surface was a flat sessile fibroid. There was some hydramnios. The mass in the recto-vaginal septum was ill-defined and soft and spongy in character, not bleeding on digital examination, but on exposing it with a Sims' speculum and touching it with dressing forceps free arterial hæmorrhage followed. The mucosa of the rectum was not invaded. A fragment of the growth was removed through the posterior fornix for examination. Abderhalden's test for pregnancy and carcinoma was faintly positive. The optical test was not done owing to insufficient material. During the following month the case was carefully watched, and it was found that the cervico-rectal growth had increased considerably, compressing the rectum and extending on the right side as far as the sacro-iliac synchondrosis. It was decided to try the effects of radium, and this was done, 100 mgm. of radium bromide being inserted into the middle of the growth, and two other tubes containing 37 mgm. of radium carbonate and 50 mgm. of radium bromide for 20 hours. In June the patient was in good health and the pregnancy apparently normal, with less hydramnios. Locally the cervico-rectal mass had diminished considerably. Nothing further was done, as it appeared that there was a good prospect of spontaneous delivery. Sections of the growth stained by Van Gieson's method showed large masses of typical decidual cells in a stroma of muscle and connective tissue. Within each mass was a cleft, lined by a thin lamina composed of flattened epithelial cells. In one part was a dilated gland tubule lined by low cubical epithelium and completely surrounded by large decidual cells. The histological characters of the growth seemed to be those of an adenomyoma, in which the stroma cells surrounding the gland tubes had undergone decidual reaction. The President thought that the decidual change supported the view that extra- as well as intra-uterine adenomyomata were of Müllerian origin.

Dr. ARCHIBALD LEITCH communicated a paper on Migratory Adenomyomata, with epidiascopic demonstration. He said that it was not uncommon to find endometrial tubules and stroma penetrating for some considerable distance into chinks in the musculature of the uterus where the organ was approximately normal, and in this way adenomyoma started. In the diffuse form of adenomyoma the connexion between the endometrium and the characteristic parts of the tumour was easy to establish; but sometimes the point of entry of the endometrium was restricted and the connexion was difficult to find. Further, in some intramural adenomyomata there was no association between the two, but their histological identity with the former group left little room for doubt that they had migrated from the endometrium. They might be found as subserous pedunculated tumours, or they might be extruded within the layers of the broad ligament. Finally, they might be quite separate from the uterus. A case was recounted of an adenomyoma in the base of the broad ligament still connected to the uterus by means of a very fine, long pedicle. The stage further would have been complete separation, and to explain the presence of a tumour containing glandular epithelium in such a situation the favourite theory was an origin from hypothetical Müllerian or Wolffian duct remains or a metaplasia of peritoneal inclusions. These hypotheses were rejected in favour of the migratory theory. He instanced two cases of adenomyoma of the recto-vaginal septum that had come under his notice. In one of these the gland tubules had actually penetrated the rectal wall as far as the submucosal layer. In both he could trace the tubules into the cervical portion of the uterus, and in both the cervical endometrium had penetrated far into the musculature, both approaching and, he thought, being continuous with each other. He reported in full a case in which a small discoid growth was found on the posterior wall of the uterus opposite to a tumour in the sigmoid loop of the pelvic colon. Both were typical adenomyomata, and the sections showed that the separation between the two was quite recent. He held that the original tumour had migrated through the uterine wall, had adhered to the dependent colon, and that the tubules had infiltrated the wall of the latter. Adenomyomata were infiltrating benign tumours of a migratory character, always arising from the endometrium, and in whatever locality they were finally found they had the markedly typical characters that separated them from all other conditions. He had two cases which had taken on malignant change.

Dr. CUTHBERT LOCKYER opened the discussion which followed on these two papers.—Dr. SPENCER said he did not think that the cases of retro-uterine and sigmoid adenomyositis shown by the President and Dr. Leitch were of endometrial or Müllerian origin; it was well known that the peritoneum formed decidua during pregnancy, and its presence in the case reported by the President was no proof of Müllerian origin. He looked forward to the future history of that interesting case. One of the most disastrous results of radium was the peri-rectal fibrosis it set up. Wolff had found X rays of little benefit in adenomyositis. Dr. Spencer had pointed out a year and a half ago, in discussing Dr. Lockyer's case of excision of the uterus and rectum for this condition, that the researches of R. Meyer, Amann, and Renisch showed that the growth arose in the peritoneal endothelium. The researches of Pick, Orloff, Ivanoff, Opitz, and others, and examination of the speaker's own three cases supported this view, which he was interested to see Dr. Lockyer now adopted. Migration of endometrium and the Müllerian and Wolffian theories did not explain some of the remote adenomyomata, which had been observed in the sigmoid, small intestine, stomach, pleura, pericardium, as well as in the pedicle of a ventro-fixed uterus. Dr. Spencer had in his last case performed hysterectomy and dissected the growth from the rectum with the galvano-cautery. The patient recovered, with normal defæcation. He agreed with Dr. Lockyer that adenomyositis was not a tumour except in the clinical sense. He thought also that the ordinary diffuse uterine "adenomyoma" was not a "tumour," but a hypertrophy and hyperplasia.—Dr. W. W. H. TATE and Dr. HERBERT WILLIAMSON also spoke.—The PRESIDENT and Dr. LEITCH replied.

Dr. GRIFFITH having delivered his Presidential Address, votes of thanks were given to the retiring officers of the section for 1913–14.

UNIVERSITY COLLEGE, LONDON.—In the Faculty of Medical Sciences at University College the following medals have been awarded: Senior anatomy class (silver), E. Sakoschansky; junior anatomy class (silver), G. V. Anderson; senior physiology class (silver), M. Schwartz; organic and applied chemistry (silver), J. de S. Wijeveratne; junior pharmacology class (gold), B. MacLean; hygiene medical course (silver), C. I. de Silva.

OXFORD OPHTHALMOLOGICAL CONGRESS.—The annual Ophthalmological Congress was held at Oxford on Thursday and Friday, July 9th and 10th, under the mastership of Mr. R. W. Doyne. It was attended by rather more than the usual number of members and proved to be one of the most successful yet held. The addresses given in the mornings were extremely interesting and led to some spirited discussions. On Thursday afternoon operations were described at the Eye Hospital by several surgeons, and some cases of interest were shown. On Friday afternoon a discussion was held on the Question of Compensation in Injuries to the Eye. It was opened by Dr. William Robinson, of Sunderland, Dr. Frank Shufflebotham, of Newcastle-under-Lyme, speaking next. Mr. Angus MacNab, Mr. J. Jameson Evans, Dr. J. Gray Clegg, Mr. G. H. Pooley, and Mr. R. J. Coulter also spoke. The annual dinner of the Congress was held in the hall of Keble College on Thursday night, Professor Arthur Thomson being in the chair. After the dinner a discussion on the future of the Congress was held, when it was decided, owing to the success of the meetings in the past, to continue to carry them on in the same way as before. This year the addresses, the scientific and commercial museums, were all held in the Department of Human Anatomy in the University Museum, kindly lent by Professor Arthur Thomson, the fact of them all being under one roof being a great improvement on the previous arrangement. Amongst the distinguished visitors to the Congress from abroad were Dr. Casey Wood, Dr. Wendell Reber, Dr. Brown, and Dr. Gifford from the United States, and Dr. Darier from Paris. The meeting, which terminated on Friday night with the usual smoking concert, reflects great credit on the master and the energetic secretary, Mr. Sydney Stephenson.

Reviews and Notices of Books.

Handbuch der Deutschen Schulhygiene.

Herausgegeben von Professor Dr. Med. HUGO SELTER. Dresden und Leipzig: Theodor Steinkopff. 1914. Pp. 760. Price 28 marks.

THE many pens that have gone to the production of this book have unfortunately not been in collaboration; the same subject is treated twice and even thrice over, nor does the repetition bring out as a rule anything new. Herr Graupner, a schoolmaster, discusses the defects of speech, of the eyes, and of hearing in pages 200 to 216. Professor Drigalski goes over the same ground in more detail on pages 440 to 468, whilst Professor Leubuscher returns to the examination of the special senses on pages 538 to 602. Despite this repetition important matter is omitted; there is no mention of myope schools, which have proved a great success since their introduction in 1908 in London.

Of strabismus Drigalski says that its only interest for the school doctor is the question at what age the child should be operated upon. There is no mention of orthoptic treatment or of treatment by glasses and atropine; both methods have been successfully carried on in young children at school. He recommends a 1 per cent. solution of homatropine for the estimation of difficult cases of hypermetropia. This solution is too weak, and it has been shown that without a mydriatic the results are almost valueless in estimating the refraction of children under 14.

Drigalski regards stammering as a neurosis which can be cured by appropriate physical exercises. He seems to think the failures are due to the exercises not being kept up at home (p. 480). Dr. Flachs more wisely remarks that stammering has many causes and depends upon a neurotic disposition. For successful treatment the whole condition of the child must be taken into account. Graupner has obviously more first-hand knowledge of the defect; he recognises that whilst improvement is frequent so long as the stammerer is under the specialist's treatment, the defect practically always returns when the patient leaves the specialist. He therefore regards all the breathing exercises and such like by specialists as treatment by suggestion, and on the whole recommends psychotherapeutic measures. Stammerers ought to be taken in hand as soon as the defect appears; in early years they can be permanently cured without exercises or operations. The paralysing influence this defect has upon the whole character of the sufferer can be realised only after minute investigation. Though Gutzmann's estimate of 1 per cent. of school children as stammerers is probably excessive, the defect is sufficiently widespread to merit more careful attention than it gets from the school doctor. It is not a defect that should be relegated to the advertising specialist.

The book is rendered bulky not only by repetition but by the inclusion of unnecessary matter. Professor Frohlich's popular sketch of the nervous system is quite out of place here; the description of mental diseases, the several pages on hysteria and neurasthenia are more suitable to a text-book on medicine. But despite its 760 pages much has been omitted that should have found a place, and that, indeed, appears in Burgenstein's well-known text-book for school hygiene, although 200 pages shorter. In the first section dealing with hygiene of the school building there is no mention of heating by gas, although many advantages have been claimed for this method, based upon the experience of German schools. In ventilation too much importance is still ascribed to Pettenkofer's formulas and too little to the circulation of air, its temperature, and moisture. The section on school lighting omits Engelbracht's (1905) formula: $f = \frac{F}{5} \times \frac{x2}{36}$ —the basis of recent work in school illumination. There is no mention of Harman's photometer, which is in every way superior to Wingen's and much cheaper. The authors, indeed, seem curiously unfamiliar with the school hygiene movement outside Germany. Burgenstein's book contained 27 references to London in the index; this work has but two, one of them is wrongly paged and the other is quite out of date.

School clinics are discussed in a few lines with a reference to The Hague and Lucerne, and Strasburg. We do not recognise Kowentree, who is the authority (without further reference) for the statement that out of four school children only two are willing to have free dental treatment. The clinics at Cambridge, Bradford, and Deptford in this country tell a very different tale. The authors, Drigalski, Flachs, and Leubuscher, who deal independently with the subject, seem to think that the last word in prophylaxis is Jessen's School Clinic. In England we have gone beyond that; the teaching of Sim Wallace and other dentists is bearing fruit in our public health. The work done by Dr. J. Wheatley on the prevention of caries in Shropshire has no right to be passed over in a book on school hygiene. Had modern English teaching on this subject been known the out-of-date and really dangerous diets recommended for children on pages 335 and 336 would not have been published.

It is true that inspection and treatment become an obsession in England; all that seems required by the authorities from the unhappy school doctor is that he should be looking at the mouths of unhappy school children, weighing them, and measuring them at a given rate per hour. The hygiene of education remains almost at a standstill, and here something may be learned from Selter's text-book. Sex instruction is dealt with by Flachs and Drigalski; we cannot, however, agree with either of those doctors that it should be the regular business of the teacher to give children this instruction. Such definite omission of home instruction is a mistake, a remark which, of course, does not apply to college students or to training colleges for teachers.

The question of homework has been raised in this country by a few parents, but is almost ignored by the medical and teaching professions. Graupner reviews the whole subject and shows by statistical and other results that homework is an ill to young children. He, as schoolmaster, shares Meumann's idea that homework should be required only in the upper forms. Fatigue, coördination, the time-table and other questions involving psychological interests are all excellently treated. Valuable also is Drigalski's carefully written section on the infectious diseases.

But for the reasons we give this book cannot take the place of Burgenstein and Netolitzky's handbook. A new edition will require the omission of the many overlappings, the cutting out of some padding, and the recognition that England and America have made some new and valuable contributions to school hygiene.

The Principles of Pathologic Histology.

By FRANK B. MALLORY, M.D., Associate Professor of Pathology, Harvard Medical School; Pathologist to the Boston City Hospital. With 497 figures containing 683 illustrations, 124 in colours. London and Philadelphia: W. B. Saunders Company. 1914. Pp. 677. Price 24*s.* net.

THIS book treats of pathology from the morphological and biological point of view, the author's aim being to portray as far as possible the cellular elements out of which the various lesions are built up, and then to trace the development of the lesions from the simplest to the most complex. In the author's opinion the morphologic side of pathology for many students is a dead subject. The book itself is based, so far as possible, on the study of lesions from the earliest to the most developed—not on what someone has written about them, the pathologic material having been collected during the past 16 years in the Boston City Hospital. As the author modestly states, the book is incomplete, but it affords a framework on which to build in the future.

It is divided into two parts. Part I. (pp. 17–410) deals with general pathologic histology under the following heads: inflammations; retrograde processes and the substances associated with them; special injurious agents and the lesions they produce; and tumors. Part II. is concerned with special pathologic histology (pp. 411–622), including the organs of circulation, respiration, digestion, the urinary and male and female genital organs, the blood-making organs, the organs of the central nervous system and locomotion and other organs—i.e., the adrenal and thyroid glands.

First and foremost what strikes one is the superb quality, artistic representation, and clear definition of the illustrations. Unfortunately, neither the magnification, the method of fixing, nor the methods of staining are indicated. Practically all the illustrations are histological, and only a few represent the naked-eye appearance in disease—e.g., gouty deposits in the ear, hands, and foot, typhoid ulcers, and keloid. Red blood corpuscles are described as "bell- or cup-shaped masses of protoplasm containing no nucleus." This is not the usual acceptation of their shape. Fibrin is described as "a pathologic product out of the serum which has exuded." Is serum the correct word? Under the head of special injurious agents and the lesions produced by them microorganisms are dealt with. A succinct, well-illustrated account of the various pathogenic bacteria occupies over 100 pages, while a few pages are given to some animal parasites such as entamœba and dysentery, balantidium and trichinella spiralis. The remainder of the first part, pp. 251–410, is devoted to tumours. Their most striking characteristic is their autonomy or independence of growth. In the human body there are some 15 different distinct varieties of cells giving rise to tumours which may be denominated type cells. There are some type cells which do not seem to give rise to tumours (erythroblasts, megakaryocytes). The illustrations are here an outstanding feature.

About 50 pages are given to the pathologic histology of the organs of circulation, but there are no illustrations of the gross visible lesions of the organs concerned. In regard to the pathology of the lungs—unlike what occurs with the heart—toxic lesions play no important part. A little over 20 pages suffice for this subject. Beginning with the œsophagus, the digestive tract is dealt with in about 50 pages. Toxic lesions probably play a more important part in pathology of the liver than in any other organ. The histology of the pancreas is rather fully dealt with, and reference to recent experimental work on this organ is introduced. The chapter on the urinary organs is admirable, the toxic and infectious lesions being the most important. Having regard to the importance of the nervous system, 15 pages seem rather too short for the purpose.

The author has produced a noteworthy book on somewhat original lines—admirably and profusely illustrated—to set forth what he calls the principles of pathologic histology. That being so the reader must not look for a compendium of heterogeneous facts. A solid basis has been laid, and we sincerely hope that the opportunities offered by the Boston City Hospital on the one hand and an early call for a second and enlarged edition on the other will enable him to build largely on the secure foundation.

Diseases of Children.

Edited by Dr. M. PFAUNDLER and Dr. A. SCHLOSSMANN. English Translation edited by HENRY L. K. SHAW, M.D., and LINNAEUS LA FÉTRA, M.D. With an introduction by L. EMMETT HOLT, M.D. Vol. VI.: *Diseases of the Ear: A Work for the Practical Physician.* By ARTHUR J. BEDELL, M.D., Clinical Professor of Ophthalmology, Albany Medical College, Albany. With 130 illustrations. London and Philadelphia: J. B. Lippincott Company. 1914. Pp. 430. Price 21*s.* net.

WE gather from the introduction to this volume that it is an addition to the original treatise on diseases of children, published in Germany, and it is obvious that the attempt to write a book of the size of the one under consideration, of some 400 pages, on diseases of the ear in infancy and childhood, must of necessity be a very difficult task. Indeed, we think it open to question whether such a work is really as imperatively demanded as Dr. Bedell seems to think.

Practically the first hundred pages are occupied by a description of the anatomy and physiology of the ear, and testing of the hearing and ears, which includes the examination of the labyrinth according to the latest methods. The book that Dr. Bedell has given us would more easily, we think, be read as a general treatise on otology than as one dealing especially with children, for he describes sabre cuts as a cause of extradural abscess, although he certainly says they are rare in childhood, a statement with which we are thoroughly in accord. But he is certainly not very clear in describing the connexions which may occur between catarrhal and otosclerotic changes, nor about their differential diagnosis. This subject is a particularly difficult one, and it is a mistake in such cases to be too dogmatic. It is very interesting to notice that in the preface Dr. Bedell suggests that otosclerosis may be present in utero.

We congratulate Dr. Bedell on the excellence of the majority of the illustrations. These are practically all original and very clear and well executed. The book is admirably got up, though, like many American books, it is rather weighty. The best portions of the book are those dealing with the affections of the ear in general diseases, to be found in the final chapters. We cannot help feeling that, although one would be justified in praising this work on diseases of the ear in children as a desirable acquisition, in future editions it is capable of being transformed into a work on general otology which would be very useful to practitioners of general medicine.

A Manual of Bacteriology, Clinical and Applied.

By R. TANNER HEWLETT, M.D. Lond., F.R.C.P. Lond., D.P.H., Professor of Bacteriology in the University of London; Lecturer on Bacteriology, London School of Tropical Medicine, &c. Fifth edition. London: J. and A. Churchill. 1914. Pp. 668. Price 10*s.* 6*d.* net.

IT is needless to review in detail or to describe the character and arrangement of this well-known and popular text-book of bacteriology, which has now reached its fifth edition. Suffice it to say that the reader who approaches bacteriology from the standpoint of the medical student, the practitioner, or the medical officer of health will find all that he requires in this work. This edition has been very thoroughly revised, and the alterations and additions, though small, are very numerous, and suffice to bring the information up to date. Fortunately, also, the effect has been to reduce the book slightly in size, though this is in part due to alterations in type.

In the general portion of the book there are some changes, such as the introduction of Dobell's classification and his views on the nucleus, while in connexion with anaphylaxis Dale's striking experiments are given. In the chapters dealing with specific organisms the principal changes are found in those concerned with the streptococci, B. anthracis, B. tuberculosis, B. lepræ, B. typhosus, and Sp. choleræ. Organisms resembling the anthrax bacilli are described, and some of the later work on disinfection in connexion with this disease is given. Spengler's views on the existence of two types of human tubercle bacilli are introduced, with their possible bearing on the interpretation of cases of human tubercle caused by the bovine type of bacillus—cases which the author seems to regard as of relatively slight importance. Henderson Smith's classification of the non-lactose-fermenting bacilli has replaced Löffler's grouping of the typhoid-colon bacilli, while there is an increase in the number of types of dysentery bacilli which are recognised. Further work on the hæmolytic properties of the cholera spirillum is introduced. In the previous edition the increasing importance of the protozoa was recognised, so that the changes in this portion are such only as are required by recent additions to our knowledge. The classification of the yeasts has been altered, and sporotrichosis and thrush are now grouped with the hyphomycetes.

The book, as were the previous editions, is well produced.

Practical Prescribing, with Clinical Notes.

By ARTHUR H. PRICHARD, M.R.C.S. Eng., L.R.C.P. Lond. London: Henry Frowde. 1913. Pp. 307. Price 6*s.*

Mr. Prichard has adopted the plan of epitomising a number of cases to illustrate the effects of various drugs. These are shown side by side with the prescription sheet and clinical notes. This is a good practical plan and should prove interesting and instructive to students. For example, the course of a case of acute gout is described day by day, together with the treatment adopted and the prescriptions which were given, the reasons for using the various therapeutical measures being fully discussed. An attack of influenza is similarly considered. The various systems of the body are then taken in order, the remarks being based on illustrative cases. The therapeutic methods are on the whole sound and practical. A typical case of mitral regurgitation with failing compensation is described, and stress is rightly laid on the value of rest in such circumstances, and the administration of digitalis is explained at length. The treatment of diseases of the stomach is well given, an interesting case of cyclic vomiting and one of "habit vomiting" in a child being discussed.

We think this work will be found useful in general practice and to students when doing their ward work, and more especially to those who wish to obtain practical knowledge in prescribing.

The Treatment of Neurasthenia.

By Dr. PAUL HARTENBERG. Translated by D. ERNEST PLAYFAIR, M.B., M.R.C.P. Edinburgh, Glasgow, and London: Henry Frowde and Hodder and Stoughton. 1914. Pp. 284. Price 6*s.* net.

THE very number of books on the psychoneuroses may bewilder the practitioner from the multitude of counsels therein contained. Their variety is sure proof of the absence of any specific for the treatment of neurasthenia and allied conditions. Each successful physician advocates his own methods, for in his hands they lead to the maximum of results. Whether they will do so when applied by others is another matter; the physician does not allude, as a rule, to the personal factor when summarising his own achievements in therapeutics. Dr. Hartenberg's book, however, will meet with the approval of the average practitioner of medicine. It is wise without being pedantic, and practical without being too comprehensive. Some believe in the blunderbuss method of treatment, and load their weapons with every variety of shot in the trust that one or other will hit the mark. There is reason in the methods advocated by Dr. Hartenberg, however, and the reader will readily gather that he writes only of what he has practised and proved. His short, synthetic Chapter XIV., on the course to be followed in the treatment of a neurasthenic, could not, we think, be improved on: it contains the key to success. Another valuable chapter is on the manner in which every neurasthenic should be studied and examined.

Some successful physicians and practitioners of psychotherapy are unable to communicate the secret of their results to others, though with the best will in the world; possibly they themselves are not precisely acquainted with the elemental factors underlying their attainment of results. Dr. Hartenberg is able to indicate the signposts along the *via regia* of successful treatment of neurasthenia, and we heartily commend his book to the attention of the medical profession. The translation reads well, and we can testify to its accuracy in thought and language.

Text-book of Local Anæsthesia for Students and Practitioners.

By Professor Dr. GEORG HIRSCHEL, Heidelberg. With introductory preface by Professor Dr. WILMS. Translated by R. E. S. KROHN, M.D. Lond. With 103 illustrations in the text. London: John Bale, Sons, and Danielsson. 1914. Pp. 181. Price 8*s.* 6*d.* net.

THE chief merits of this book lie in the illustrations, which are numerous, well executed, and full of detailed information. The book, indeed, may well be regarded as arranged round these graphic representations of the various local procedures described and the sites over which they are carried out. There is but little general description of the principles involved in local anæsthetisation or even of the general technique and management of cases, but as a pictorial guide this work would be invaluable to anyone gaining his experience in local methods of anæsthesia. And the pictures are, of course, enhanced in value by the descriptive text. The book begins with a historical survey of local anæsthesia, and a short section is devoted to indications and contraindications for the method. The use of morphia in conjunction with local anæsthetics is strongly recommended. Novocaine in 1 or 2 per cent. solutions, to which suprarenin is added, is the generally recommended anæsthetic.

It is evident that local anæsthetics are far more widely used at Heidelberg, and probably in Germany generally, than is the case in this country. One reason for this, no doubt, is that less attention is paid there to the practice of general anæsthesia, and no body of men is to be found comparable to the specialists attached to the large hospitals in Great Britain who make the administration and teaching of anæsthetics their sole work. Dr. Krohn has done his work as translator well.

Surgery of the Vascular System.

By Bertram M. Bernheim, A.B., M.D., Instructor in Surgery, the Johns Hopkins University, Baltimore. With 53 illustrations in the text. Philadelphia and London: J. B. Lippincott Company. Pp. 104. Price 12*s.* 6*d.* net.

The surgery of the blood-vessels will become of greater importance, but already we see that, though it is but at the beginning of its growth, it is of considerable value. There is, however, a danger that its progress may receive a check from its indiscriminate and unskilled practice by those who have not appreciated the niceties requisite to attain success. This little book contains full and careful accounts of the technique which has been found necessary for blood-vessel surgery. Chapters deal with the suture of vessels, transfusion, transplantation, the surgery of aneurysm, and the surgery of the heart.

The book is eminently practical; it gives the surgeon who is new to this branch of surgery just the information that he needs, and we consider that it forms a trustworthy guide to the surgery of the vascular system, but the surgeon must not overlook the fact that considerable practice is essential before reasonable certainty of success can be attained. The illustrations are very good.

LIBRARY TABLE.

The Progress of Eugenics. By C. W. Saleeby, M.D., Ch.B., F.Z.S., F.R.S.E. London: Cassell and Co. 1914. Pp. 259. Price 5*s.* net.—This book is primarily a propagandist essay rather than a contribution to science. The author's aim is to exhibit the eugenic ideal in its pure form, disembarrassed of all those extraneous and even conflicting objects which tend to create prejudice against it and to hinder its progress. Thus he complains that its advocacy has been made a pretext for the inculcation of class prejudice, has been used as an argument against love, as a reason for unjustifiable operations, for the neglect of infancy, and "for wild talk about lethal chambers and stud farms." Dr. Saleeby insists that none of these things belong to the true conception of eugenics; they are, on the contrary, he asserts, the outcome of a false and shallow materialism with which its aims have nothing in common. It is, he points out, an abuse of Galton's distinction between "nature" and "nurture" to exalt one set of conditions at the expense of the other, the amelioration of both being equally indispensable to that of the race. Hence there is no real conflict between the aims of the eugenist and the social reformer, which are on the contrary complementary and interdependent. The whole of nurture is in fact admitted by the second clause of Galton's definition of eugenics as "the science which deals with all influences that improve the inborn qualities of a race; also with those that develop them to the utmost advantage." The first main division of the book deals with principles, the second with the search for knowledge, and the third with the progress of primary eugenics, positive, negative and preventive. One of the most interesting parts of the last-named section is that dealing with the problem of "the impure dominant"—individuals personally normal, half of whose germ cells carry a defect. The book bears on every page evidence of wide knowledge and enthusiasm. It is, however, marred by a complacency, strangely alien to the spirit of that great man, the founder of eugenics, for whom the author expresses so much admiration.

A Complete Handbook of Midwifery for Midwives and Nurses. By J. K. Watson, M.D. Edin. Third edition, thoroughly revised. With over 150 illustrations. London: The Scientific Press. 1914. Pp. 360. Price 6*s.* net.—The author thinks that in a text-book of this kind some of the subjects treated should be those which a midwife would not have anything to do with in the practice of her art. He has therefore endeavoured to give such knowledge as can be assimilated by one who has not had the advantage of the scientific training of the medical student. He thinks that the midwife who has taken pains to become conversant with the theory of the subject will be more ready to appreciate her own dependence on medical assistance in times of difficulty. His aim, therefore, has been "too much" rather than "too little." This third edition has been thoroughly revised and some new illustrations added. The book is a good one of its kind, and although all will not agree with the views of the author as to its scope, as it concerns nurses and midwives only, yet they must admit that he has performed his task well.

The Royal Dental Hospital of London Annual Reports for 1913. London: John Bale, Sons, and Danielsson. Pp. 128. Price 5*s.*—The original communications in this volume reach a high standard of excellence. Mr. J. G. Turner, in an able paper on dental caries from a clinical standpoint, discusses the incidence of caries in the lower animals, the relation of the disease in man to food, and the mode of attack and progress in the individual. The paper is a very thoughtful and careful piece of work. Dr. Dudley Buxton contributes a paper on the nitrous oxide gas, and Mr. G. H. Berwick, in a thoroughly practical communication, deals with the treatment of difficult artificial dentures. Mr. J. F. Colyer writes on the subject of periodontal disease, and insists on the important relationship between mouth-breathing and the disease. He shows also that in some patients there are considerable toxic effects where the marginal gingivitis is marked and there is but little bone destruction. Dr. H. W. C. Austen records two extremely interesting cases of round-celled sarcoma of the mandible. The reports clearly show that dental surgery has taken its proper place in scientific medicine.

MISCELLANEOUS VOLUMES.

A BATCH of books lies before us having reference to various aspects of the sex problem, which seems to press so insistently on the present age.

With regard to the teaching of sexual physiology and hygiene, an admirable little book that aims to express in simple terms, understandable by pupils of elementary schools, the principal facts of growth and development, first in plant and then in animal life, and gradually to educe the relation of these facts and principles to human life, is *Plant and Animal Children: How they Grow* (London: D. C. Heath and Co., and George G. Harrap and Co. Pp. 230. Price 2*s*. 6*d*. net), by ELLEN TORELLE, M.A. The plan is excellent and will undoubtedly fulfil its express aim of making clear the ideas of evolution, heredity, variation, the effect of environment, and the evolution of sex without ever mentioning the names. These will be self-explanatory when they are encountered later by persons already well grounded in the ideas they represent. By the scheme of instruction adopted in this book the child will gradually and naturally be led up without any shock to the understanding of its own sexual nature.——*The Biology of Sex for Parents and Teachers* (same publishers. 1913. Pp. 105. Price 2*s*. net), by Professor T. W. GALLOWAY, Ph.D., is a more advanced and detailed account of sex facts intended to aid teachers in giving sex instruction. The author points out that, while the common objection is true that mere knowledge does not insure right conduct in any department of life, of those individuals who know the facts in a given situation a larger percentage make right choices than in the case of a mixture of informed and ignorant persons taken at random. We can approve the principles of sex instruction laid down in this book—that such instruction must be properly graded; that it must be different for boys and girls (who should be taught separately, at any rate after the broad impersonal studies of the preliminary classes in physiology); that it should follow on curiosity, but should precede the actual need of instruction, and should be incidental to other teaching; and that mere biology is not enough, all possible help from psychology, sociology, ethics, and religion being accepted.——*Hygiene for Girls: Individual and Community* (same publishers. Pp. 257. Price 2*s*. 6*d*. net), by FLORENCE HARVEY RICHARDS, M.D., is, on the whole, a commendable book. In view of the general teaching of elementary physiology, attention is mainly directed to its applied form—viz., hygiene. The book is in two parts, individual hygiene and communal hygiene. Both are good, but in the second part, while especially commending the sane restraint of the chapter on alcohol, we must take exception to the routine circulation of certain common statements in regard to tobacco, which are unsupported by fact—at least, in this country. The bald statement "Cigarettes are much more injurious than pipes or cigars because the smoke is inhaled" would be more correct if stated "when the smoke is inhaled." Thousands of habitual cigarette smokers never inhale; in fact, we should say that in this country inhaling is the exception. Further, we must altogether demur to the assertion, so often made in the United States, that "opium is common in cigarettes." Many examinations of cigarettes have been, and are being, made from time to time in THE LANCET Laboratory, and opium has never yet been found. Lastly, the statement that "nicotine ...... is responsible for the bad effects of tobacco," is only partially true. To some slight extent it is so; but it is probably a far less injurious factor than the carbon monoxide and the pyridin bases which are the products of incomplete combustion. It is immoral, however virtuous the motive, to spread broadcast common delusions which, if they ever had any presumptive ground, have been completely disproved. The chapter on patent medicines contains some useful information that is worthy of general dissemination. The concluding chapter on the hygiene of the reproductive system is suitably written.——The caution requisite in regard to relying too entirely on the physiological factor in sex education, to the neglect of the moral factor, is well emphasised by the Rev. FRANCIS HEIERMANN, S.J., in a reprint of an article from the *Lancet-Clinic* of Cincinnati, U.S.A., on the *Teaching of Sex Hygiene in our Schools*. Father Heiermann, while admitting that under modern conditions some instruction in sex hygiene is useful and necessary, maintains that after well-guarded instruction given in private by the parent, or at the special request of the parent by a competent physician or spiritual guide—as he puts it elsewhere, "Some individual teacher may be capable of giving the desired information privately to some individual scholar, with tact and in a few words"—there should follow a policy of reticence. The cultivation of purity must be based on character building and will power, and "how this will power can be cultivated without religious motive and without religious influence is incomprehensible." He quotes the witty saying, "It is now *sex* o'clock in literature and art."——The awakening towards the evils of the venereal diseases is the subject of M. A. CORBETT-SMITH'S *Problem of the Nations* (London: John Bale, Sons, and Danielsson, Limited. 1914. Pp. 107. Price 1*s*. 9*d*. post free). The author, who is not a medical man but a barrister, describes his book as a plain straightforward account of the greatest curse known to civilisation. As lecturer in public health law to the Royal Institute of Public Health he has found the doors of official statistical bureaux and Ministries of Health all over the world unlocked to him, and the names of the several eminent authorities, British and foreign, for whose "courteous and willing assistance" he returns thanks in his preface, lead us at the outset to expect a carefully reasoned statement of the human and sociologic aspects of these diseases. The broad facts are dogmatically summed up in his letter to his godson, which closes the book, while full details and figures on which that summary is constructed are given in the body of the book. As the author says, he has "deliberately set to work, in the guise of a journalist, to pick the brains of the specialists, to put this and that fact together and to build a composite whole"; and regarded from that point of view he has accomplished his aim creditably.

JOURNALS AND MAGAZINES.

The Psychoanalytic Review. A Journal Devoted to an Understanding of Human Conduct. Edited and published by WILLIAM A. WHITE, M.D., and SMITH ELY JELLIFFE, M.D. Issued quarterly. $5 per volume. The Journal of Nervous and Mental Disease Publishing Company, New York. No 1, November, 1913.—Dr. C. G. Jung, of Zürich, contributes an article on the theory of psycho-analysis. It consists of his lectures on the subject delivered in America in September, 1912, and is continued in the next number of the *Review*. Here the reader will find clearly stated Dr. Jung's position in regard to Freudism. He explains how he has moved away somewhat from his original conception of sexual libido, allowing that many important functions have no longer a sexual character, although originally derived from the instinct of propagation. The whole process of development consists in a desexualisation of the libido, which is conceived of rather as energy manifesting itself by vital processes.—Dr. L. E. Emerson contributes a short report of a case of self-mutilation in a young woman of 24. In this case the facts were well known to the patient, and no special psycho-analytic technique was necessary to elicit them; only when they are unknown to both patient and examiner is a special method desirable.—A case of hysterical amaurosis, in which the cause of the blindness was shown to be the patient's desire never to see his wife again, is reported by Dr. Thaddeus H. Ames.—Dr. Smith Ely Jelliffe contributes the first instalment of a useful and practical discussion on the technique of psycho-analysis.—There is a critical digest on some Freudian contributions to the paranoia problem from the pen of Dr. Charles R. Payne. It also is continued in the next number.——No. 2, February, 1914.—Dr. Jung continues his lectures on the theory of psycho-analysis. He devotes some attention to the objections that have been raised as to the Freudian assumption of the significance of the unconscious.—The well-known story of the Wildisbuch crucified saint is discussed by Dr. Theodore Schroeder from the point of view of the erotogenesis of religion.—Professor Knight Dunlap contributes a paper on the pragmatic advantage of "Freudo-analysis," in which he maintains that sexual associations are most admirably adapted for the purposes of psycho-analysis. It is in many cases unnecessary to determine the cause of the psychoneurotic condition in order to cure it. Hence the cures resulting from Freudian treatment have no value as evidence in support of Freudian dogmas.—There is a translation in both numbers, to be continued, of Dr. Franz Riklin's monograph on wish-fulfilment and symbolism in fairy tales.—The papers of the *Internationale Zeitschrift für aerztliche Psychoanalyse*, *Zentralblatt für Psychoanalyse* and *Imago* are abstracted in the *Review*. It will be seen that the scope of the *Review* is wide and ambitious. It deals with much more than the strictly medical aspect of psycho-analysis, and appeals to the student of all phases of psychology.

Parasitology. Edited by G. H. F. NUTTALL, F.R.S., and A. E. SHIPLEY, F.R.S., assisted by EDWARD HINDLE, Ph.D. Vol. VII., No. 2. June, 1914. Cambridge University Press. Price 10*s*. net. Yearly subscription 30*s*.—The Trematode Parasites of North Queensland. II. Parasites of Birds, by William Nicoll, is a further account of the trematodes obtained by the author during the examination of numerous species of Australian birds. In the present paper no less than 11 new species are described belonging to the genera Opisthorchis, Orchipedum, Echinostomum, Echinochasmus, Clinostomum, Hæmatotrephus, and Platynotrema, the latter being a new genus, founded for the reception of two species occurring respectively in the gall-bladder and liver of a stone-curlew.—An Epidemiological Study of Filariasis in Ceylon, by P. H. Bahr, contains useful information regarding this disease, together with a map showing its distribution in Ceylon. Only Filaria bancrofti was found, and here it is definitely nocturnal in its habits. In the endemic areas its distribution is apparently of a most capricious character, for in some of the villages at least 26 per cent. of the adults are infected, whilst in neighbouring villages the inhabitants are quite free from the parasite and its associated diseases.—Studies on Malaria in Ceylon, with Special Reference to its Prevention in Agricultural Districts, by P. H. Bahr, is mainly concerned with malaria in Kurunegala. In this town malaria is mostly of the quartan type, and at least six well-known malaria-conveying anophelines were found. The paddy fields are the main and most extensive breeding areas of these mosquitoes, and therefore the author advises that wet cultivation within town limits should be forbidden, as being the only means calculated to abolish endemic malaria. This measure presents no insuperable difficulties, as may be seen from the perusal of Appendix V. of the paper, where it is definitely stated that the substitution of cocoanut for paddy cultivation is perfectly feasible, and is indeed commercially a profitable venture. This interesting paper is illustrated by maps and numerous plates, which give one a very good idea of the conditions affecting the transmission of malaria in Ceylon.—Observations on the Larvæ of Fleas, by A. W. Bacot and W. G. Ridewood, contain detailed descriptions of the external features, and also notes on the habits, of the larvæ of six species of fleas—viz., Pulex irritans, Xenopsylla cheopis, Ctenocephalus canis, Ceratophyllus fasciatus, Ceratophyllus gallinæ, and Heptopsylla musculi. Figures are given illustrating the various larvæ and also tables in which are summarised the differences in the characters of the larvæ of the six species investigated. This paper will prove very valuable to plague investigators who may be concerned with the rearing or identification of fleas.—The Posterior Stigmata of Dipterous Larvæ as a Diagnostic Character, with Especial Reference to the Larvæ Incriminated in Cases of Myiasis, by Malcolm Evan Macgregor, is a most useful attempt to classify dipterous larvæ according to the characters of their posterior stigmata. Both physicians and entomologists have long felt the want of some method of determining the immature stages of flies, for in cases of myiasis it is rarely possible to rear the larvæ to the adult stage. The author recognises two types of stigmata named respectively the schizotreme and ptychotreme types. Examples are then described of the stigmata of various common diptera, the differences between them being well shown in the excellent photomicrographs accompanying the article.—The Occurrence of Oxyuris Vermicularis in the Human Vermiform Appendix, by J. Alexander Innes and A. Elmslie Campbell, contains the results of a study in Aberdeen of 100 unselected cases of appendicitis, in which the appendices operated on were examined for the presence of intestinal parasites. 17 per cent. of the appendices were found to be infected with Oxyuris vermicularis, but no other parasites were found. Normal appendices showed a much lower percentage of infection, but the proportion is probably higher in children than in adults. The recurrent type of appendicitis was found to be most frequently associated with oxyuris infection, and the authors are of the opinion that there is probably a clinical type of oxyuris appendicitis. The suppurative type of appendicitis has practically no relationship to infection with this parasite. Trichocephalus trichiurus is not often found in the appendix in Aberdeen district, the authors not finding a single example during the examination of over 100 appendices.

British Dental Journal.—The issue of this journal for July 1st contains an abstract of Mr. J. Howard Mummery's paper before the Royal Society on the Process of Calcification in Enamel and Dentine. The author shows that the process is in great part a physical phenomenon, and that the actual deposit occurs in the form of calcospherites. In the formed tissues the shape of the calcospherites is not retained, and it is suggested that as phosphates are added from the blood the calcospherites break down and the disintegrated particles form the finally consolidated enamel. Dr. H. Vallow contributes an article on Tuberculosis in Relation to Dental Disease, and considers that every tuberculous patient should have the teeth efficiently attended to and that the money thus spent would be economically used.

CONFERENCE OF THE NATIONAL ASSOCIATION FOR THE PREVENTION OF CONSUMPTION.

THE Sixth Annual Conference of the National Association for the Prevention of Consumption and other Forms of Tuberculosis was held at Leeds on July 7th and 8th. The Lord Mayor of Leeds, Mr. E. A. BROTHERTON, presided over a well-attended assembly. After the Lord Mayor had welcomed the delegates, Dr. M. E. SADLER, Vice-Chancellor of the University, said that one of the highest duties and most hopeful tasks of a university was to share in the campaign for social welfare. He hoped the University of Leeds would be given means to develop in conjunction with the Leeds Infirmary its medical and pathological researches. He suggested that the economists present by the influence of their teaching might help the country to realise that there were changes which, by liberating the human soul and giving it a sense of greater power and opportunity, might richly repay by their results the initial cost of introduction. The University might also send out yearly a body of young people illuminated by knowledge and possessed of a sense of the duty of public service.

Housing and Tuberculosis.

Sir WILLIAM YOUNGER, in a paper on the House in Relation to Tuberculosis, said that so far as the evidence went the house was clearly a dominant factor in tuberculosis. He referred to his recent observations as a member of the Royal Commission on Housing in Scotland, and said it seemed heart-rending to send persons to sanatoriums if in a few months they had to return to surroundings largely responsible for the original breakdown. He cited the experience of Edinburgh and Glasgow to demonstrate the relation between congestion and insanitary housing and the tuberculosis rate. And the same story could be told for the country. He referred to the great increase in tuberculosis in the islands of the west coast of Scotland since the beginning of the nineteenth century, which was ascribed to the importation of the bacillus by servants returning home, the development of which was favoured, in spite of the open-air life, by the insanitary conditions of the housing there. Edinburgh and Liverpool, he said, showed what could be done by rehousing schemes in reducing the tuberculosis rate.

The Marquis of SALISBURY said that the most important point in building cottages was to build enough of them to avoid overcrowding with its injury to health and morals. He gave some practical hints on cottage building, and said that the garden city limit of ten houses to the acre had had excellent results on the children's health.

Sir ROBERT W. PHILIP said that the hope for the tuberculosis problem lay in projecting a searchlight into the home along scientific and humane lines, not by the inquisitorial visit of a lay officer, no matter what powers he might be endowed with. The future mothers and fathers of the race must be educated by skilled, sympathetic teachers. Men and women were wofully ignorant of the larger measures of healthy living and self protection. The object lesson of the sanatorium must be enforced in the home.

Mr. W. CARBY HALL, chairman of the development committee of the Leeds corporation, described some typical cottage designs which could be built in Leeds at the present price of building materials and labour for about £160.

Dr. J. SPOTTISWOODE CAMERON, medical officer of health for Leeds, pointed out that the phthisis mortality in Leeds had been steadily decreasing. At the Census of 1911 6 per cent. of the houses in Leeds had more than two persons to a room. During the last three years the new phthisis cases reported numbered 3472, and of these 57·9 per cent. lived in houses in which two or more persons occupied one room. Overcrowding in Leeds, as measured by two persons to a room, was greater among those suffering from phthisis than in Leeds as a whole, and among the patients in these crowded houses more than half had not a room, and nearly half not even a bed to themselves.

Colonel G. Kyffin-Taylor, M.P., Chairman of the Liverpool Housing Committee, said that Liverpool's experience showed that it was no use tinkering with slums, which must be swept off the face of the earth; and because slum dwellers were unable as a separate family to obtain a separate house, the municipality must see that the people were rehoused. After 12 years' work in the Scotland and Exchange divisions of Liverpool, in spite of all that sanitary science could do, the average mortality for the three years ending 1893 was in the Scotland division exactly the same as in 1873—viz., 35·1 per 1000, while in the Exchange division it had actually increased from 34·3 to 36·7 per 1000. The death-rate began to fall when the corporation began to clear and rebuild, the average death-rate for the three years ending 1913 being in both divisions 29·5, a saving of nearly 6 per 1000. Last year it was for Scotland division 27·5 and for Exchange 28·41. After the municipality began to make bold clearances, combined with rehousing, a fall in the tuberculosis mortality rate of 38 per cent. took place in 17 years.

Tuberculosis in Children.

At the afternoon session Professor R. Lawford Knaggs, of the University of Leeds, read a paper on Tuberculosis in Children from a Surgical Point of View. He said that whatever surgical treatment might be necessary at no time ought medical treatment to be omitted, for it was essential in every case of tuberculosis. Surgical procedure was based on one of two principles, either the removal of the disease focus or fluid alone, or cutting wide of that through surrounding healthy parts. The first principle was the only one admissible in certain cases—tuberculous ascites, pleuritic effusion, spinal and some glandular abscesses, and some cases of tuberculous inflammation of bone. The second, by dissection through the surrounding healthy tissues, designed to obtain a clean wound free from infected material, was suitable where the tuberculous trouble was confined within a definitely capsulated organ preventing rapid extension. Many cases of tuberculous glands and renal tuberculosis were best treated thus, and also the large group of bone tuberculosis. In aspirations of abscesses and erasion of joints the first principle was involved; in excisions and amputations the second.

Mr. H. J. Gauvain, medical superintendent of the Treloar Cripples' Hospital, Alton, considered the time had come when the knife could be absolutely dispensed with in tuberculosis, except to make good defects arising out of the former treatment. The conservative method of restoring and preserving the part attacked was the treatment of the future. That treatment needed large institutions in which it could be carried on. It was far more neglected in this country than on the continent. Crippling from tuberculosis was almost entirely preventable. He showed lantern slides demonstrating the treatment followed at Alton.

Mr. J. F. Dobson, of Leeds, concurred in discouraging operative intervention, and deplored the scarcity of beds whereby improved methods of treatment would become possible. This was due solely to lack of funds.

Mr. H. J. Stiles, surgeon to the Edinburgh Children's Hospital, said that in Scotland 75 per cent. of surgical tuberculosis among children was of bovine origin. In 37 per cent. of his operative cases in children there was histological evidence of tubercle in the tonsils, mostly the bovine bacillus. He urged inspection of milk adequate to secure a pure milk-supply.

Professor Sims Woodhead said every single measure—proper housing, ventilation, adequate rest—against any one of the factors of tuberculosis was of great importance. He asked them as public health authorities to pay attention to each factor mentioned by the various experts.

Dr. Nathan Raw, of Liverpool, also emphasised the importance of milk as a causative factor.

Alderman Anthony Shelmerdine, of Liverpool, described the electrical sterilising process for milk in use in Liverpool.

In the evening Dr. Nathan Raw delivered the popular lecture on tuberculosis in association with the Tuberculosis Exhibition before a large audience, and particularly emphasised the need for suppressing the spitting nuisance.

The Prevention and Treatment of Tuberculosis.

On the second day Sir William Osler read a paper in which he divided the tuberculous public into three classes. In the first nearly all of those present were included, for probably some small tuberculous focus could be found in 90 per cent. of all people. That we did not all die was due to the fact that the human race had attained a certain measure of immunity. The second group comprised those in whom the disease was active enough to produce symptoms, but in whom cure was still possible, with restoration to working health. The third group consisted of the doomed, in whom progression took place to a more or less remote end. This was the fate of between 50,000 and 60,000 persons a year. A single problem was linked with each group. In the first it was to give such health of tissues to every unit, child or adult, in the kingdom, that the parasites might be as surely dealt with as the oak dealt with those on its bark. When the children enjoyed their proper heritage of health, the workers had a living wage, the houses were homes, and the nation spent in food what was now being spent in drink, there would be millions instead of hundreds of thousands of immunes. The problem of the second group concerned the 250,000 to 300,000 people with cough, loss of weight, fever, bacilli, and definite signs in the lungs or obvious involvement of some other part. There were three essentials to cure—education, control, and a rigid regimen. These were best obtained in a well-conducted sanatorium, or failing that by institutional treatment. The primary need in every district was a census of the cases. Patients must be made to realise that a long, hard, uphill fight was before them, but with rigid and effective control a regimen as strict as that of a sanatorium might be carried out at home. With regard to the third group, nothing was more important than the care of these chronic incurable cases. Safe care was almost impossible in houses, and an addition to the law was necessary by which segregation could be provided for and where necessary enforced.

On the various aspects of Domiciliary Treatment, papers were read by Dr. H. de Carle Woodcock, Dr. Arthur Dennison, Dr. Cecil Wall, Dr. H. J. Campbell, and Mr. H. W. McConnell. Dr. Edgar L. Collis and Miss Emily Sadler dealt with the Factory in Relation to Tuberculosis, Dr. T. D. Lister with the Home in Relation to Tuberculosis, and a general discussion ensued, in which Dr. Halliday Sutherland, Dr. A. Christy Wilson, Mr. Harry Kew, Major Dod, Mr. J. Sullivan, Dr. W. Osborne Greenwood, and the Chairman, Lord Glenconner, took part. Votes of thanks were passed to the Lord Mayor, the University and its Vice-Chancellor, the Infirmary Board, &c.

CONGRESS OF THE ROYAL SANITARY INSTITUTE.

The twenty-ninth Congress of the Royal Sanitary Institute was held at Blackpool on July 6th to 11th, under the presidency of the Earl of Derby. There was an attendance of upwards of 1000. Delegates appointed by over 230 authorities, including many of the over-sea dominions, were present, and there was a considerable proportion of women. Both the scientific and social arrangements were excellent, and the Congress was a great success. In the course of the Earl of Derby's address, delivered on the opening day, reference was made to health in its relation to the army. Whereas some years ago the presence of the military was regarded with misgiving, more especially on account of contagious disease and the soldier's easy carelessness, he urged that now not only could this feeling be no longer reasonably entertained, but also that individual soldiers, by their wholesome training in hygiene, constituted after their discharge healthy units of the community, from whom, indeed, their civilian associates could learn many useful lessons.

Discussions through the week ranged themselves into sections and conferences. The sections included sanitary science and preventive medicine, domestic hygiene, engineering and architecture, and hygiene of infancy and childhood.

The conferences concerned representatives of sanitary authorities, veterinary inspectors, medical officers of health, engineers and surveyors, sanitary inspectors, and port sanitary authorities. The variety and range of discussion prevent, in a limited space, notice being taken here at all commensurate with the value of the subjects treated. The effects of the later trend of legislation, especially as regards National Insurance, town planning, and care of children naturally came in for very general notice in many sections.

Working of Insurance Act.—Juvenile Employment.

The paper by Dr. J. NIVEN, medical officer of health of Manchester, on the Working of the Insurance Act attracted a large audience. He said that this far-reaching measure had not produced any great immediate effect on public health administration except as regarded tuberculosis, though it promised in the future to do so. He noted that so far provision of machinery had prevented local authorities from investigating the exact workings; nor had sufficient time elapsed to allow the determination of incidence and distribution of sickness. After explaining Manchester's provisions for tuberculosis, he questioned the value of the policy of the 6*d.* for domiciliary treatment. He was of opinion "that the effect of the sanatorium clauses of the Act will ultimately be that a great reduction in tuberculosis will occur, but time is required to complete the machinery." The Act, he considered, was in many ways imperfect, but it represented what it had hitherto been possible to accomplish.—In the discussion many points were raised, such as the lack of supervision of children suffering from tuberculosis, the abuse of the union infirmaries by recipients of pensions, and the interest with which England's experiments in insurance are regarded by our colonies.

In the same section a valuable paper was read by Dr. W. STEWART STALKER, medical officer of health of Swinton, in which he referred to juvenile employment. He said that medical inspection in schools had succeeded in obtaining partial or complete school exemption for children under 14 on account of physical disability; for 1912, 246,000 children were thus exempted. But following this step nothing more was done to follow these cases up when they sought employment. It was true that if they entered employment under the sphere of the Factory and Workshop Acts medical supervision again guarded them; but, as a matter of fact, only a proportion (133,000 out of 246,000) sought such employment. Consequently the remaining 113,000 children, already noted as physically questionable, passed uncontrolled into occupations in many cases positively dangerous. Dr. Stalker thought it desirable to extend the range of compulsory notification on the lines of the Factory and Workshop Acts, to coördinate the work of the school medical officers with the factory doctors, and by these means to lessen the chances of children engaging in work incoördinate to their physical capacity.

Other Papers and Discussions.

In other sections the value of training for mothers and the care of early infant life received much recognition. Professor H. R. KENWOOD emphasised the importance of education of mothers. He said that an extended and coördinated scheme was required. Some hygiene might be taught in schools, but later training was of more value. Evening classes should be held for young married women, and local authorities should do everything to bring the same into notice and popularity. Finally, the present midwives and medical men could do far more for antenatal and infant hygiene.

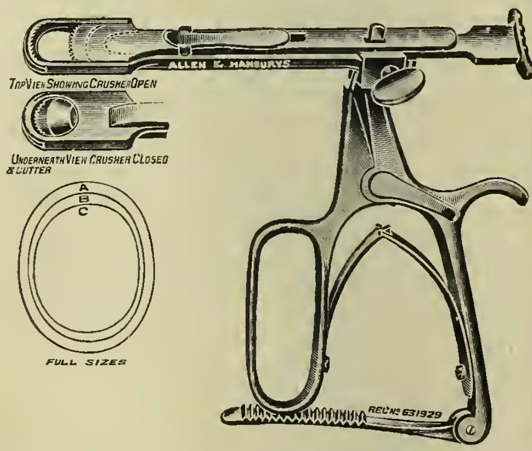
Sir HENRY TANNER discussed White Lead and its Disuse for Painting. Mr. T. G. LUMB on Town Planning and Garden Cities, and Mr. SEARLES-WOOD and Mr. WICKFORD POTTER on the Housing of the Agricultural Labourer dealt with matters indirectly concerning practical medicine.—Mrs. CLOUDESLEY BRERETON read an interesting paper upon the Modification of Basement Houses.—Professor S. DELÉPINE and Dr. A. GREENWOOD described their observations upon the Action of some Metals upon Certain Water and other Bacteria. They found that lead, iron, and aluminium, which were acted upon by water, were without appreciable effect (lead) or had only a slight inhibitory effect (aluminium and iron) upon bacterial growth. On the other hand, copper, silver, zinc, and mercury had a powerful inhibitory action; in smaller doses, however, these agents led to increased growth of bacteria. All bacteria were not affected in the same way or to the same extent. While soft water acting upon copper and lead was very rapid, the bacterial contents were not affected by the passage of lead into the water; but copper passing in, was attended with complete or almost complete sterilisation in about half an hour.—Port sanitation was discussed by Dr. W. M. WILLOUGHBY on Rat Plague and the Powers of a Medical Officer of Health to Cope Therewith; by Dr. HERBERT WILLIAMS on Insanitary Conditions on Shipboard; and by Dr. J. HOWARD-JONES on Diseases Incident upon Seamen and their Prevention. These form some of the most suggestive and valuable of the papers considered during the week.

An interesting health exhibition was well patronised, and the abundant facilities for excursions and amusements upon which Blackpool can rightly pride herself ensured success for the social amenities of the Congress.

New Inventions.

A NEW TONSILLECTOME.

THIS instrument was designed for the complete enucleation of tonsils, removing them with their capsules from their beds with practically no loss of blood. The method used is approximately that of Sluder, but in addition to the one cutting blade there is a crushing blade which enters between the anterior faucial pillar and the tonsil and effectually crushes all vessels between the capsule of the tonsil and its bed. When the crushing blade has been pushed home it remains locked in this position by the Hagedorn catch at the base of the handle of the instrument. A light pair of fixation forceps is then applied to the protruding tonsil (i.e., on the uvula side of the crushing blade) and the cutting blade, which enters between the crushing blade and the tonsil, pushed home. The tonsil is then lifted out on the fixation forceps. The crushing blade being still applied to the vessels which have been cut through may be left on for a few moments, and then gradually released by depressing the catch with the little finger. The method is a simple one. There is no bruising of the faucial pillars or surrounding tissues; no muscular tissue is removed, and in vigorous adults, where the risk of hæmorrhage may be great, it offers the safest possible way of preventing bleeding, in that all vessels which have been cut through can be held just as long as the operator pleases, and when released the proximal ends have been thoroughly crushed by the serrated edge of the crushing blade. The blades of the instrument are made in three sizes (see A, B, and C on the illustration), all fitting one handle, and the one chosen should be of such a size that the tonsil can be just comfortably pushed through the ring. I use a Doyen's mouth gag, but the gag should not be opened to its fullest extent as this tightens the faucial pillars unduly and diminishes the mobility of the tonsil. The fixation forceps are only necessary to prevent the tonsil from falling down when it has been isolated.


ALLEN & HANBURYS
TOP VIEW SHOWING CRUSHER OPEN
UNDERNEATH VIEW CRUSHER CLOSED & CUTTER
A
B
C
FULL SIZES
REGd No 631929

The instrument has been made for me by Messrs. Allen and Hanburys, Limited, 48, Wigmore-street, London, W.

GEORGE ELPHICK, M.D. Brux., M.R.C.S. Eng., L.R.C.P. Lond.
Upper Wimpole-street, W.

THE LANCET.

LONDON: SATURDAY, JULY 18, 1914.

Nurses' Registration.

RECENT events have once more brought the problem of nurses' registration into prominence, and it is desirable that every medical practitioner should consider the matter in all its bearings and form some definite ideas, both upon the general question and upon the particular measure which is now before Parliament. With regard to the general question, we suppose there are few of our readers who are not on principle in favour of some form of legislation which would standardise the training of nurses and regularise the conditions under which nursing is practised. To paraphrase the wording of the preamble to the Medical Act of 1858, "it is expedient that persons requiring nursing aid should be enabled to distinguish qualified from unqualified practitioners," and an Act is needed to regulate the qualifications of such practitioners. Some reform of this kind is, we think, called for in the interests of the public, of medicine, and of trained nurses themselves. But there are difficulties in the way of devising and promoting legislation which would achieve what is generally desired without introducing certain drawbacks, and these difficulties are rendered much more formidable by reason of the personal factor which has been imported into the controversy. It would naturally be more pleasant to pass over this aspect of the matter, but the fact seems clear that the present situation cannot profitably be discussed even in outline without admitting that a split exists and that its causes are largely personal as well as practical.

The Bill which was introduced into the House of Commons on March 3rd by Dr. W. A. CHAPPLE [1] is expressly designed "to regulate the qualifications of trained nurses and to provide for their registration," [2] and the instrument which it proposes for carrying this purpose into effect is a central nursing council called the General Council for the Registration of Nurses in the United Kingdom. This council would prescribe a curriculum, lay down a minimum standard of training, keep a register of those nurses who have passed the examination and secured the certificate approved by the council, and exercise disciplinary powers over registered nurses. No woman whose name is not upon this register would be allowed to claim that she has been trained at a hospital and is a qualified nurse. Thus on its surface this Bill, whose introduction into the House of Commons was permitted by 311 votes to 82, bears a certain likeness in general form and intention to the laws governing the registration of medical practitioners; and assuming that such a resemblance is desirable, it might be supposed that all the best elements in the world of nursing would combine to support a measure of this kind, and that medical men and hospital authorities would with one accord urge the Government to afford facilities for its speedy enactment. But such, of course, is not the case, and this was very clearly stated by the Prime Minister when he received a deputation of supporters of a similar Bill not very long ago. Moreover, it is noteworthy, if not significant, that among the present matrons and superintendents of nursing, who have very numerously signed a petition praying for facilities for the passing of the Nurses' Registration Bill, three only of the 12 great metropolitan hospitals with medical schools are represented. Whence, therefore, the opposition in some influential quarters, and the apathy in others, towards a measure whose avowed object is the benefit of the public through the encouragement of the best class of nursing by defining and safeguarding the status of trained nurses? The answer seems to be that this Bill, excellent in many respects as it is, is the product of one party only, and that within this party the leading spirits, who supply the driving force of the movement, are wholeheartedly committed to a certain line of policy which goes beyond the simple demand for State registration of qualified nurses. Thus there is reason for regarding the present situation not so much as a conflict between the supporters and opponents of State registration, as such, but as an encounter on a grand scale between those who assert and those who deny that it is possible to fix a time limit within which a nurse can be efficiently trained. We recognise that among the vigorous opponents of the Bill now before Parliament there are some, like Lord KNUTSFORD, chairman of the London Hospital, who declare themselves against State registration for nurses in any shape or form; but the underlying causes of the split are very generally supposed to be the personal factor and the question of a three years' curriculum for all nurses. Now from the nature and composition of most of the societies affiliated to the Central Committee for the State Registration of Nurses it was inevitable that any measure advocated by that body would contain provision for enforcing a minimum training period of three years. And so it is; as can be seen in Clause 12 of the present Bill, which is unmistakable upon this point, even if the constitution of the Central Council proposed in Clause 4 left any doubt of what to expect.

Here, then, is what must be regarded as almost an impasse. On the one side there is a determined body which has been working for years to secure something which, in theory at least, makes a considerable appeal to the intelligence; while on the other side there is an equally determined body which makes out a strong practical case for leaving things very much as they are. And, indeed, so long as the London Hospital continues to serve the public and the medical profession so well in the matter of the nurses which it turns out, the advocates of State registration and a three years' curriculum merely weaken their cause by abuse of that institution. The only means by which, as it seems to us, a way out of the difficulty can be found is for the party of reform to recognise that the position cannot be stormed, although by "agreeing with thine adversary" some working measure of State registration might be got through Parliament.

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[1] THE LANCET, March 7th, 1914, p. 723, and March 21st, p. 868.
[2] Bill 88, Wyman and Sons, Fetter-lane, E.C., price 2*d*.

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Meat Inspection in the Argentine.

THE Sanitary Committee of the Corporation of the City of London have issued a valuable report made by their veterinary surgeon, Mr. T. D. YOUNG, and presented by their medical officer of health, Dr. W. J. HOWARTH, on the results of inquiries as to the conditions in which meat is obtained and inspected in the Argentine Republic. The object of the inquiry was to assist the City authorities in the duties of supervising the wholesomeness of the meat supply of London which fall to them at Smithfield market and in the large meat stores of the City. Its importance will be realised when account is taken of the fact that practically all the chilled beef which now comes to this country, and more than half of the beef which comes over frozen in quarters, is imported from the Argentine. Mr. YOUNG's report is not unsatisfactory as a whole. The conditions of the Argentine estancias are well known to be extremely favourable for the rearing of fat cattle, and both handling and management previous to slaughter have been developed on practical lines. The slaughtering establishments, frigorificos, and packing-houses appear to vary considerably in their sanitary equipment and are in some cases open to criticism. Objection has to be taken to the unsatisfactory conditions which result from wooden floors and other undesirable structural arrangements, and to places for the preparation of offensive by-products being often in close proximity to the places of slaughter, dressing, and chilling the meat. Codes of regulations providing for the cleanly handling of the meat are in some cases only partially observed, though in others much care seemed to be taken in this respect. On the other hand the large scale of the operations often enables systems to be followed in the Argentine which are in advance of ordinary practices in this country, and Mr. YOUNG notes that this is specially the case in the matter of washing the carcasses.

After a description of the system of economic disposal of the various parts of the animals, the report describes the system of inspection for disease at some length. The chief impression we gain on this matter is that a genuine and serious attempt is made in the Republic to detect and deal with disease in meat on satisfactory lines, and that pressure from this country for improvements in methods would be welcomed by the Argentine authorities. The inspecting staffs are appointed by the Government, which makes a charge to the owners of the frigorificos. Their code of instructions is, on the whole, a satisfactory one, and Mr. YOUNG'S principal criticism is that the inspectors are not always distributed among the frigorificos to best advantage and sometimes are deficient in number. His estimate that an inspector cannot examine more than 100 beef carcasses a day without getting tired or inattentive does not seem improbable. In matters of organisation the system followed has some instructive features. A convenient arrangement for dealing with tuberculous meat depends upon the insertion into the carcass of skewers indicating by their colour the organs or glands which have been found affected. This is a very ingenious arrangement, and in other ways the presence of originality and direct thinking among those engaged in the meat trade of the Argentine is displayed. It is noteworthy that the proportion of tuberculous cattle in the Republic has been found to be as high as 4 per cent., and much of the doubt entertained by the City authorities as to the sufficiency of inspection in the Argentine has resulted from the discovery of tuberculous lesions when the carcasses have been cut up in the English markets.

Mr. YOUNG makes a practical suggestion, which is endorsed by Dr. HOWARTH, that in view of the enormous development of the Argentine meat trade a permanent British veterinary officer should be attached to the British Legation at Buenos Aires, with the duty of reporting to the Local Government Board (and for the information of the English meat inspecting authorities) on the efficiency of meat inspection, the classes of meat used, and the conditions of canning of food in the frigorificos and factories. Similar officers already act in London on behalf of various foreign governments, and the suggestion has much to commend it. Since the agitation for better and more wholesome conditions of meat preparation which arose with the so-called "Chicago scandals" about eight years ago the meat industry as a whole has realised that its ultimate interests lie in the promotion of hygienic methods, and health authorities have been much more active in securing the observance of such methods. In this country Mr. BURNS'S Food Regulation Act, under which meat inspection is now undertaken at the ports of entry, must be credited with indirectly bringing about great improvements in the conditions of meat inspection and preparation abroad. But there are obvious and sometimes insuperable limitations to the inspection of meat foods when once they have passed the slaughter-house, and this is particularly the case with canned and prepared foods, the export of which from the Argentine may be expected to increase as the meat industry continues to develop there and competition increases. Here it seems probable that a relatively small amount of official investigation and first-hand information at the place of origin could save much of the time and labour now given by inspecting officers at the home ports and markets, and would also produce more efficient control over this important section of our food-supply.

Annotations.

"Ne quid nimis."

THE PREVENTION OF VENEREAL DISEASES.

WE understand that conferences have recently been held, under the chairmanship of Sir Thomas Barlow, to consider the formation of a National Council for Combating Venereal Diseases. Those present have included Sir Rickman Godlee, Sir Francis Champneys, the Bishop of Southwark, Major Leonard Darwin, Sir William Osler, Sir Clifford Allbutt, Sir Henry Morris, Sir A. Pearce Gould, Sir Wilmot Herringham, and Mr. Charters Symonds. It has been decided to form such a national council, consisting of representatives both of the medical profession and the general public. With this object a circular letter is about to be issued stating the objects of the movement, explaining its organisation, and inviting the recipients to join the council. This movement is in no small degree the outcome of the work and recommendations of the special committee of the Royal Society of Medicine, which has been in existence now for over two years, and which originated in a conference between the Royal Society of Medicine and the Eugenics Education Society.

BASEMENT HOUSES.

SOME useful practical suggestions as to the remodelling of basement houses were made at the congress of the Royal Sanitary Institute which has just been held at Blackpool. Mrs. Cloudesley Brereton, who has given much attention to this subject in consultation with sanitary engineers and architects, laid stress upon the growing inconvenience of basement dwellings in modern conditions of town life, and put forward a series of plans for dealing with basements in houses of different character and rental. It is admitted by all that in much house property, particularly where the dwelling has been sublet into tenements, the basement is often in every respect unsuited for healthy living. This fact has been recognised in recent housing legislation which prevents the use of underground rooms for sleeping where they are insufficient in height or where they do not comply with the regulations of local authorities as to light, ventilation, and other matters. In London the conditions have been very striking, and the Local Government Board has lately issued a model series of regulations for this purpose, and under these regulations and the powers of the Public Health (London) Act much has been done to prevent the occupation of the worst type of basement. The basement houses dealt with by Mrs. Brereton, however, are those of a better class, where, though the complete disuse of the basement can hardly be insisted upon on public health grounds, its presence creates many difficult problems in domestic organisation and accentuates the difficulties of securing domestic service. Public opinion, in fact, has revolted against the basement house, and the inconveniences of basement rooms in London houses are responsible in great measure for migration to the outskirts and for the large number of empty houses so often found in typical London streets of middle-class dwellings. Property owners might often give more consideration to the question of adapting such dwellings to modern requirements, and would in many cases find themselves well repaid for the capital outlay required. Mrs. Brereton's remedies for the most part consist in removing the kitchen to the ground floor, where it would adjoin the dining-room, and adapting the basement rooms as storerooms, workshops, boxrooms, and the like. In some cases, where there is sufficient space or area in front, the underground room can be opened out to serve as a covered playground or even to store a small motor-car, though the original planning of the dwelling rarely can permit this modification. The number of habitable rooms will be reduced, but this is not always a drawback, and the loss of space can be compensated for by domestic labour-saving appliances. Some of these are suggested by Mrs. Cloudesley Brereton in a manner which deserves attention from those owning or living in houses of the kind here in question.

GOLF BALLS: A WARNING.

THE structure of a golf ball does not attract as a rule the interest of the player; his only concern about it is that its composition shall be durable and such as may add possibly to the flight of the tee shot, and that it shall be true on the green. The ball may possess a power for harm of which he is not aware, but which he certainly should be on his guard against in view of a distressing accident which befel a golfer a short while ago. The pathological circumstances of the case are briefly noted in our columns to-day by Mr. Walter H. Jessop, ophthalmic surgeon to St. Bartholomew's Hospital, while the victim of the accident has also told us the story. Some curiosity having been expressed as to the composition of a certain ball in his presence a serious attempt to satisfy this was begun by stripping the ball of its cover and of its tight rubber bandaging beneath. All went well until the inner liquid core was apparently pierced in the endeavour probably to get rapidly at the mystery of the centre. There was suddenly set free a semi-fluid mass which came out with such force as to be projected on the ceiling. Unfortunately some of this mass struck the dissector sharply in the eye, which resulted in a serious injury, the surgeon to whom the patient came at first believing that irreparable mischief had been done, with a prospect possibly of the power of sight being for ever destroyed. We are glad to learn, however, that the outlook is since more favourable, and that eventually the sight and the injured tissue may be restored. The possibility of a golf ball behaving thus may not be generally known, and in ordinary circumstances would never be discovered, but nevertheless some protection is needed, we think, against this concealed danger. In the present instance it was curiosity as to the structure of the ball which led to the accident. The fate of a golf ball no longer good for golf, perhaps because it has lost its true shape or because it has become freely hacked, is likely enough to be the unwinding of its ingeniously wound rubber binding. The ball is, of course, not sold for this purpose, but there are directions now in which the good resilient qualities of the very superior rubber used in a golf ball can be turned to good account and the discarded ball may be selected as a source of this material. It ought to be known that the attempt to recover rubber in this way may be followed with disaster, and we consider that some warning should be issued with those golf balls which contain an inner liquid core of caustic consistency, subjected to the considerable pressure of its tight elastic envelope. As it is, no such warning is issued, though there may exist in the ball all the potentialities of a bomb if it is not carefully handled. Some experiments which we have made with such a ball show that the pressure exists only so long as the liquid core is held tight in the grip of its tense rubber binding. At this stage, if the liquid core is pricked by a sharp instrument, the contents are ejected with great force. If, however, the elastic binding is gradually released or unwound, the liquid core, we find, is disclosed at its full size, having had its pressure gradually relaxed, and the little bag of fluid is then practically incapable of discharging its contents. The bag of fluid, in our examination of balls of similar make to the one with which the accident occurred, consists of a little rubber bottle or flask containing a semi-fluid mass of soft soap or potash soap. The rubber bottle is closed at its neck by means of tightly bound string. Leakage is possible at this point, so that the contents may be discharged without the intervention of a sharp instrument. The potash soap we examined was very strongly alkaline, and no doubt would act as a corrosive in much the same way as free caustic alkali. Most people are aware of the exquisite pain which even soap made for toilet purposes gives when inadvertently the lather gets into the eye. When this happens with a strong, coarse alkaline potash soap used for common scouring purposes it may easily be imagined how intensified the action can be. But in the instance quoted the potash soap was also a projectile which came into contact with the sensitive tissue of the eye with great force. We think that makers of such balls should issue a caution in regard to the dangers of the liquid core existing under the great pressure of the tight rubber folds. For the sake of children who may get possession of old golf balls, we think that it should be widely known that to experiment with the structure of certain varieties is attended with grave risks.

THE PSYCHOSES OF UNDULANT FEVER.

THE symptomatology of undulant fever or Malta fever, as it will be for some time called, is being continually enriched by new elements which tend to characterise more distinctly its clinical course and at the same time contribute towards differentiating it from other septicæmic conditions. Professor A. Cantani has lately[1] drawn attention more especially to the psychical disturbances which sometimes accompany this disease due to the deleterious action of the bacillus melitensis and its products on the peripheral and central nervous system. Certain minor cerebral disturbances are familiar to those who frequently come across cases of Malta fever, and these are characterised by a special state of disquiet and agitation, a sense of complete disinclination and indifference, or at other times an unreasonable and excessive despair in the face of the reappearance of the febrile symptoms, intractable to all remedies and every change of surroundings. Many observers such as Grocco, Tomaselli, and Timpano have already described cases of nervous disturbances of the heart and respiration, dysphagia, hiccough, and obstinate vomiting, with intense headache, photophobia, and delirium; while the work of De Nunno on an experimental basis clearly demonstrated the possibility on the part of the micrococcus melitensis of causing profound histological changes in the nervous system both central and peripheral. The psychical disturbances, while they are found in some cases vaguely marked as part of the general discomfort, rarely assume so prominent an aspect as may be met with in other febrile infective diseases. As a matter of fact, only one case of severe melancholia has been recorded in association with undulant fever, but Professor Cantani now relates a case of the disease, not severe, but well marked, with enlargement of spleen and liver, with tachycardia, where conspicuous psychic phenomena made their appearance during the later stages of the malady, which had already lasted four months. The patient was subject to maniacal attacks, during which he could not be restrained in bed; he bit the sheets, uttered hoarse cries, had hallucinations of persecution, and no longer recognised his own family. In calm moments, on the other hand, he had a fatuous expression, refused food, continually asserted that he could not move his limbs, and was generally incoherent. Professor Bianchi, of Naples, who saw the case, agreed in the diagnosis that the case was one of psychosis of infective disease (undulant fever). It is difficult to explain the fact why psychic disturbances are rare in this disease and comparatively frequent in other infective maladies. For while infection by Bruce's micro-organism is a form of septicæmia benign in comparison with forms caused by other bacteria, and while it is moreover a mild septicæmia owing to the small numbers of bacilli circulating in the blood, it is, on the other hand, remarkable for its protracted duration. More observations on these lines may further tend to confirm the deleterious action of the bacillus melitensis on the central nervous system.

SIGHT IN THE MERCANTILE MARINE.

THE Board of Trade has issued a report on the new sight tests used in the Mercantile Marine. This report covers the period of April 1st to Dec. 31st, 1913. An improved wool test, in which the candidate has to match five colours, and a lantern test were used. The cases of colour blindness are divided into those definitely rejected by the local examiners and those referred for a special examination, the local examiner being doubtful. Of the 286 definitely rejected in the local examinations, 148 failed in both the lantern and the wool test and 138 failed in the lantern test only; there was no failure with the wool test which passed the lantern test. Of the 286, 93 appealed, 26 being successful. Of 125 referred cases, 20 were referred on both the lantern and wools, 101 on the lantern only, 3 on the wools only, and 1 on form vision as well. Of this number there were 30 failures; 3 of these were referred on both the lantern and wool test, 26 on the lantern only, and 1 on form vision as well. Those referred on the wool test alone were passed. From this report it is perfectly evident that the Board of Trade will no longer rely on the wool test, and ophthalmologists presumably will be in accord with the Board.

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[1] Gazzetta degli Ospedali, anno xxxv., No. 68, June 7th, 1914, Corso Magenta, Milan.

DISEASES ABOARD SHIP IN THE PAST.

AN interesting document recently presented to the Library of the Royal College of Surgeons of England is a certified copy of the "Medical Log" of a crowded slave-ship, the *Lord Stanley*, which was compiled by the ship's surgeon, Christopher Bowes, in 1792. The present donor, Mr. Arthur Bowes Elliott, F.R.C.S., is the author's grandson. It appears that in April, 1792, the ship being then bound for Grenada, a black girl complained of pain in her bowels and diarrhœa, and was treated with "haust. c. rh. & magn. alb." and a solution of vitriol. Her recovery is noted on the 24th of the month, by which date a boy has been attacked. The disease then spreads to the whole body of slaves, and some 16 deaths are noted. The log ends on July 26th, and with the epidemic still in full swing. The extreme symptoms of the disease are weakness, tremors, pains in the chest and limbs, delirium, and diarrhœa. In an interesting MS. note appended to the document Sir Ronald Ross expresses the opinion that this was perhaps not a regular epidemic. "Quite possibly," he says, "many of the slaves had tried to poison themselves on being captured." Perhaps, however, the blacks were suffering from a form of infantile diarrhœa. It is interesting to note that they are well treated and their cases carefully recorded by the ship's surgeon. Good food, for instance, is furnished them in plenty. Slaves were perhaps likely to fare better than sailors on board ship. Indeed, there is much evidence to show that the sailor was throughout the eighteenth and still more in the seventeenth and sixteenth centuries regarded as a very poor sort of chattel and a fit victim of diseases, the names of which have even not been recorded. Hakluyt's voyages furnish us with many details of epidemics on board ship. During Jaques Cartier's expedition to Newfoundland, for instance, which took place in 1535, his crew were decimated with scurvy, and in 1545 the plague ravaged the English fleet in home waters. Queen Elizabeth's captains wrote home constantly, complaining of the miserably insanitary conditions on board their ships, of the prostration and starvation of their seamen, of rats, mutiny, filth, and sepsis. Most of these horrors have been described at length by Dr. Alan Moore in his thesis for the M.B. degree Cantab., entitled, "An Examination of the Chief Causes of Disease at Sea in the Era of the Tudors and Stewarts, and of the Measures taken Against It." He quotes Captain John Smith's "Accidence for Young Seamen," published in 1626, not so long after the time when the sailors in Shakespeare's "Tempest" were calling out "Yare! Yare!" "Many supposeth," says Smith, "anything is good enough to serve men at sea." The commander should hold a contrary opinion. He should bear in mind the constant exposure undergone by his men, who "must stand to their tackelings" in the worst weather. Smith gives a list of provisions which if carried by most ships would have done much to prevent scurvy. "When a man is ill sicke," says he, "or at the poynt of death, I would know whether a dish of buttered rice, with a little cinamon and sugar, a little minced meate, or roast beefe, a few stewed prunes, a race of greene-ginger, a flap Jacke, a can of fresh water brued with a little cinamon, ginger and sugar, be not better than a little poore John, or salt fish, with oyle and mustard, or bisket, butter, cheese, or oatmeale pottage on fish dayes, salte beefe, porke and pease and sixe shillings beere. This is your ordinary ships allowance, and good for them are well ...... which is not alwayes, as seamen can too well witnesse: and after a storme, when poore men are all wet, and some not so much as a cloth to shift him, shaking with cold, few of those but will tell you, a little sacke or aquavitae, is much better to keep them in health" than beer or water. Of the horrors of foreign navies in the past we know little, but from the fact that the "calenture," a "ritual" disease, led sailors under the influence of fever to jump into the sea and began to be observed as though it were a specific malady at the end of the eighteenth and beginning of the nineteenth centuries, we are led to suppose that life aboard foreign ships was miserable enough.

A NEW SURGICAL HÆMOSTATIC.

IN spite of all that has been done, or attempted, in the effort to discover more perfect means of hæmostasis, hæmorrhage is still one of the prime hindrances to surgical advance. In an article in the *Deutsche Medizinische Wochenschrift* for June 25th Dr. E. Vogt describes the experiences of the gynæcological clinic to which he is attached in Dresden, in the uses of a new styptic named "coagulen," which has, we are told, been in use for some time in the surgical service of Professor Kocher, of Berne, who with his assistant, Dr. A. Fonio, was responsible for its discovery. This substance is a light brown, coarsely granular powder, soluble in ether, chloroform, alcohol, normal saline, and water. It is derived from the blood platelets; by what process, Dr. Vogt does not tell us. The form in which it is employed in surgery is that of the solution in normal saline, sterilised by brief boiling immediately before use. As for its value in surgery the Berne experiences to date lead its sponsors to claim that it brings parenchymatous hæmorrhage to an abrupt end; that for hæmorrhage from vessels of small calibre the simultaneous application of coagulen with artery forceps renders the use of ligatures unnecessary; and that even severer bleeding from larger vessels may be checked by pressure with gauze tampons soaked in coagulen solution. These claims have been thoroughly tested in the Dresden clinic during the past year. In operations for prolapse, in the extensive hæmorrhage that follows removal of intraligamentary tumours by shelling out, in the bleeding from the paravesical veins that may complicate the Wertheim operation for uterine cancer, after extirpation of pelvic hæmatocele, and so on, this new method of hæmostasis seems to have given satisfactory results. Another type of operation in which it proved very useful was the plastic procedure of which posterior colporrhaphy may be quoted as an example. Here the use of coagulen is said to have obviated the use of ligatures and continually repeated tamponage, the former of which introduces foreign material and the latter a source of mechanical injury to the tissues, to the detriment of the operative result. In some such operations it was found possible to dispense altogether with ligatures. Even in the major laparotomies the officers of the Dresden clinic have found coagulen useful; its action in diminishing hæmorrhage they regard as important in its tendency to lessen shock. Among its further advantages are the clearer field of operation which it provides for the surgeon, and the fact that it obviates the necessity of drainage and other inconvenient features of the after-treatment. It has been used in a 10 per cent. solution, higher concentrations having no advantage over this strength. This is sterilised by heat for two or three minutes, immediately before use, and injected into the bleeding area or into the vessel itself, or applied with gauze soaked in the solution. No untoward after-effects are observed, though a number of the laparotomy cases were allowed to get up on the third day after operation. It is now being applied directly to cases of severe menorrhagia and metrorrhagia, and intravenously in placenta prævia and melæna neonatorum. It is clear that if the experiences of other surgeons go to substantiate those described by Vogt, the substance for which we are indebted to Kocher and Fonio will render further progress in the surgical art in various directions. Clinical experiences with hæmostatics are now being supplied to the medical profession with some freedom; we have published in THE LANCET[1] two notes on the subject recently which may well be consulted.

REMOVAL OF FOREIGN BODIES FROM THE PERICARDIAL SAC.

IN the *Annals of Surgery* for June two rather remarkable surgical feats are recorded. The first case was that of a man aged 46, admitted to the Montreal General Hospital under Dr. G. E. Armstrong, who reports the case, suffering from a wound in the chest inflicted by a 32 calibre revolver at a range of 5 feet. In the third left interspace, near the sternal border, there was a small punctured wound. There was little or no subjective discomfort, but in the afternoon of the same day the pulse became irregular. Skiagraphic examination showed that the bullet lay loose in the pericardial sac, turning to the right when the patient lay on his right side, and vice versa. The pulse became more irregular during the next four or five days, and tracings showed that this was a total arrhythmia of the type that is associated with auricular fibrillation. This, together with a slight change for the worse in the man's general condition, determined the surgeon in favour of operation. The patient was anæsthetised with ether administered by the intratracheal method. The pericardial sac was reached and incised through the fourth left space, but as this opening did not give free access to the bullet a part of the fifth rib was removed. By this means the bullet, which lay behind the heart, was brought within reach of the operator's finger and hooked out of the chest. The pericardial sac contained so little blood that the incision was closed without drainage. Within a few hours the rhythm was normal once more, and the patient seems to have done well. The other case is reported by Dr. Robert Proust, who gives a very full account of the steps by which he extracted a pistol bullet from the pericardial sac of a boy of 13. In this case there had been a good deal of hæmorrhage into the sac, and when the bullet was removed it came away embedded in a clot the size of the fist. The bleeding point was found on the front of the heart, near the apex and towards the left border. This was secured and the hæmorrhage checked, but drainage was inevitable. The small rubber drain that was used proved ineffective, and had to be removed on the thirteenth day after operation, this affording the patient much relief, since it allowed the contents of the sac to escape. The patient made a good recovery, and now, four years later, he is able to work. Examination with the X rays and with the electrocardiogram shows little if any trace of the injury, though by the former method it was said there was a relatively translucent area on the front of the heart near the apex which must have corresponded with the site of the scar in the cardiac wall.

"TENNIS ELBOW."

Dr. W. P. Coues has published recently an important paper on the condition known as "epicondylitis," or "tennis elbow," which was first described by Bähr in 1900, and has been principally studied on the Continent. It is described as not uncommon in those who take much exercise, particularly lawn-tennis players. But Dr. Coues has found that athletics in which strenuous movements of the arm play an important part are not the only cause of the trouble. The history is usually as follows. Immediately after a stroke, occasionally some hours or days afterwards, pain is felt in the elbow, usually the right, near the external condyle. This pain may be so severe and sudden as to disable the arm temporarily. It is usually increased by extension of the forearm, not so much by flexion, and may be intermittent or constant, returning immediately the exercise is resumed. Examination soon after injury usually shows no marked swelling. Movement of the elbow is not, as a rule, limited, but there may be great pain on forced extension in the neighbourhood of the external condyle. Pronation and supination are, as a rule, painless. On pressure, an exquisitely painful spot is found over the external epicondyle. Here much pain is felt on full extension of the forearm and radiates down to the fingers. The pain is increased when the fingers grasp an object. It is also brought on by such movements as reaching a book on a shelf or putting on the coat. Sometimes there is a suggestion of a slight thickening over the external epicondyle. After a period of weeks or months, with or without treatment, the pain gradually disappears and the patient may again take up his favourite sport, with, however, possibility of speedy recurrence of the trouble. As to the nature of the lesion, several views have been brought forward. Tears of the fascia or of some muscle bundle attached to the epicondyle, as well as some nerve implication, have been suspected. Dr. Coues suggests that some of the muscles, exerting a powerful pull, tear off their attachments, perhaps carrying small pieces of bone with them. If the exercise is repeatedly attempted the process may recur in lesser degree, producing some periostitis of the external epicondyle. This may also be kept up by the ordinary movements of the arm. Simple rest of the arm for a short time does not cure the condition. It may become quiescent and the patient think himself cured, but the first stroke of his racket will bring back all his pain and disability. Dr. Coues reports the following cases. After half an hour's hard play at lawn tennis a man felt a sharp pain on the outer side of the elbow and forearm on making back-hand strokes, which require a fixed position of the arm alf way between pronation and supination, and here was almost complete inability to make such trokes. At the same time fore-hand strokes, requiring simple flexion only, were made with little discomfort. On examination an exquisitely painful pot was found on the epicondyle. The disability and tenderness persisted three months after the njury. It was questionable whether there was not slight thickening of the periosteum over he epicondyle. In another case a left-handed athletic man while playing golf noticed pain n the right elbow immediately after a stroke, with a distinct sensation of something tearng in the neighbourhood of the external epicondyle. The injury was not severe enough to stop the patient's play that summer, but an exquisitely painful spot appeared over the external epicondyle, where flexion and extension of the fingers caused pain. Considerable pain and disability remained for six months, at the end of which the arm was not well. In this, as well as in another case, a skiagram showed a small spicule of bone which appeared to have been torn from the external condyle.

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[1] THE LANCET, April 4th, 1914, p. 957; and April 11th, p. 1057.

MURMEKIASMOSIS AMPHILAPHES.

UNDER the somewhat imposing name of murmekiasmosis amphilaphes Dr. A. J. Chalmers, director of the Wellcome Research Laboratories, Khartoum, and Dr. J. B. Christopherson, director of the Khartoum and Omdurman Civil Hospitals, describe in a recent number of the *Journal of Tropical Medicine* a very interesting case of a peculiar form of cutaneous wart characterised by an extraordinary facility for growth causing it to spread and to occupy practically the whole of the right side of the face and neck, involving the external auditory meatus, destroying the right eye, and invading the mucous membranes of the mouth, gums, tongue, and throat. As the most important clinical feature of this apparently new human disease is the warty growths, the authors propose to give it the name of murmekiasmosis amphilaphes, using the term "murmekiasmos" employed by Galen to denote "the breaking out of warts on the body," together with the Greek adjective for "spreading," and adding to Galen's word the termination "is" in order to bring it into accord with modern nomenclature. The patient was an Arab youth, aged 16, and it appears that the warts commenced to show themselves on his face not long after birth. Microscopically the points of interest in the warty masses in this case were the presence of numerous cryptococci, and the fact that the cutaneous warts were largely composed of an adenoma derived from sebaceous glands. A case in England somewhat resembling this in certain respects was published in 1912 by Dr. Lilley in the *British Journal of Dermatology* under the title of "Notes on a Case of Nævo-carcinoma (Melanotic) of the Scalp of a Boy aged 19," but upon examination the clinical description in this English instance does not agree with that of the Arab youth in the Soudan. It is, however, possible that the two conditions might perhaps be variations of the same disease—i.e., a warty growth associated with a proliferation derived from the sebaceous glands. Dr. Chalmers and Dr. Christopherson have made a considerable investigation of the literature of the subject without meeting with any reference to any species of cryptococcus associated with warts. In their opinion the cryptococcus found in the Soudan case does not correspond with any of the already named forms, so that taking all the facts of the case into consideration they think they are justified in regarding the organism as a new species, and they propose to call it by the Latinised name of Cryptococcus myrmeciæ, Chalmers and Christopherson, 1914. The warty growths do not appear *per se* to endanger life, but they destroy organs such as the eye, and when they enter the pharynx there is risk of the larynx becoming involved. The only effectual treatment seems to be by means of dissecting operations, leaving large superficial areas to be covered by skin flaps or by skin-grafting. In the early stages, if the diagnosis is established, the condition can easily be cured by operation—that is, before it had extended to the eye or the pharynx. Some time ago some of the warty masses were removed from the face of the Arab youth by operation, and there has been no reappearance of the growths upon the cicatrix. Owing, however, to the dangers involved no removal of the warty masses inside the mouth, on the tongue, or in the pharynx has been attempted.

THE BRITISH PHARMACOPŒIA, 1914.

AT its meeting on July 13th the executive committee of the General Medical Council formally adopted as "The British Pharmacopœia, 1914," the completed draft submitted by the Pharmacopœia Committee. It was resolved that copies in advance of publication should be made accessible to the public for inspection at the offices of the Council in London, Edinburgh, and Dublin on Monday, August 10th, at 10 A.M., and thereafter from 10 A.M. to 4 P.M., and that a copy for review should on the same day be placed in the hands of the editor of each of the medical and pharmaceutical journals on the Registrar's list. The official publication of the new British Pharmacopœia will be made by notice in the *London Gazette* on Friday, Oct. 9th, on which day copies will be on sale by the publishers, Messrs. Constable and Co., Limited, 10, Orange-street, Leicester-square, W.C.

DIGITALIS AND THE BLOOD PRESSURE.

THE view that the medicinal administration of digitalis causes an increased blood pressure has been so long maintained that the later clinical observations opposing it have even yet gained little general acceptance. It has been noted by Dr. F. W. Price that medicinal doses fail to affect blood pressure; Mackenzie agrees with this finding, and the observations of both were carefully and systematically controlled. On the other hand, it is certain that in animals under experimental, and naturally artificial, conditions digitalis does raise the blood pressure. But this is, perhaps, an instance where it is not safe to argue clinically from laboratory data. Dr. Charles H. Lawrence[1] has made some further observations respecting the effect of digitalis upon the blood pressure in a series of 26 cases, in all of which some degree of cardiac decompensation was present. Both the systolic and diastolic pressures were recorded, and the quantity of urine noted. Digipuratum was the preparation given. In only 19 per cent. was any rise of pressure detected; the maximum rise was 30 mm. Hg, and in this case there happened to be an added acute renal infection. On the other hand, 66 per cent. showed a fall of blood pressure and

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[1] Boston Medical and Surgical Journal, 1914, vol. clxx., p. 37.

15 per cent. showed no change in pressure. The effects of digitalis upon diuresis, too, were not what one has been led to suppose they would be. Diuresis is associated with fall of blood pressure, not the reverse. This is shown by the fact that where a rise of pressure was noted no cases showed diuresis; where the pressure fell, 88 per cent. showed a diuresis. Upon the diastolic pressure digitalis exerts a similar but less marked effect to that upon systolic. The changes are of less amplitude, and consequently there is a lessened pulse pressure (i.e., difference between systolic and diastolic pressures). The practical conclusions of these observations go to suggest that the fear of this drug's bad effects in cases of high tension, angina pectoris, or arteriosclerosis, owing to its increasing the blood pressure, is unwarranted. Digitalis in such cases may do good since it rarely causes a rise of pressure, and frequently, by its reverse effect, appears to procure a considerable diuresis. Especially when there is some cardiac decompensation is its administration to be recommended.

Dr. Frederick Taylor, consulting physician to Guy's Hospital, has been elected President of the Royal Society of Medicine for the ensuing year.

Sir William Watson Cheyne, Bart., honorary surgeon to the King and surgeon to King's College Hospital, has been elected President of the Royal College of Surgeons of England.

We sympathise deeply with the officers of the British Medical Association in having been unable to obtain a favourable answer to their request that the action Stevens *v.* The British Medical Association should stand over for retrial till next sittings. As matters are, the case, which was opened on Wednesday, may still be under hearing in London during the annual meeting of the Association at Aberdeen, a circumstance very embarrassing for all the officers of the Association.

Luncheon to Sir Alexander Ogston.—As already announced in these columns, arrangements have been made to entertain Sir Alexander Ogston, K.C.V.O., to luncheon by his former house surgeons and dressers on Thursday, July 30th, at the Grand Hotel, Aberdeen. The chair will be taken at 1.30 o'clock by Sir James Porter, K.C.B., late Medical Director-General of the Royal Navy. Those desirous of attending should make application before July 23rd to the joint honorary secretary, Dr. James W. Cook, 26, Manchester-road, Bury, Lancashire.

Prize Day at Guy's Hospital.—On July 9th Viscount Goschen presided at the distribution of prizes and medals won by the successful students at Guy's Hospital. Dr. H. C. Cameron, Dean of the Hospital, referring to the Medical School Research Fund started many years ago by a gift of £1000 from the late Mr. Pierpont Morgan, said that it had already borne fruit under the chairmanship of Sir Cooper Perry, with the assistance of several of the heads of departments, in the establishment of a small ward for the study of diseases of nutrition in infancy. The increased accommodation at the school had made it possible to devote more attention to post-graduate students, and in the medical school alone there were now 30 workers, not including the hospital staff engaged in research. Sir George Reid, who presented the prizes, expressed his pleasure at the prominence which was given to research work. The medals awarded were as follows: The Newland-Pedley gold medal for practical dentistry, A. E. Lowein; the Golding-Bird gold medal and scholarship in bacteriology, W. A. Young; the Treasurer's gold medal for clinical medicine, C. de Wet Gibb, and for clinical surgery, C. S. L. Roberts.

ENGLISH MEDICINE AND SURGERY IN THE FOURTEENTH CENTURY.[1]

By D'Arcy Power, F.R.C.S. Eng.,
SURGEON TO ST. BARTHOLOMEW'S HOSPITAL, AND FORMERLY PRESIDENT OF THE HARVEIAN SOCIETY OF LONDON.

The Harveian lecture was established in 1875 to promote the diffusion of exact scientific knowledge, and the office has always been held by one who has done pioneer work in the subject upon which he has lectured. I felt it an especial honour, therefore, when your council not only asked me to lecture, but invited me to choose some topic connected with the history of medicine, a branch of knowledge which had not previously been selected by any lecturer. I accepted the invitation with pleasure, and the more so as it obliged me to carry out a piece of work which I had long been wanting to do and might not otherwise have undertaken.

England in the Fourteenth Century.

I chose "English Medicine and Surgery in the Reign of Edward III." This king was born, as you know, in 1312, came to the throne in 1327, and died in 1377. He lived, therefore, practically through the fourteenth century—a century which closed mediæval history in Europe. It was heir to the wonderful advances in scientific knowledge which marked the twelfth and thirteenth centuries; it immediately preceded the equally wonderful revival in art and literature known to us as the Renascence, a revival which took place at the expense of what is now called "research" and "original work" in favour of art and literature. The men of the fourteenth century were in touch with the older beliefs and traditions, whilst they were endowed with the knowledge of science which had been gained by Roger Bacon and Robert Grosteste. The King of England still flew the Wessex dragon, the old Saxon flag of England when he went to battle, and his wounded men were treated as often by spells and wort-cunning as by clean dressings and primary suture of the bowel.

The fourteenth century is thus worthy of careful study, and nothing in it is more worthy than the practice and the practitioners of medicine. The country was at war with France for 100 years, and the upper and lower classes were as familiar with the Netherlands, France, and Spain as our own men are with South Africa. Trade was active and large sums of money were constantly changing hands. The Black Death, too, in the middle of the century was followed by a long train of epidemic illnesses. All classes of the medical profession profited, and all had abundant opportunity of practising their calling, whilst foreign victories by raising the national blood pressure made them sanguine enough to experiment and advance upon the older methods. The younger generation, too, proved receptive. It watched the results of its teachers and was ready to adopt all means which had proved successful. Surgery, perhaps more than medicine, was in a fair way of becoming a science; then suddenly came the Wars of the Roses, chaos, and all was lost for very many years.

John Arderne.

The fourteenth century was an era of really great surgeons throughout Europe. Lanfrank, the most distinguished pupil of William de Salicet, died in 1306; Henri de Mondeville lived from 1260 until 1320; Gui de Chauliac, prince of the mediæval writers on surgery, died in 1368; Jan Yperman, the Flemish surgeon, died in 1350. These great surgeons were foreigners. We had in England at least one original surgeon—John Arderne—worthy to be classed with them. (Fig. 1.) Born in 1307 he practised for many years at Newark, then a centre for England and a meeting place for Parliament. He came to London in his old age and died at the end of the century. Typical of the fourteenth century he was skilful in leechcraft, a believer in spells, as befitted one brought up in the older school of thought, and yet a skilful and original surgeon, owing no allegiance to authority, profiting by his experience, able to invent wholly new operations. I desire to speak of him for a short time because the kindness of Mr. Henry S. Wellcome and of Mr. C. J. S. Thompson enables me to show you a manuscript of his works which has not hitherto been thoroughly examined.

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[1] The Harveian lecture, delivered before the Harveian Society of London.

Manuscript of Works of Arderne.

The original manuscript is in the Royal Library at Stockholm. It is said to have been bought in London in 1759 for the sum of £15 by the Swedish Minister at St. James's, and it was presented by him to the king on his return home.

The manuscript (Fig. 2) is a roll of eight skins of vellum sewn together. It measures 17 ft. 8 in. in length by 15 in. The writing is arranged in two and sometimes in three columns which are separated by coloured figures illustrating the text. It is written in an early fifteenth century hand, and there is no reason to doubt the information added later that it was made in the year 1412. The roll has been exposed to considerable vicissitudes during the 502 years it has been in existence, and parts of it are quite illegible. I am, however, very greatly indebted to Mr. Eric Millar, of the Manuscript Department at the British Museum, for the great pains he has taken in transcribing all that can still be deciphered. It is clear from this transcript that the roll is a Latin version of a part of the works of John Arderne made a few years after his death by a copyist who had some knowledge of the "Lilium Medicinae" written by Bernard Gordon in 1305. It is, in fact, what the publishers would now call a revised edition of the works of the late Master John Arderne with additions. Like so many revised editions it is completely spoilt. It has lost its savour. Many additions have been made which Master Arderne would have resented, whilst much is omitted upon which he justly prided himself. Fortunately so many manuscripts of Arderne's works still remain—I have myself seen about 60—that we need not be troubled because this one has been edited.

Contents of the Manuscript.

I do not propose to weary you with a detailed account of the roll, and I will only give a few short extracts that you may be able to gain some idea of its nature and contents. The work is an abstract of Arderne's "Liber Receptarum" arranged in the same order as the corresponding chapters in Bernard Gordon's "Lilium Medicinae," which at the time was the ordinary manual of surgery throughout Europe; it cannot be called the text-book of surgery because it circulated in manuscript, as printing was not yet known. Arderne's roll deals with diseases of the head, throat, eye, ear, chest, lungs, digestive organs, liver, spleen, kidneys, and male organs of generation. There is a section on gout, details of cases treated by the author, and some midwifery. Like all Arderne's works it is remarkable in containing no account of fractures and dislocations, and its early character is shown by the very slight reference made to astrology. The religious character of the age is well shown in the short prayer to be said before giving any medicine. It runs—I give you merely the translation—"O Lord, who marvellously madest man and more marvellously reformed him, who hast given physic to regulate the health of men's bodies, pour down from heaven thy blessing upon this remedy or electuary or draught, &c., that into whosoever's body it shall enter they may be worthy to receive strength of mind and of body through Christ our Lord. Amen."

A single example will show the use made of charms or spells. It is recommended in epilepsy that the words Jasper, Melchior, and Balthazar be written with blood drawn from the auricular or little finger of the patient. The paper bearing the words should be worn by the patient, who was to say daily for a month three Pater Nosters and three Ave Marias for the souls of the fathers and mothers of these three kings. He was also to drink the juice of peony in beer or wine for a month. There is no doubt that Arderne had to treat the equivalent of panel patients, for he says, in speaking of constipation, "Let the man drink 'de brodio,'" which was the equivalent of beef-tea, "if he be rich, but if he is a pauper he may just drink his own urine."

These, however, are mere sidelights, for the manuscript contains a record of valuable experience. Arderne says that the following are fatal signs in quinsy: "If the patient foams at the mouth, if the corners of the eyes become black or green, if the pulse cannot be felt, if the extremities become cold, and if a cold stinking sweat exudes from the armpits; because in these cases the patient will die on the same day." He adds in another manuscript that he had treated very many cases of sore throat where the patient died suffocated in three or four days, so that he had probably seen some unrecorded epidemic of diphtheria.

Arderne's Skill as a Surgeon.

The following case shows his surgical ability in a case of stone impacted in the urethra. He says:—

> I saw a young man with a stone as big as a bean so lodged in his penis that it could not escape through its eye, neither could it be pushed back, but it remained in the middle of the organ as it is here shown. I cured him easily with an incision, for I put him on his back and tied his member with linen threads on each side of the stone to prevent it shifting, and after making a small cut with a lancet over the stone I squeezed it out. I then sutured the skin with a needle and thread over the hole, and dressed it with white of egg and finely ground flour, and having wrapped up the penis in a piece of old and thin linen I let him go in peace for three days. I cut and removed the thread at the next dressing, and in less than a fortnight I had cured him completely. There is no need for alarm in these cases, even though the urine escapes from the wound for three or four days after such an operation, for the patient will certainly be cured.

In like manner his treatment of a case of serious primary hæmorrhage was equally surgical, and was far in advance of his time, for he used cleanliness and sponge pressure when most of his contemporaries would have employed astringent ointments because ligatures and forceps to stop bleeding had not been thought of. Speaking of fistula in ano, Arderne says:—

> I cured a man from Northampton who had three holes in the left buttock and three in his scrotum, as is here shown. The blood escaped very freely after the rectum was divided, because the fistula had tracked deeply. I put a sponge into cold water and stopped the bleeding with it. I then stuffed a good-sized sponge into the bowel and made him sit on a chair. The bleeding stopped directly, and as soon as the patient had eaten a meal and had been put to bed he slept well all night without any farther hæmorrhage.

Another manuscript gives the name of this patient as John Colyer, mayor of Northampton, and the records of the city show that he was mayor in 1327, and again in 1339–40.

The roll also contains a very interesting section on midwifery which is well worthy of more careful study. It gives a series of "birth figures" like those found in Rösslin's "Byrth of Mankind." Each figure is accompanied by a short description which in many instances takes the form of question and answer, as if it had been designed for the oral instruction of midwives. The usual formula runs:—

> Quartus partus est si ambas manus foras ei invenerit. Quid facere debet obstetrix? duobus humeris ejus manus suas ex utraque infigens retrorsum eum revocet, sicut superius dixi, manibus compositum et apprehenso capite paulatim et leviter eum adducat. Si infans caput habet et si duas manus ejicit, oportet obstetricem prius missa manu sua caput ad orificium corrigere et comprehensis manibus infantis conari debet ne caput orificium vulve non obstipet, sed facillime omne corpus infantis exire possit quo priores manus exierant.
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> (The fourth birth or position is when both hands present. What should the midwife do? Grasping the hands with the arms on either side let her push back the child arranged with its hands as I have said above, and having seized the head, let her draw it down slowly and gently, &c.)

And so I could go on with extracts for a long time, but as it would be at the risk of wearying you I shall pass on to more general matters.

Medical Practitioners in the Fourteenth Century.

The treatment of the sick in England during the fourteenth century was in the hands of the same classes of practitioner as it is at the present time. It was shared by the physician, the surgeon, the family medical attendant, and the quack. The apothecary, then as now, was a tradesman. In country places the ladies did what they could to relieve the illnesses of their poorer neighbours.

The English Mediæval Physician.

The physician was usually, but not necessarily, a churchman. He learnt abstract science in the monastery schools and the scientific side of medicine in a university. He then returned to his monastery, where he either remained as physician or received preferment, becoming attached to the household of some great man. Dr. Norman Moore[2] gives the names of eight physicians practising in or near London during the reign of Henry III. (1216–72). Two were physicians to the Queen—it is not stated whether or not they were in orders; two were canons of St. Paul's. Two were priests resident at St. Alban's, and it is to be noted that one of these priests was the son of "Adam the Physician," who was not therefore a priest. The last of the eight was a doctor of medicine, a doctor of laws, and a doctor of theology, a professor at Paris and Oxford, physician to the King of France and to the Bishop of Lincoln.

We know that no great change had taken place in the status of the English physician in the ne hundred years, because John of Gaunt had tw physicians in his retinue, John Bray and Willia Appulton. John Bray was John the Minorit "Johannes de ordine Minorum, in armis bellic strenuus, in physicâ peritissimus, domino Johan duci Lancastriae familiarissimus" ("John of th order of the Minorites, courageous in war, mo skilful in physic, most acceptable to My Lord, Joh Duke of Lancaster"). It was precisely because h was such a friend of the duke that the London mo beheaded him on Tower Hill after the Savoy wa burnt in 1381. His colleague was Frère Willia de Appulton, "physician and surgeon," who receive xl marks in time of peace from the honour Pomfret; in war time other xl marks and ranke as a gentleman, clerk, esquire, or a chamberlai having four horses and two grooms allotted to hi Bray had received £10 a year, with 3*s*. a da travelling allowance. He ranked as a chamberlai with an allowance of two horses and the wage one groom.

The physicians attached to John of Gaunt, ther fore, held a good position in his household. The were men of affairs and took an active part i counsels of war. It is clear from the description Frère William that he was prepared to act as physician or as a surgeon,[3] so that the line division between the two branches of the professio was not so absolute as is usually described. Th popular idea of a physician as he is represente in Fig. 3 was generally accurate. He was learned man who taught pupils, gave advice, pr scribed drugs, and ordered active treatment whe he considered it necessary. In this particular case the physician is represented in an ecclesiastical dre with a biretta (Fig. 3). He is watching a patient wh has been ordered to take a dose of medicine. Th stool with the basin beneath it shows the primitiv sanitary arrangements of the time. It was not eve a close stool, the first mention of which is in 141 or more than 50 years after the time we ar considering.

My friend Dr. H. P. Cholmeley has recently issue an admirable account of the English mediæv physician in his book on John of Gaddesden, wh lived from 1280 to 1361, and as the book is easi accessible I need say no more about him exce that on the two occasions when Arderne, his co temporary, refers to him it is in connexion with th diseases of women, so that he was evidently held i estimation as a gynæcologist.

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[2] The History of the Study of Medicine in the British Isles, 1908, p. 16.

[3] The indenture appointing him is dated at the Savoy, March 15t 1373, and runs: Ceste endenture faite parentre nostre seignur Joh Roy &c d'une part et frere William de Appilton physicien et surgie d'autre part tesmoigne que le dit frere William est retenuz demourrez envers nostre dit seignur pour peas et pour guerre a ter de sa vie en manere qu'ensuit: c'estassavoir le dit nostre seignur done et grante a ly par an a terme de sa vie par le bon et agreab service q'il ly ad fait et ferra xl marcs d'esterlinges a avoir et prend tant en temps de peas come de guerre de les issues de l'onour Pountfreit, par les maines de le receyvour illoeques qi pour le tem serra, as termes de Pasques et de Saint Michel par oveles porcion Et si le dit rent soit a derier par un moys apres aucunes des term avantditz voet et grant nostre dit seigneur que bien lise au dit fre William de destreyndre en la dite seignurie et chescune parcel d'ycelle et les destresses retenir tanque gree ly ent soit fai Et outre ci nostre dit seignur ad grante au dit frere Willia en temps de guerre autres xl marcs par an a terme de sa vi apprendre par les mains del tresorer de guerre qi pur le tem serra (ainsi qu'il soit) tenu dez travailler ovesque nostre d seignur tant en temps de peas come de guerre esquelles parties q'il pler a nostre dit seignur et de faire ses ditz offices. Et serra le dit fre William a bouche en courte ovesque un gentil homme clerc ou esqui et un chamberleyn, et prendra livre pur iiij. chivaux et gages pur deu garceons pur le temps q'il serra en courte, et a quelle temps q'il ser hors de courte as busoignes de nostre dit seignur par son command ment il avera gages pur chescun jour solonc son estat est condicion p les maines del tresorer del houstel qi pur le temps serra. En tesmoi nance, &c. Donnee etc a la Sauvoye le xv. jour de Mars l'an xlvi [John of Gaunt's Register, Camd. Soc. ed., 1911. Part i., No. 836.]

[4] Le Livre de Santé, par Aldebardus de Sienne, Sloane MS. 2435.

FIG. 1.

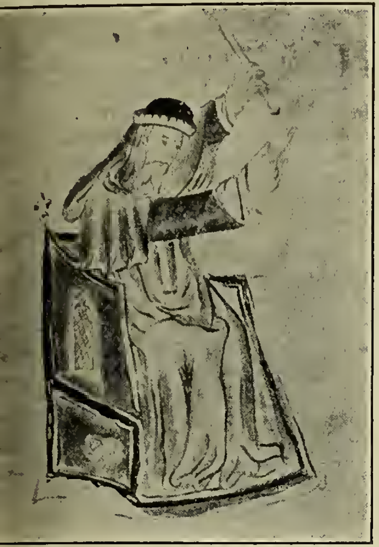

FIG. 2.

FIG. 3.

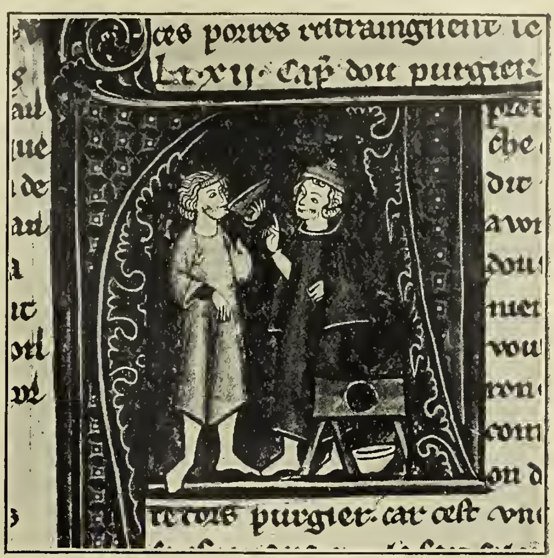

FIG. 4.

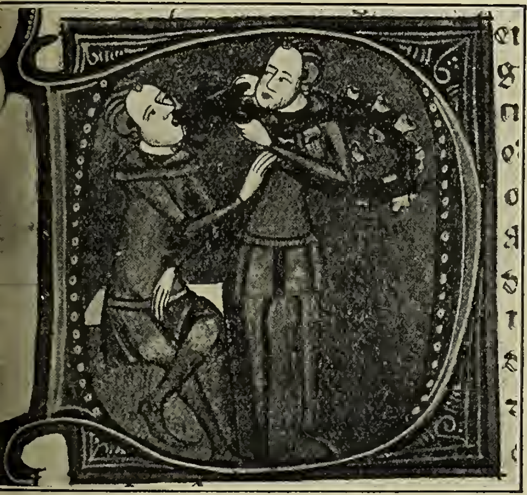

FIG. 5.

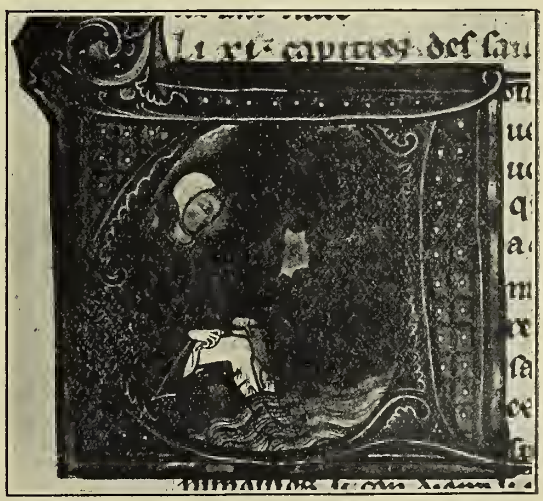
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FIG. 6.

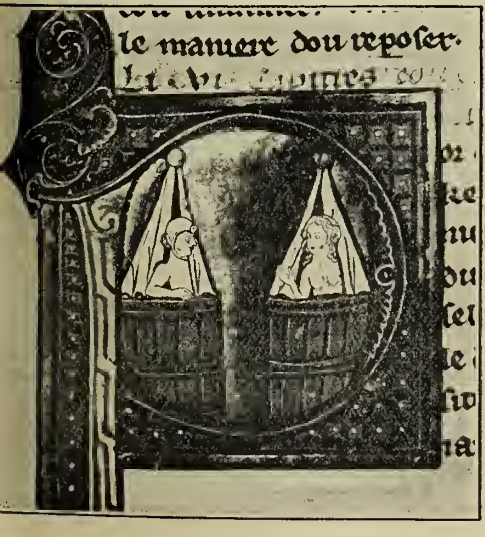
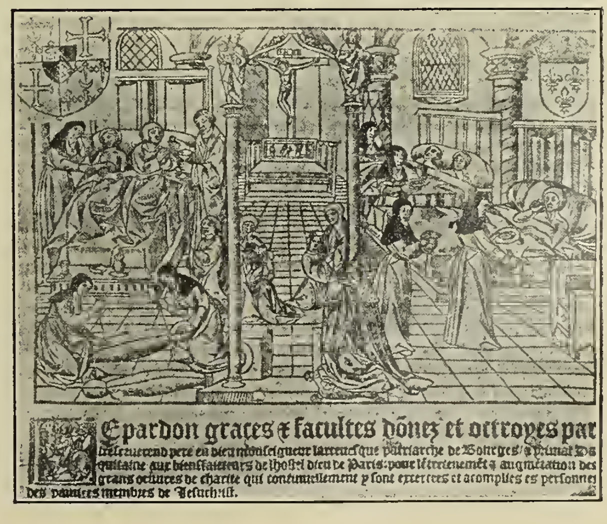


FIG. 7.


Le pardon graces & facultes dõnez et ottroyes par
treſreuerend pere en dieu monſeigneur larceueſque patriarche de Bourges/ primat des
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grans oeuures de charite qui continuellement y ſont exercees et acomplies es perſonnes
des poures membres de Jeſuchriſt.

The Operating Surgeon.

The operating surgeon—as a class—was in a lower position than the physician, and during the fourteenth century he was in a transition state. He was still itinerant because he went from house to house to do his cure—that is to say, he undertook for a certain fee to operate and attend the patient until he was well. This involved personal service, occasionally for long periods of time, and the fees charged were relatively large because it was impossible to have more than one case in hand at a time. The fee was paid partly in cash, partly in kind, and partly in the form of an annuity which the surgeon received so long as the patient lived. The operating surgeon travelled extensively, lived with the moneyed classes, and if he was a good fellow was received by his patients on a friendly footing. He also gained a large income.

Most of the operating surgeons in this century had seen war service, I imagine, and although there were a few in the provincial towns, the majority congregated in London where they became members of the Guild or Fraternity of Surgeons. Membership of this Guild gave them the right to call themselves "Master" or "Magister" with a special cap and robe, as seen in the picture (FIG. 1), and for a few years they arrogated to themselves the prefix "de," so that John Arderne when he was elected into the Guild became Magister Johannes de Arderne. Many operating surgeons had taken orders and were consequently unmarried, but they do not seem to have held Church preferment, as was the case with physicians. The attitude of mind of the lay surgeons was, however, sincerely religious when they belonged to the better class, and their religion was certainly not a pose. Arderne, writing in 1376, used to say, "I did my cure to him and the Lord being mene (Deo favente) he was helid perfectly," in exactly the same humble-minded spirit as Ambroise Paré—200 years later—said, "I dressed him, God cured him."

The Master Surgeons as a guild exercised control over the practice of surgery in London. Isolated notices of them occur as early as 1312, and the record of 1354 shows definitely the use to which the authorities put their knowledge. It says:—

> Be it remembered that on Monday next after the feast of St. Matthias the Apostle (24th Feb. N.S.) in the 28th year of the reign of King Edward iiird, the Prior of Hogges, Master Paschal, Master Adam de la Poleterie, and Master David de Westmerland, surgeons, were sworn before the Mayor, Aldermen and Sheriffs, to certify them as to a certain enormous and horrible hurt on the right side of the jaw of Thomas de Shene; whether or not such injury was curable at the time when John le Spicer of Cornhulle took the same Thomas under his care to heal the wound aforesaid. Who say upon their oath, that if the aforesaid John le Spicer at the time when he took the said Thomas under his care had been expert in his craft or art or had called in counsel and assistance to his aid, he might have cured the injury aforesaid; and they farther say that, through want of skill on the part of the aforesaid John le Spicer the said injury under his care has become apparently incurable.

I am inclined to think that John le Spicer was an apothecary seeking to practise surgery and that he was a member of the Fraternity of Spicerers.

The duties of the officers of the Guild had become stereotyped into an oath as early as 1369, but I quote the oath of 1390 because it states that women as well as men practised surgery in the City of London. It runs:—

> On Monday, 10th April in the thirteenth year of King Richard the Second Master John Hynstock, Master Geoffrey Grace, Master John Bradmore and Master Henry Suttone, surgeons were admitted in the Court of Guildhall in London before William Venour, Mayor, and the Aldermen. They were sworn as Masters Surgical of the aforesaid city well and truly to serve the people in working their cures, taking of them reasonable recompence, &c. To practise truly their trade and to make faithful oversight of all others both men and women, occupied in cures or using the art of surgery, presenting their lack both in practice and medicine so often as needs be to the aforesaid Mayor and Aldermen. They shall be ready when warned thereto to take charge of the hurt or wounded and to give faithful information to the servants of the City of such hurt or wounded as are in danger of death or not.

The Master Surgeons themselves were held in some estimation and consorted on fairly equal terms with the physicians, but the reputation of operating surgeons as a whole was not good. Their wandering life very often made them literally vagrants, and if a case was not doing well they had an unpleasant habit of slipping away and leaving the patient to Providence. In the popular estimation they were drunken, lascivious, boastful, and quarrelsome thieves. William de Salicet, writing for surgeons at the end of the thirteenth century, says gravely enough that a wise surgeon will refrain from stealing whilst he is actually in attendance upon a patient, and that he should not employ assistants with notoriously bad characters, not because it is morally wrong, but because such actions are likely to prejudice the patient against his surgeon and so spoil an otherwise good operation.

The best of the operating surgeons, however, did good work in the fourteenth century, and they almost succeeded in making surgery a profession. Their skill and boldness may be judged from this extract from the manuscript of an unknown surgeon whose work still lies unprinted at the British Museum.[5] The section treats "of wounds of the gut and liver.' It says:—

> Yf a gutte passe out of the wounde and it be not wounded reduce him in again, and yf you may not reduce him procede in this manner. ffirst chaufe ye guttes that ben oute and mollifie hem with a gret sponge (wetted) in water of ye decoccion of camomulle & anys & enoynte hem with hoote oile of camomulle & when they be chaufed with the aforeseid sponge putte hem in agen as well as you may & yff you may not reduce hem by this weye open ze wound a litell more liztly & widely & then reduce hem & sewe ye wounde & yf the gutte that passe out be wounded then that wounde ben dedlye but yet leve not the resonable cure of the wound.
>
> An ye guttes be kutte all otmest so that ther leve nothyng hoole thane natheless the wound is mortal and may not receive no curacion; but yf ze guttes be kutte on lengthe other in partie on breadth but not fully cut in sonder hardily conduce ye parties of ye gutte that is kutte, whether that it be kutte ye lengthe other brede, & sewe hem in ye manner as skynners sewen ther furroures [furs], for in this case it is ye best maner; & anone as it is sewed lay on a poudir that mo cleve together to the guttes & the sewing the weche is made in this manner: Take Mastic, draganth & gum arabick, &c.

In the same manner it is recommended that a ruptured liver should be treated by suture.

The Barbers.

The term "leech" was used familiarly as the term "doctor" is at present, and was applied to all members of the medical profession. The general or family practitioner, at any rate in London, was obliged to be a member of the guild or fraternity of Barbers. He was a Barber and was called a Barber or, at the best, a Barber practising surgery, for there were no Barber Surgeons, since the Barbers and Surgeons did not unite until 1540. Some jealousy existed between the operating surgeon and the barber who practised surgery, for Arderne says, in speaking of the treatment of thrombosed piles by incision: "And be the lech ware that non of tham that standeth ny about perceive when he openeth the lancet for if barbours know this doing they would usurp this cure, appropriating it to themselves unto unworschip and no little harm of the Master (surgeons)." It is clear, too, that the barbers held a somewhat lower position, for it is told of a fishmonger, who spiked his arm on the swingdoor of the Carmelite Church in Whitefriars, that "he was almost dead what with the aching, swelling, burning and improper treatment of a barber that put into the wound irritating tents of linen and had covered them with diachylon. All thes dressings I took away and about evensong replaced them with a simple dressing of oil. And before cockcrow the patient was relieved and in the morning he slept well and I cured him finally and thereby I got much honour."

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[5] Galien's Book of Operacions, Sloane MS. 2463, Fol. 116.

Here is a case showing the ordinary course of surgical routine and the relationship between women, barbers, and surgeons in the fourteenth century. The priest had a cancer of his breast. John Arderne tells the story in one of his minor works. He says:—

> To a preest of Colstone faste by Bynghuame (Colston Bassett in Notts) ther felle a sore in the ryghte pappe withinne the skyne uppone the heed of the pappe as it were a litill knotte & in manner of a pese with ycchynge & so the forseyd knotte bi contynywaunse grew foorth tyll it was of the gretnesse of ane henne egge & that it came to the foorme & lyknesse of a topp. The colour of this sore was lyvyd medlyd with rednesse & waterynesse & hard in felynge & whane ii yere were passyd he was tawghte of a lady to leye ane emplastre therto & to drynke of the drynke of Antioche and whane he perceyved that the forseyde medicines prevayled hyme nowgth he went uneto the towne of Notynghuame to be leten blood & whane the barbour perceyved the forseyd knotte he asked of hyme whether that he wolde be holpen therof & tolde hyme that he hadde a cure therfore & coowde hele hyme therof. The preest seyd he wolde fayne be holpen but nevertheless he seyde to him he wolde aske counsell yf it myghte be done as he seyd unto him. And in the same towne ther was a wyse sirurgyane of the weche the seyd preest hadde wetynge & wente to hyme to aske counsell yf that he were curable or if that he myghte suffrę ony kuttynge or corrosyne or ony suche other medicines. And the seyde leche warned him that he schulde in no manere wyse putte no corrosyve ne non other violent medicines ne lete no kuttynges come ther-ny for yf he dyde he promysed that yt wolde brynge hyme to the deeth withouten ony rekevere.

The barbers acted in their public capacity as health officers of the City of London. They had charge of the gates of the City and were formally appointed gatekeepers. They knew who came in and who went out, and their medical knowledge enabled them to segregate the lepers who were so fruitful a source of anxiety to every community throughout the Middle Ages. The barbers also had the superintendence of the Bagnios, which were little else than licensed brothels, and it is for this reason that in 1308 Richard the Barber, on his presentation to the Court of Aldermen as Supervisor of the Barbers, made "oath that every month he would make scrutiny throughout the whole of his trade and if he should find any among them keeping brothels or acting unseemly in any way and to the scandal of the trade he was to distrain upon them."

These duties interfered to a certain extent with the duties required of every citizen—the serving on juries and keeping of watch and ward. Both were irksome, and the early records of the Barbers are full of attempts to gain exemption. The City watch was especially onerous, for in times of unrest, and they were frequent throughout the thirteenth and fourteenth centuries, the streets of London were patrolled at night by a guard which the chroniclers tell us was as many as 10,000 men armed and grouped into bands under the different aldermen. In ordinary times a dozen men from each ward sufficed, but they had to be properly armed and accoutred so that they were a source of continual expense. The barbers obtained exemption both from serving on juries and from watch and ward, and the exemption, as you know, still holds good for us so long as we are in the actual practice of our profession.

The barbers took no responsibility with their patients. Every person under their care who was "in danger of death or maim"—that is to say, who was seriously ill or likely to suffer from permanent disablement—had to be seen by the Master or Wardens of the Barbers' Guild within three days of the first attendance. Any barber who neglected this rule of "the presentation" of patients was fined and might be imprisoned, whereas if he obeyed it he was held blameless—except in very gross cases of malpraxis—whatever happened. The rule worked well, and for 300 or 400 years there is no record of the attending barber being supplanted by the Master and Wardens whom he had called in to assist him. The women members of the Barbers' Guild and Company did not exercise their art and mystery, but were the wives, widows, and daughters of members who kept on the apprentices or received what would now be called a pension.

Subordinate Grades.

In the subordinate ranks of the profession were many different grades. They chiefly flourished in country places and travelled from town to town. The dentist, as is seen in Fig. 4, was known by the belt which he carried to display the number of successful extractions he had performed, but it is evident that his tools were of the rudest, even if allowance be made for inaccurate drawing. The coucher for cataract, the cutter for stone, and the curer of ruptures were well recognised itinerant occupations, whilst cupping, or "garsing" as it was called, was left to a special class, of whom the last survivor disappeared from the Blackfriars-road well within our own recollection. It seems, however, that only the operative part was left to these practitioners, for the surgical manuals of the time deal with the treatment of diseases of the eye, with the signs and symptoms of stone in the bladder and kidneys, as well as with hernia. The method of leeching seems to have been simple if Fig. 5 may be trusted, for the patient is sitting with her feet in the pond until the leeches fasten upon her legs.

Bathing in like manner was reduced to its simplest form, as is here shown. (Fig. 6.)

The Apothecary.

Very little is known of the apothecary in the fourteenth century. He practised a separate trade in London as a member of the Spicers' Guild—for the Guild of Grocers was not yet formed—and in all probability he was an offshoot of the confectioners. The Ward Robe Rolls show him as a court official who in the reign of Edward II., in 1313, received 7½*d*. a day. His name was Odin the Spicer, and when Madame the Queen was ill at Westminster in the November of that year, he bought things for her. He is called definitely "Odinus Apothecarius Reginae." In 1345 Coursus de Gangeland, an apothecary of London, was granted 6*d.* a day by Edward III. for taking care of and attending his majesty during his illness in Scotland, so that by this time he was definitely engaged in medical practice. In 1360 Peter of Montpellier was apothecary to Edward III., and Freind says in his History of Physic (vol. ii., p. 292) that J. Falcand de Luca in 1357 was the first apothecary to sell medicines in England.

The apothecary held a well recognised position as the "physician's cook," and Chaucer says in his prologue, when speaking of a Doctour of Phisike:—

> Ful redy hadde he his apothecaries,
> To send him drugges, and his letuaries,
> For ech of hem made other for to winne;
> Her frendship was not newe to begynne.

John Arderne makes several references to "the potecary." Writing in 1372–6 he says: "Euforbium is a gumme that potecaryes sellen," and in another place: "Agryppa is ane oyntment that potecaryes sellen, and it is whyte of coloure"; and yet again: "Thou mayest put to a wounde common unguentum album that apothecaries make."

The spicers and the pepperers were nearly all Italians in the fourteenth century, and the apothecary was necessarily a member of one of these guilds, or he could not ply his trade. There is a curious passage in one of Arderne's works which shows that these Italians were already assuming to themselves certain humble medical duties, for he says in speaking of clysters and their uses, "I have gotten an hundred times gret honour with lucre in diverse places. ffor why, at London when Lumbardez oft-times ministered clisteries on their manner to colic men and other men constipate, ne might not availe, I forsooth, with the aforesaid manner of clystering at the first time within the space of a forlong or two I delivered the patient for certayne, our Lord being mene." The passage is interesting apart from the reference to the Lombards as specialists in the administration of enemata, because it shows how prevalent constipation must have been when living was high, people were sedentary, and purgatives were few. The estimation of the action of clysters in terms of distance rather than of time seems to be wholly original. So far as I remember, however, the apothecaries never came into serious conflict with the surgeons or with the barbers of London in the exercise of their occupation. They were soon merged into the great Company of Grocers and developed into ordinary shopkeepers as retail sellers of drugs and spices. It was only when they were formed into a separate body as the Society of Apothecaries that they became a thorn in the side of the physicians, but this was more than 250 years later.

The Hospitals.

The hospitals in the fourteenth century formed a special branch of charitable work, just as they do at the present time. In London they had already existed for nearly 200 years. They were religious institutions nursed by members of the Augustinian order, and provided food, rest, nursing, and religious consolation for those who were acutely ill. There was no separate medical or surgical staff until the sixteenth century, and we have no knowledge as to the nature of the treatment followed. The patients were sick persons found in the streets of the City and all the wounded or injured who chose to apply for relief. Everyone was received freely and without question. Special servants of the hospital—the beadles—clothed in a distinctive livery and wearing a badge, were appointed to bring patients into the hospital. At St. Bartholomew's Hospital they still exist, and their sixteenth century charge ran:—

> Ye shall separate and divide yourselves into sundry parts of the city and the liberties thereof, every man taking his several walk. And if in any of your walks ye shall happen to espy any person infected with any lothely grief or disease, which shall fortune to lie in any notable place in the City to the noyance and infection of the passers by and slander of this house ye shall then give knowledge thereof unto the Almoners of this hospital that they may take such order as to them shall be thought meet.

We also know how such patients were received, for the order runs:—

> When the patient arrives he shall be received thus: First, having confessed his sins to the priest he shall be communicated religiously and afterwards be carried to bed and treated there as Our Lord, according to the resources of the house; each day before the repast of the brethren he shall be given food with charity, and each Sunday the epistle and the gospel shall be read with aspersion.

The patient was looked upon as the direct repreesntative of Christ, and was spoken of as Master or Lord, "Domini nostri pauperes," "Les Signors malades," "Our Lords the Sick," a very different form of address from the brutal terms of the eighteenth century, when they were spoken of officially as "the miserable objects."

The hospital consisted of a large hall (Fig. 7) ornamented with a high-pitched roof, a central louvre, beds in rows down the sides and in the centre, rather overcrowded to our ideas, with an altar raised a few steps at one end so that the patients could see the celebrant. The beds clean and neat, for there is a special order that they should be of sufficient breadth and length, and that the coverlets and sheets should be clean, separated perhaps by curtains, occupied certainly by two patients. This, however, was no hardship, because the proverb that "Travel makes us acquainted with strange bedfellows" is a remembrance of the time when it was usual for a person to share his bed with a stranger, and readers of literature even as late as the eighteenth century will recall many instances where the hero or the heroine has suffered loss at the inn where they have slept with a stranger who rose early and took the purse or the clothes of the heavier sleeper. Indeed, Sir Sidney Waterlow used to tell us when we were house surgeons and complained of the inadequacy of the accommodation offered us by the hospital, that when he was an apprentice he shared his bed with two others and that he slept in the middle because he was the smallest. The use of wooden bedsteads which was universal at the time made the bugcatcher an important and useful person at every hospital. The services of the Church compelled the constant attendance of the religious by night as well as by day, and the sick were therefore never left without supervision.

The food was as good as could be obtained and seems to have been liberally supplied, whilst extras were allowed on a somewhat lavish scale. Of the food and the extras these two stories have come down to us. The first was a miracle wrought by Alfun, the builder of St. Giles, Cripplegate, whom Rahere, the founder of St. Bartholomew's Hospital, had associated with himself when he felt age creeping on.

> It was the manner and custom of this Alfun [says the narrator] with servants of the church to compass and go

about the nigh places of the church busily to seek and provide necessaries to the need of poor men that lay in the hospital and what was committed to him truly to bring home and to sundry men as it was need to divide. And there was a certain butcher Goderyke by name, a man of great sharpness and he was a mean man, the which not only to the asker would not give but was wont with scorning words to insult them. It fell upon a certain day that Alfun went about the butchers man by man and after other when he came to this Goderyke and moved him after the apostle with good and honest words importunately, because he was not willing to give, and when the old man beheld that not for dread, neither for love of God nor also for shame he might not temper the hardness of that indurate heart he broke out in these words, "O thou ungentle and unkind man! I beseech thee wretch put away a little and swage the hardness of that unfaithful soul and take in experience the vertue of the glorious apostle, in whom if thou trust I promise thee that every piece of thy meat that thou givest me a portion of shall the sooner be sold to other and nothing to the minishing or lessening of the price." He, not moved with the instinct or inward stirring of charity but overcome with the importunity of the asker, drew out a piece of the vilest and cast it into his vessell calling them truants and bade them lightly go from him; to whom Alfun answered "I shall not go from thee, till my word and promise be fulfilled." And without tarrying there was a citizen coveting to buy flesh for him and his household and of that heap of the which Alfun spoke before he bought at the will of the seller and bare it with him. And when this was divulged through all the butchery it was taken for a worthy miracle. And from that time they began to be more prompt to give their alms and also fervent in devotion.

The story is a pretty one, and is so graphically told that one has no doubt of its truth. The old priest, with the hospital servants behind him carrying a large wooden begging bowl, going from stall to stall in the meat market; the surly butcher, with the rest of the market looking on to see how Alfun would fare, the twinkle in the old man's eye as he knew that he had bested him; and the breathless citizen, who wanted to buy the worst meat at the highest price, bring back the whole scene and makes one wonder whether a part of it had not been rehearsed by Rahere and Alfun, who must have retained some sparks of that spirit which in youth had made them court favourites.

The story about the "extras" is told of the Knights Hospitalers of St. John of Jerusalem. It is said that Saladin desiring to prove for himself the indulgence of the knights to their patients disguised himself as a pilgrim and was received among the sick at the hospital in Jerusalem. He refused all food, declaring there was only one thing he fancied, and that he knew they would not give him. On being pressed, he confessed that it was one of the feet of the Grand Master's horse. The Grand Master was told, and at once ordered the noble animal to be killed and the sick stranger's desire satisfied. But Saladin thinking the experiment had gone far enough declared himself taken with a repugnance to meat, and the animal was spared.

Conclusion.

And thus ends a very short account of an interesting period of medicine in England. It is impossible in the scope of a single lecture to give more than a bare outline of the subject, but it has been my intention to show that there was a blending of the old and new during the fourteenth century. Wort-cunning, which still lingers amongst us at the herbalists, was the older Saxon leechcraft; spells were a reminiscence of the Danish rule; classical medicine was coming into vogue through the Arabic translations, and was brought to England from the schools of Salernum and Montpellier. Side by side with this knowledge, altering, modifying, and even creating, was the sturdy originality of the English mind. I shall have effected a part of my purpose this evening if this lecture induces some of you to go to the British Museum, to the university libraries, and to the cathedral libraries in search of the writings of our early predecessors which have escaped destruction but have never yet been printed. Such writings I believe to be numerous—some in Latin, some in racy translations, some in the original English in which they were written.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

A quarterly meeting of the Council was held on June 9th, Sir Rickman Godlee, the President, being in the chair.

The President reported the result of the recent election of five members of Council, which was published last week in The Lancet, and he further stated that Mr. Stanley Boyd being fourth on the poll became substitute member of Council for Mr. R. Clement Lucas until 1917, and that Mr. Charles Ryall being fifth on the poll became substitute member of Council for Mr. Jonathan Hutchinson until 1915.

Mr. Ballance, Mr. Boyd, Mr. Thorburn, Mr. Eccles, and Mr. Ryall were introduced, made declarations in the terms of the oath prescribed by the Charter of 1800, and took their seats in the Council.

It was resolved—

> That the Council desire to express to Mr. William Pearson, upon his retirement from the post of prosector, their high appreciation of his services to the College during a period of 58 years. The Council believe that the many preparations added to the Museum as the result of his work are justly counted amongst the most treasured possessions of the College and that they will stand as a lasting record of his exceptional skill and industry.

The President reported that the following demonstrations would be given at the College in connexion with the Fifth Annual Session of the Clinical Congress of Surgeons of North America:—July 27th, 11.30 A.M., Professor A. Keith: The Nature of Peritoneal Adhesions; 28th, 11.30 A.M., Mr. Shattock: Specimens illustrating the Growth of Tumours; 29th, 11.30 A.M., Sir Rickman Godlee: Hunterian and Listerian specimens; 30th, 11.30 A.M., Professor Keith: Hunter's specimens illustrating Growth of Bone; 31st, 11.30 A.M., Mr. Colyer: Specimens from the Odontological Collection illustrating General Surgery; and at 5 P.M., Mr. A. H. Cheatle: The Surgical Anatomy of the Temporal Bone.

The President also stated that a reception would be held in the College from 4 to 6 in the afternoon of Wednesday, July 29th.

Election of President.

Sir William Watson Cheyne was elected President and Sir Frederic Eve and Sir Anthony Bowlby were elected Vice-Presidents.

The following appointments were made:—Erasmus Wilson Lecturer: Mr. S. G. Shattock. Arnott Demonstrator: Professor Keith. Hunterian Professors: Arthur Keith (six lectures), Rupert Farrant (two lectures), William Sampson Handley (one lecture), John Howell Evans (one lecture), Frederick Charles Pybus (one lecture), and Harry Blakeway (one lecture). Arris and Gale Lecturers: Frederick Wood Jones (one lecture) and David Waterston (two lectures). Mr. J. F. Colyer was elected to give two odontological demonstrations.

Sir Rickman Godlee was elected a member of the Executive Committee of the Imperial Cancer Research Fund.

Donations and Bequests.—The Royal Dental Hospital of London has received a grant of £1000 from the executors of the late Sir William Dunn, being part of the residue of his estate.—Mr. William Hartmann has sent a donation of £1000 to the trustees of the Lord Mayor Treloar Cripples' Hospital and College for a "Meta Hartmann Cot" in the hospital at Alton.

ROYAL COMMISSION ON VENEREAL DISEASES.

At the forty-fourth meeting of the Royal Commission evidence was given by Mr. J. E. R. Macdonagh, one of the surgeons of the Lock Hospital and by Mr. C. A. Parker, representing the State Medical Service Association.

Mr. Macdonagh said that at the present time the education of medical students in regard to venereal disease was quite inadequate, and it was very important in his opinion that compulsory clinical education of students in venereal disease should be adopted. He considered that widespread clinical experience would render public laboratories for the carrying out of bacteriological and other methods of diagnosing syphilis superfluous. The important thing in dealing with syphilis was to treat cases at the earliest possible moment, and these early cases could be diagnosed with greater certainty by clinical than by pathological methods. A negative Wassermann reaction in early syphilis did not exclude the disease, and if treatment were deferred until the reaction became positive the golden opportunity of cure was lost, however energetic the treatment might be. Syphilitic sores, moreover, frequently existed in which spirochætæ could not be found. Mr. Macdonagh was of opinion that syphilitic nervous lesions were steadily on the increase, and he considered that the spasmodic administration of salvarsan commonly practised in this country was likely to lead to a further increase. This spasmodic administration of the drug, moreover, gave a false sense of security and therefore rendered patients a greater danger to the community. He advocated that the Lock Hospital should be enlarged. The number of patients attending the hospital was steadily increasing. Mr. Macdonagh thought that medical research had been very insufficiently supported by the Government, and that much more might be done in this direction; he suggested that it might be an advantage if payment were only made for results.

Mr. Parker maintained that by the establishment of a State Medical Service many difficulties now connected with the treatment of venereal diseases could be overcome. It was essential that treatment should be efficient and confidential and in the last resort compulsory, and that the medical officers of health should be in touch with all cases of venereal disease. Efficient treatment would be procurable for the whole State service and would be open to all sufferers. The treatment would be confidential; there would be no special service of medical practitioners set aside for dealing exclusively with venereal diseases, by consulting whom patients would at once declare to the world at large the nature of their complaint. The size of the State Medical Service, its large and manifold functions, and its large and specialised staffs would render it impossible for the public to suspect the reasons which led the patient to ask advice. The treatment of venereal disease would be but a part of the preventive and curative treatment offered to all sufferers alike under a State Medical Service. No action whatever would be taken on the part of any public authority as long as a patient attended regularly and carried out the instructions of his doctor, but in the event of his failing to do so he would be proceeded against as a public danger in the same way as is done in the case of ordinary infectious diseases. Mr. Parker considered the difficult question of notification would be solved under a State Medical Service. Notification in the sense of a notice sent by a private practitioner to the medical officer of health would become unnecessary for all patients attending a State doctor would be registered with the history and nature of their complaint, and to those persons the medical officer of health, who would represent but another part of the same service, would have daily access. In the event of their being a body of private practitioners outside the service there should be notification of venereal disease either by name or number, and the medical officer of health would satisfy himself that the necessary treatment was being carried out by the patient. If this were not so the name of the patient would be declared, and he would be transferred to the charge of the State Medical Service. In order to obtain reliable statistics as to the fatal results of venereal diseases and their sequelæ it might be advisable to have a dual system of death certification—one for the purposes of the State Medical Department giving the fullest details as to the primary and secondary causes of death, and the other avoiding all facts which might cast a slur on the memory of the dead to be handed to the relatives of the deceased.

At the forty-fifth meeting the headmasters of Eton and Rugby appeared before the Commission. They considered that the ideal was that boys should be instructed in matters relating to sex by their parents, but their experience showed that that method was not likely at the present moment to be successful to the extent that it was desirable. Instruction at school should be given with much caution, and it should be the special responsibility of the headmaster to give it or to see that it was given. A propaganda based solely on hygienic principles would not bring in the chivalrous appeal which was necessary and was not likely to succeed. At the same time hard exercise, hard work, wholesome society, and moderation in diet and drinking were of great use as safeguards against indulgence.

At the same meeting Dr. Santoliquido, formerly Director-General of the Public Health Department in Italy, gave an account of the administrative methods adopted with regard to venereal diseases in that country.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In the 97 English and Welsh towns with populations exceeding 50,000 at the last Census and whose aggregate population at the middle of this year is estimated at 18,120,059 persons, 9091 births and 4000 deaths were registered during the week ended Saturday, July 11th. The annual rate of mortality in these towns, which had been 12·9, 12·1, and 12·7 per 1000 in the three preceding weeks, fell again to 11·5 per 1000 in the week under notice. During the 13 weeks of last quarter the mean annual death-rate in these towns averaged 13·8, against 13·1 per 1000 in London during the same period. Among the several towns the death-rate last week ranged from 2·8 in Eastbourne, 4·3 in Exeter, 4·7 in Hornsey, 6·0 in Enfield, 6·1 in Wimbledon, and 6·2 in Southend-on-Sea, to 16·7 in Warrington, 17·0 in Gateshead and in Tynemouth, 17·6 in Liverpool, and 22·8 in Bootle.

The 4000 deaths from all causes were 421 fewer than the number in the previous week, and included 394 which were referred to the principal epidemic diseases, against 394 and 444 in the two previous weeks. Of these 394 deaths, 139 resulted from measles, 112 from infantile diarrhœal diseases, 77 from whooping-cough, 30 from diphtheria, 22 from scarlet fever, 13 from enteric fever, and 1 from small-pox. The mean annual death-rate from these diseases was equal to 1·1 per 1000, and was 0·2 less than the rate in the previous week. The deaths attributed to measles, which had been 140, 144, and 130 in the three preceding weeks, rose to 139 last week, and caused the highest annual death-rates of 1·4 per 1000 in Sheffield, 1·7 in Rochdale, 1·8 in Liverpool, and 2·1 in Oldham. The fatal cases of whooping-cough, which had been 99, 93, and 95 in the three preceding weeks, fell to 77 last week; the highest death-rates from this disease last week were 1·5 in Birkenhead and 2·1 in Warrington. The deaths from diphtheria, which had been 40, 35, and 64 in the three preceding weeks, fell to 30 last week; the highest death-rate was 2·7 in Great Yarmouth. The fatal cases of diarrhœa and enteritis (among infants under 2 years), which had been 79, 79, and 116 in the three preceding weeks, were 112 last week; and included 21 in London, 10 in Sheffield, 9 in Liverpool, 8 in Birmingham, and 4 each in Birkenhead and Wigan. The deaths from scarlet fever, which had been 24, 30, and 23 in the three preceding weeks, were 22 last week; of these 22 deaths 5 occurred in London. The deaths from enteric fever, which had been 8, 13, and 16 in the three preceding weeks, fell to 13 last week, and included 4 in London and 3 in Portsmouth. The fatal case of small-pox was recorded in Rochdale.

The number of scarlet fever patients under treatment in the London Fever and the Metropolitan Asylums Hospitals, which had steadily increased from 2862 to 3092 in the eight preceding weeks, further rose to 3109 on Saturday last; 414 new cases were admitted during the week, against 405, 440, and 442 in the three preceding weeks. These hospitals also contained on Saturday last 1085 cases of diphtheria, 256 of whooping-cough, 42 of measles, and 38 of enteric fever, but not one of small-pox. The 921 deaths from all causes in London were 227 fewer than the previous number, and corresponded to an annual death-rate of 10·6 per 1000. The deaths referred to diseases of the respiratory system, which had been 163, 144, and 126 in the three preceding weeks, fell to 111 in the week under notice, and were 5 above the number in the corresponding week of last year.

Of the 4000 deaths from all causes in the 97 towns, 193 resulted from different forms of violence and 348 were the subject of coroners' inquests. The causes of 29, or 0·7 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in London, West Ham, Portsmouth, Bristol, Leicester, Nottingham, Manchester, Salford, Bradford, Leeds, Sheffield, and in 71 other smaller towns. Of the 29 uncertified causes of death, 8 were registered in Birmingham, 4 in Liverpool, and 3 in Stoke-on-Trent.

HEALTH OF SCOTCH TOWNS.

In the 16 largest Scotch towns with an aggregate population estimated at 2,293,200 persons at the middle of this year, 1158 births and 597 deaths were registered during the week ended Saturday, July 11th. The annual rate of mortality in these towns, which had been 14·6, 13·8, and 14·1 per 1000 in the three preceding weeks, fell to 13·6 per 1000 in the week under notice. During the 13 weeks of last quarter the mean annual death-rate in these towns averaged 15·5, against a corresponding rate of 13·8 per 1000 in the 97 large English towns. Among the several towns the death-rate last week ranged from 7·0 in Clydebank, 7·3 in Paisley and Kilmarnock, and 7·8 in Falkirk, to 14·1 in Glasgow, 15·7 in Edinburgh, 16·9 in Dundee, and 22·0 in Ayr.

The 597 deaths from all causes were 24 fewer than the number in the previous week, and included 41 which were referred to the principal epidemic diseases, against 52 and 41 in the two preceding weeks. Of these 41 deaths, 13 resulted from whooping-cough, 10 from measles, 10 from infantile diarrhœal diseases, 3 from scarlet fever, 3 from enteric fever, and 2 from diphtheria. The mean annual death-rate from these diseases was equal to 0·9 per 1000, and was 0·2 below the rate recorded in the 97 large English towns. The deaths attributed to whooping-cough, which had been 20, 18, and 12 in the three preceding weeks, were 13 last week, and included 9 in Glasgow and 2 in Coatbridge. The fatal cases from measles, which had been 17, 7, and 9 in the three preceding weeks, rose to 10 last week; of these 10 deaths 6 were registered in Glasgow. The deaths from infantile diarrhœal diseases, which had been 21, 10, and 13 in the three preceding weeks, fell to 10 last week and included 6 in Glasgow and 2 in Aberdeen. The 3 deaths from scarlet fever were slightly below the average in recent weeks, and included 2 which were registered in Glasgow. The 3 deaths from enteric fever exceeded the average in recent weeks, and included 2 in Glasgow. The 2 deaths from diphtheria, which also occurred in Glasgow, showed a marked fall from the numbers in recent weeks.

The deaths referred to diseases of the respiratory system, which had been 77, 64, and 63 in the three preceding weeks, further fell to 61 last week; 26 deaths were referred to different forms of violence, against 26 and 33 in the two preceding weeks.

HEALTH OF IRISH TOWNS.

In the 27 town districts of Ireland, with an aggregate population estimated at 1,205,280 persons at the middle of this year, 671 births and 368 deaths were registered during the week ended Saturday, July 11th. The annual rate of mortality in these towns, which had been 17·7, 15·7, and 16·2 per 1000 in the three preceding weeks, fell to 15·9 per 1000 in the week under notice. During the 13 weeks of last quarter the mean annual death-rate in these towns averaged 19·0 per 1000; in the 97 large English towns the corresponding rate did not exceed 13·8, while in the 16 Scottish towns it was 15·5 per 1000. The annual death-rate in the week under notice was equal to 15·0 in Dublin (against 10·6 in London and 14·1 in Glasgow), 17·0 in Belfast, 15·6 in Cork, 26·6 in Londonderry, 12·2 in Limerick, and 17·1 in Waterford, while in the 21 smaller towns the mean rate was 14·2 per 1000.

The 368 deaths from all causes were 7 below the number in the previous week, and included 38 which were referred to the principal epidemic diseases, against 36 and 47 in the two preceding weeks. Of these 38 deaths, 13 resulted from infantile diarrhœal diseases, 10 from measles, 6 from scarlet fever, 5 from whooping-cough, 3 from enteric fever, and 1 from diphtheria, but not one from small-pox. The mean annual death-rate from these diseases was equal to 1·6 per 1000, against 1·1 and 0·9 per 1000 in the English and Scotch towns respectively. The deaths attributed to infantile diarrhœal diseases, which had been 15, 11, and 14 in the three preceding weeks, were 13 last week, and included 5 in Belfast, 4 in Dublin, and 2 in Londonderry. The fatal cases of measles, which had been 19, 13, and 15 in the three preceding weeks, fell to 10 last week; of these 10 deaths, 6 were registered in Belfast and 4 in Dublin. The deaths from scarlet fever, which had been 8, 2, and 3 in the three preceding weeks, rose to 6 last week, and included 5 in Belfast. The deaths from whooping-cough, which had been 3, 6, and 10 in the three preceding weeks, fell to 5 last week, and included 2 in Belfast and 2 in Dublin. The deaths from enteric fever, which had been 3, 2, and 1 in the three preceding weeks, rose to 3 last week, and included 2 in Dublin. The one death from diphtheria occurred in Belfast, and was considerably below the average in recent weeks.

The deaths referred to diseases of the respiratory system, which had been 68, 57, and 41 in the three preceding weeks, were 53 in the week under notice. Of the 368 deaths from all causes, 109, or 30 per cent., occurred in public institutions and 7 resulted from various forms of violence. The causes of 9, or 2·4 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the 97 large English towns the proportion of uncertified deaths did not exceed 0·7 per cent.

THE SERVICES.

Royal Navy Medical Service.

Staff-Surgeon Frederick Francis Mahon has been promoted to the rank of Fleet-Surgeon in His Majesty's Fleet (dated July 11th, 1914).

The following appointment has been announced: Staff-Surgeon A. T. Gailleton to the *Falmouth*, on recommissioning.

Army Medical Service.

Surgeon-General William W. Kenny is placed on retired pay (dated July 14th, 1914). Colonel Tom P. Woodhouse to be Surgeon-General, vice W. W. Kenny, retired (dated July 14th, 1914). Lieutenant-Colonel Frederick W. C. Jones, from the Royal Army Medical Corps, to be Colonel, vice T. P. Woodhouse, promoted (dated July 14th, 1914). Colonel (temporary Surgeon-General) William G. Macpherson, C.M.G., Honorary Physician to the King, to be Surgeon-General to complete establishment (dated July 14th, 1914). Lieutenant-Colonel Thomas W. Gibbard, Royal Army Medical Corps, is appointed an Honorary Surgeon to the King, and granted the brevet rank of Colonel, vice Surgeon-General W. W. Kenny, M.B. (dated July 14th, 1914).

Royal Army Medical Corps.

Major Lionel A. Mitchell to be Lieutenant-Colonel (dated July 14th, 1914). Captain Francis Romney Coppinger, from the Indian Medical Service, to be Captain, vice J. B. Hanafin, who exchanges (dated July 15th, 1914).

Surgeon-General R. W. Ford, D.S.O., has taken up duty at Headquarters of the Northern Command at York as Deputy Director of Medical Services.

Colonel R. Kirkpatrick, C.M.G., Assistant Director of Medical Services to the Presidency and Assam Brigades, has been transferred from Calcutta to Darjeeling Cantonment. Colonel T. P. Woodhouse has taken up duty as Deputy Director of Medical Services to the Aldershot Command.

Lieutenant-Colonel F. Caton Jones has arrived home for duty from Meerut Cantonment. Lieutenant-Colonel C. H. Hale, D.S.O., has been transferred from Maymyo, Burma, to hold charge of the Military Hospital at Sialkot Cantonment. Lieutenant-Colonel F. W. Hardy has arrived home from India on leave of absence. Lieutenant-Colonel R. H. Hall has been transferred from the Military Hospital at Cosham to Tidworth Park Camp. Lieutenant-Colonel H. I. Pocock has been transferred from Campbellpore to the Military Hospital at Sialkot. Lieutenant-Colonel A. Kennedy has been placed under orders for service abroad. Lieutenant-Colonel J. J. Gerrard has been appointed Senior Medical Officer to the Sierra Leone Protectorate. Lieutenant-Colonel R. Holyoake has been appointed to hold charge of the Military Hospital at Kamptee Cantonment.

Major A. G. Thompson has arrived home for duty from India. Major R. W. Longhurst has been transferred from Ambala to Subathu Cantonment. Major W. Tibbits has been appointed to Mooltan. Major W. M. H. Spiller has been appointed to hold charge of the Military Hospital at Calcutta. Major J. Matthews has been transferred from Secunderabad to the Military Hospital at York. Major S. W. Sweetnam has arrived home for duty from Ambala. Major C. W. Mainprise has been transferred from Rawal Pindi to Kuldana Cantonment. Major E. E. Parkes has been transferred from Plymouth to the Military Hospital at Jubbulpore Cantonment. Major H. M. Nicholls has joined the Scottish Command. Major L. Cotterill has been transferred from Nowshera to Cherat Cantonment. Major J. G. McNaught, Major J. P. Silver, and Major C. W. Profeit have been placed under orders for service abroad. Major G. J. A. Ormsby has taken up duty in the Irish Command. Major J. F. Martin has been transferred from Sandhurst to the Aldershot Command. Major A. E. Hamerton, D.S.O., has been appointed to the Colchester District. Major R. H. Lloyd has taken up duty at the Military Hospital, Dagshai. An exchange on the roster for service abroad has been approved between Major R. W. Clements and Major S. H. Fairrie; the former officer will now proceed abroad during the coming trooping season instead of the latter. Major R. C. Lewis has arrived home on leave of absence from Gibraltar. Major J. C. B. Statham has embarked for a tour of service in the Sierra Leone Protectorate. Major H. Simson has been granted general leave of absence home from India for four and a half months.

Captain C. J. Wyatt has arrived home for duty from the Sierra Leone Protectorate. Captain G. A. D. Harvey has been appointed to the Egyptian Army. Captain D. P. Watson has been appointed to the Irish Command. Captain R. F. O'T. Dickinson has been transferred to the Home Establishment from India. Captain G. Petit has taken up duty in the Eighth (Lucknow) Division on transfer from the Third (Lahore) Division. Captain R. Storrs has joined at Winchester. Captain F. T. Turner has been appointed to the Southern Command. Captain F. A. H. Clarke has been transferred from the Military Hospital at Calcutta to Lebong Cantonment. Captain J. B. Hanafin has arrived home on leave of absence from Ambala Cantonment. Captain J. Fairbairn has been appointed to the Scottish Command. Captain D. Ahern has been transferred from Dublin to the Military Hospital at the Curragh Camp. Captain J. J. H. Beckton has been appointed to the Military Hospital at Rawal Pindi. Captain W. K. Beaman has taken up duty in the Northern Command. Captain E. B. Booth has joined at Tower Hill, West Africa. An exchange on the roster for service abroad has been approved between Captain H. E. Priestley and Captain H. B. Kelly; the former officer will now proceed abroad during the coming trooping season instead of the latter. Captain C. T. V. Benson has been appointed Staff-Surgeon at Fort St. George, Madras. Captain C. W. Bowle has been appointed to hold charge of the Military Hospital at Enniskillen. Captain F. W. M. Cunningham has been transferred from the Sialkot Cantonment to the Murree Hills. Captain W. W. Boyce has been appointed to the Aldershot Command. Captain C. M. Rigby has been appointed to officiate as Surgeon to the Governor of Bombay. Captain J. D. Bowie has been appointed to the staff of the Military Hospital at Calcutta.

Lieutenant A. F. C. Martyn has embarked for Egypt. Lieutenant O. W. J. Wynne has been appointed Specialist in Advanced Operative Surgery to the Eighth (Lucknow) Division. Lieutenant R. B. Price, Lieutenant J. B. A. Wigmore, and Lieutenant J. Hare have been placed under orders for service abroad. Lieutenant A. G. Bigham has been transferred from York to the Military Hospital at Rawal Pindi. Lieutenant H. F. Panton has been transferred from Lahore to the Mhow Division. Lieutenant R. W. Vint has been appointed to the Military Hospital at Lucknow Cantonment. Lieutenant W. O. W. Ball has been placed in medical charge of the Cavalry Barracks at Longmoor.

Indian Medical Service.

The King has approved of the retirement of Surgeon-General Aylmer Martin Crofts, C.I.E., K.H.S. (dated May 25th, 1914).

Lieutenant-Colonel L. F. Childe has been appointed Principal of the Grant Medical College at Bombay. Lieutenant-Colonel C. A. Johnstone has joined at Mhow. Lieutenant-Colonel W. D. Sutherland has been appointed Imperial Serologist. Lieutenant-Colonel P. Carr-White has been appointed Residency Surgeon and Assistant to the Resident in Nepal State. Lieutenant-Colonel H. B. Melville has been placed on special deputation duty at Delhi. Lieutenant-Colonel J. Jones has joined at Bombay. Lieutenant-Colonel G. Y. C. Hunter, superintendent of the Central Prison at Buxar, has been granted six months' extension of leave.

Major T. S. B. Williams has been appointed Residency Surgeon to Gwalior State. Major A. M. Fleming, civil surgeon at Jubbulpore, has been appointed to officiate as Superintendent of the Central Prison at Jubbulpore during the absence of Captain W. J. Powell, transferred to the Central Research Institute at Kasauli Cantonment. Major R. F. Baird has been appointed to hold civil medical charge at Benares Cantonment. The services of Major A. W. Greig have been placed permanently at the disposal of the Government of the Punjab for employment in the Prison Department. Major S. Hunt has been appointed Residency Surgeon in the Persian Gulf. Major F. S. C. Thompson has been appointed Superintendent to the Central Jail at Alipore.

Captain W. H. Odlum has been appointed Medical Officer to the 30th Lancers. The services of Captain H. H. King have been placed temporarily at the disposal of the Director-General for employment on special duty in connexion with the prevention of malarial fevers. Captain C. L. Dunn, Deputy Sanitary Commissioner to the United Provinces of Agra and Oudh, has been granted eight months' leave of absence home from India on medical certificate. Captain R. A. Chambers has taken up duty as Staff Surgeon at Bangalore. The services of Captain A. F. Babonau have been placed temporarily at the disposal of the Chief Commissioner of Assam for civil employment in the Medical Department. Captain T. H. Bonnar, civil surgeon to the Garo Hills District, has been appointed Magistrate in that area. Captain J. F. Boyd has been appointed to officiate as Civil Surgeon to the Bareilly District.

Special Reserve of Officers.

Royal Army Medical Corps.

The undermentioned Captains to be Majors:—William H. G. H. Best (dated April 30th, 1914). James C. Furness (dated June 18th, 1914).

The undermentioned to be Lieutenants (on probation):—Cadet George Harold Rossdale, from the Oxford University Contingent, Officers Training Corps (dated June 3rd, 1914). Henry Cuthbert Bazett (dated June 19th, 1914).

Territorial Force.

Royal Army Medical Corps.

2nd South-Western Mounted Brigade Field Ambulance, Royal Army Medical Corps: Lieutenant Rupert Waterhouse to be Captain (dated Oct. 15th, 1913).

1st West Lancashire Field Ambulance, Royal Army Medical Corps: Samuel McCausland to be Lieutenant (dated June 1st, 1914).

1st London (City of London) Field Ambulance, Royal Army Medical Corps: Cadet Lance-Corporal Eric Donaldson, from the University of London Contingent, Senior Division, Officers Training Corps, to be Lieutenant (dated July 11th, 1914).

2nd London Sanitary Company, Royal Army Medical Corps: William John More Slowan to be Lieutenant (dated June 9th, 1914).

For attachment to Units other than Medical Units.—John Livingston to be Lieutenant (dated May 23rd, 1914).

Attached to Units other than Medical Units.—Maurice Cameron Anderson to be Lieutenant (dated June 11th, 1914). Lieutenant Kenneth Mackinnon resigns his commission (dated July 11th, 1914).

Journal of the Royal Army Medical Corps.

The July issue of this journal opens with a paper on Humidity and Heatstroke, by Colonel R. J. S. Simpson, C.M.G., which is intended to be read in connexion with Dr. M. S. Pembrey's article on Heatstroke in the June issue of the same journal. Major H. Ensor, D.S.O., writes an interesting description of a Day's Work on the Sudan Sleeping Sickness Commission, and Major J. C. B. Statham contributes a Report on a Series of 833 Medical Pyrexias occurring in the Sierra Leone Garrison during the period October 1912–1913, with remarks on the bearing of these diseases on the health of the troops. An important joint communication by Major S. L. Cummins, Captain C. J. Coppinger, and Lieutenant A. L. Urquhart appears under the title of Further Observations on the Presence of Antibodies for Micrococcus Melitensis in the Milk of English Cows. The paper is a report in some detail on the milk of one of a series of 7 cows from a London dairy examined for agglutinins. Two of these animals gave positive results, one of which, Cow 5, was found to agglutinate micrococcus melitensis in dilutions varying from 1 in 250 to 1 in 1000 on different dates. In the result the milk, whey, and blood serum of Cow 5 behaved towards micrococcus melitensis in a manner comparable to the body-fluids of animals suffering from, or immunised against, this organism, due allowances being made for differences in concentration of "antisubstances" and degrees of immunity. Colonel R. H. Firth discusses Osmosis in an article complementary to one on Colloids and Solutions which he contributed to a previous issue.

Deaths in the Services.

Staff-Surgeon Archibald Leslie Archer, R.N. (retired), at his residence, 2, Donegal-terrace, Stoke, Devonport, on June 17th, in his 87th year. Shortly after graduating as M.D. Edin. in 1849 he entered the Royal Navy as assistant surgeon. He served on H.M.S. *Nile* in the Baltic Sea during the Russian war of 1854–55, and was awarded the Baltic medal. He retired from the service in 1860. Staff-Surgeon Archer took a great interest in all public matters in Devonport; he was formerly a member of the local town council and on the honorary staff of the Royal Albert Hospital. In 1888 he was appointed assistant actuary to the Royal Naval Annuitant Society at Devonport.

Epsom College: Founder's Day.—The President of the College, the Earl of Rosebery, K.G., is expected to attend the annual prize giving on July 25th, the last over which the present headmaster will preside. There will be service in the College chapel at 2.45 p.m., and the prizes will be distributed in the big schoolroom at 3.15.

THE GOVERNMENT OF INDIA'S SANITARY POLICY.

(FROM A SPECIAL CORRESPONDENT.)

THE Government of India have issued an important resolution on the subject of sanitary progress and development in India. The resolution lays down three broad principles on which sanitary work must proceed in India. It must rest on a knowledge of the people, their conditions of life, their prejudices, social customs and habits, their surroundings and financial means, and it must secure their coöperation. It must recognise the diversity of local conditions in a country which includes numerous communities, castes, and creeds, which exhibits almost every variety of climate, temperature, humidity, and level of subsoil water. Its introduction must be preceded by preliminary local surveys, inquiry, or experiment. The policy of the Government of India is to keep the control of research under itself, but to decentralise other branches of sanitation.

It then proceeds to consider the present state of our knowledge with respect to all the principal diseases of India, and also on such subjects as infantile mortality, vital statistics, urban sanitation, conservancy, water-supply, drainage, epidemic diseases, pilgrim centres and pilgrimages, the adulteration of food and drugs, adulteration of milk, town planning and relief of congested areas, and rural sanitation. On each point it indicates the state of knowledge so far reached and the broad lines of the policy which should be pursued in future. It concludes with the expression of the opinion that the diffusion of sound education will remain a most potent and penetrating instrument of sanitation among a population which still views it for the most part with hostility or unconcern.

Investigations into the Causation and Prevention of Disease.

Research is slowly lifting the veil which hides the secrets of disease and mortality and opening up fields of inquiry scarcely thought of a generation ago. In 1902 a research institute was founded at Guindy, in Madras, named the King Institute after Lieutenant-Colonel King, C.I.E., I.M.S., in view of his devoted efforts in the cause of sanitation in that presidency. The Central Research Institute has been established at Kasauli. The Plague Research Laboratory at Parel has been extended and re-equipped, and is now the bacteriological laboratory for the Bombay Presidency; and a proposal is under consideration to attach to it a school of tropical medicine. A research laboratory and school of tropical medicine are under construction at Calcutta. Pasteur institutes exist at Kasauli and Coonoor. A third is about to be established in Burma, and it is under discussion to establish others in Assam (where it will be combined with a research laboratory) and Bombay.

Besides the routine work connected with the bacteriological diagnosis of disease, antirabic treatment, the manufacture of various vaccines and sera, and general research, these laboratories at different times have been centres of many special investigations, notable amongst which are those on plague and enteric fever. It is hoped that before long each province in India will have a laboratory fully equipped for research. The foundation of the Indian Research Fund Association in 1911 has marked an important era in sanitary progress. The association has been active and can already point to some achievement. Out of an income of Rs.15 lakhs (£100,000) received since its incorporation and up to the end of 1913–14, an expenditure of over Rs.14 lakhs (£93,333) has been sanctioned. In 1911 Major S. P. James, I.M.S., was deputed to study yellow fever in its endemic area and to draw up proposals for protecting India against the introduction of the disease. These proposals are still under consideration. In the meanwhile, stegomyia surveys have been carried out in Calcutta, Bombay, Madras, Karachi, Rangoon, and other seaports. Antimalarial schemes based on preliminary surveys have been carried out at a cost of Rs.6,02,000 (£40,133). Investigations are at present in progress into the problems connected with the prevalence of cholera, kala-azar, dysentery, leprosy, and goitre.

Malaria and Plague.

The report states that the conditions and causes underlying the prevalence of malaria vary greatly in different places, and no one antimalarial measure is suitable for all. Quinine both as a prophylactic and curative agent is of great value to the individual. Its powers of saving life, alleviating sickness, and destroying sources of infection cannot be overestimated. There should be no relaxation of the efforts to educate the people in the use of the drug, and its sale by shopkeepers in rural areas might well be encouraged. The regular administration of quinine to children in schools during the malarial season is a practical measure of easy application and of proved ability; it is valuable alike for its immediate good effects on the health of the scholars and as a means of spreading knowledge of the use of quinine. The treatment of permanent collections of water is important whether it be effected by water tidiness, through sloping of banks and clearing of weeds, or stocking with fish of proved ability as mosquito destroyers or by both methods.

As regards plague, the chief conclusions that have been reached so far may be summarised as follows. In India, where the pneumonic form of the disease is relatively rare, plague is essentially a disease of rats communicable to man and a few of the lower animals; an epidemic amongst men is directly dependent upon an epizootic among rats. Plague spreads from rat to rat and from rat to man through the agency of the rat-flea. The plague bacillus under natural conditions does not long retain its vitality outside the body of the rat, the rat-flea, or man. Plague has a definite seasonal prevalence, generally constant for any given place, but varying in different parts of India; investigation shows that the plague season coincides with the season of maximum prevalence of rat-fleas. Infection is carried from place to place only over short distances by the spontaneous movement of rats; in other cases infection is carried either (*a*) by the agency of man or personal effects acting as a means of transport for infected fleas; or (*b*) by means of merchandise, which may contain rats as well as fleas. It is not yet established which of these two agencies is the more important, but recent work, both in India and the Far East, has emphasised the importance of grain as a vehicle for the transmission of infection.

In comparatively few places in India does plague infection survive the adverse conditions of the non-epidemic season: such places are usually either (*a*) large towns, or (*b*) places which have been infected late in the epidemic season. In places which have suffered from repeated and severe epidemics of plague the rats have become less susceptible to plague than are the rats in places which have remained plague-free or have suffered but slightly. These conclusions, says the resolution, have been arrived at after much careful and painstaking research, and constitute a great advance on the knowledge of plague which was available when in 1896 it first appeared in Bombay. They point apparently to a simple solution of the plague problem—no rats, no plague.

Urban and Rural Sanitary Problems.

The resolution then deals with other diseases, infantile mortality, scavenging, and the adulteration of food. While much has been done to provide drainage and pure water in large cities, there can be little hope of improving their sanitary condition permanently until measures are taken to relieve congested areas and to provide broader streets and buildings more open to sun and air. The constitution in 1898 of the Improvement Trust in Bombay marked a notable step in advance. By the end of 1912–13 the Bombay Trust had incurred an expenditure of Rs.488 lakhs (£3,253,333) towards schemes aggregating 802 lakhs (£5,346,666). Broad roads have been driven through the heart of the city, slum areas have been abolished, and dwellings provided for the accommodation of the poorer classes.

The difficulties which surround rural sanitation in India are well known and persistent. Contaminated sites, polluted water-supply, badly constructed and insanitary dwellings, and the habits and prejudices of the people raise obstacles to progress, which in most provinces are still well-nigh insuperable. The Government of India have informed local governments that they are at liberty to expend a portion of the imperial grants for urban sanitation on rural sanitation, provided practical schemes for this purpose are forthcoming, but they have postponed special imperial grants for this purpose until such schemes are more generally advanced. They fully appreciate the enormous importance of rural sanitation in a country which is mainly agricultural. Past experience and present conditions, however, indicate that the subject is still one for experiment on lines conceived to attract the coöperation of the people. Without their cordial help no sanitary staff could effectively deal with the village sanitation of the 220,000,000 who inhabit rural areas in British India. The danger of employing low-paid and imperfectly trained subordinates in a matter so closely affecting village life is now generally recognised and should never be out of mind.

The resolution then points out the importance of education and concludes: There is room for many workers in the sanitary field. The Governor-General in Council appeals with confidence to all who are interested in the well-being of India to join with him and the local governments in a sustained endeavour to give effect to His Imperial Majesty's most gracious wish that the homes of his Indian subjects may be brightened and their labour sweetened by the spread of knowledge with all that follows in its train, a higher level of thought, of comfort, and of health.

Home and Foreign Notes.

(FROM OUR OWN CORRESPONDENTS.)

MANCHESTER.

A Visit of American Surgeons.

A PARTY of American surgeons visited Manchester on July 8th. The visit was organised by the American Gynæcological Society in order that its members might have the best opportunity of seeing the work which is being done in their own departments away from home. Most of the chief cities and universities of the United States sent representatives to Manchester, which is one of the five cities in England and Wales on the definite programme of the visitors. The Royal Infirmary, the St. Mary's Hospital, and the Lying-in Hospital were visited. At the Royal Infirmary our visitors were obviously much impressed by the arrangement and the very thorough equipment of the spacious buildings. The homeliness and comfort obtained simultaneously, and the decoration of the wards with flowers appealed to them. Surprise was expressed that, as usual, the public hospitals in this country have no accommodation for private patients who might wish for more luxurious surroundings. What, however, pleased the surgeons most was that they saw in the operating theatres of the institutions they visited "swift, skilful, and expert operating," and "sane, wise, direct, careful work"—I quote their flattering words.

Increase of Medical Students at Manchester.

The graduation ceremonial took place on July 4th. From the annual reports issued by the Vice-Chancellor we find that in the Faculty of Medicine during the session 1913–14 there were 305 students of medicine, 34 being women. In the Faculty of Medicine 129 students were working in preparation for the examinations of Manchester University; 4 for the University of London; 6 for other universities; 3 were preparing for the Fellowship of the Royal Colleges of Surgeons of England; 2 for the F.R.C.S. of Edinburgh; 2 for the L.S.A.; 33 were preparing for the Conjoint Examination of the Royal College of Physicians and Surgeons of England; 2 for the Diploma in Psychological Medicine; 3 for the Degree in Dentistry; 57 for the Diploma in Dentistry of Manchester; 13 for the Diploma in Dentistry of the Royal College of Surgeons of England; 53 were working in the following special departments—viz., pharmaceutical, 3; public health, 46 (37 of these were preparing for the Diploma in Public Health, 4 for the Diploma in Veterinary State Medicine, 7 for the tuberculosis course, and 5 carrying out research); and 4 were taking special medical courses. The number of beginners in medicine was considerably above that of previous years. The total number of students during the academic year was 1654.

Successful Appeal for the Radium Scheme.

At one time it seemed that the Manchester radium scheme might have to be either abandoned or postponed until the necessary £25,000 was obtained. The results of the initial appeal fell far short of the expectations of the committee. The address of Dr. Dawson Turner gave an enormons impetus to the scheme; the striking feature, however, is what has been done largely through the enterprise of the newspapers, more especially of those controlled by Messrs. Hulton and Co. All the arts, devices, and carefully worded appeals that energetic journalists know well how to employ have been used with almost magical and immediate results. For a long time there was a standstill at £8000. A "Radium Day" was instituted in Manchester and other towns; and appeals were made in all directions. As the cause was good, Manchester and the neighbouring towns have responded most handsomely, and the working men and women have contributed according to their means. In a little over a fortnight the total contributions have increased from £8000 to £18,450. The Joint Committee have appointed Mr. Hartley Lupton, of the Physical Laboratory of the University, to be physicist in charge of the radium department about to be instituted in the Royal Infirmary, while Dr. Marsden, of the same laboratory, will be consulting physicist. The department will be got ready under their direction, and it is hoped that an initial supply of radium will be available in October.

Poor-law Children and Ophthalmia.

Owing to the prevalence of ophthalmia amongst Poor-law children in Crumpsall, and also to the fact that there were more children at Crumpsall than there is accommodation for, the Manchester board of guardians decided on July 8th to ask the sanction of the Local Government Board in respect of the purchase of a building at a cost of £7250 to be used for children suffering from ophthalmia. The situation ought to be relieved by the proposed facilities for isolation of the affected children.

Lancashire and the Annual Factories Report.

The annual report of the Chief Inspector of Factories, which was issued on July 8th, contains some remarks which have a special interest for Lancashire. The total number of persons employed in factories was 4,488,774 and in workshops 638,335. Textile factories accounted for 18,323 accidents and non-textile factories for 146,495. It is stated that from 25 to 40 per cent. of all industrial accidents are preventable if all practical means are taken. The establishment of safety committees of men and officials is recommended. Action is being taken in the cotton area in regard to the lifting of heavy weights. Cases are mentioned of children lifting skips of cotton weighing 56 lb., and of others of 13 to 16 years of age lifting up to 82 lb. As to the removal of dust, it is stated that the cotton industry can claim one of the greatest successes in regard to the removal of the dust factor as a cause of many diseases. In regard o carding engines, the report states: "It is literally true that the conditions of life have been entirely changed for many strippers and grinders, and all who have been connected with the carrying out of this reform (whether operative, employer, or inspector—and all have had a hand in it) must look with intense satisfaction upon the results of their labours."

Small-pox in Several Lancashire Towns and some Indirect Consequences.

Some time ago there were a number of cases of small-pox in Milnrow, one case also occurred in Salford, two cases at Marland and Rochdale, and another at Oldham. There was one death from small-pox at Rochdale, this being the fifth case since the outbreak a month ago. The Rochdale patient who died was an unvaccinated child who had been taken to the Marland Fever Hospital to be treated in the fever section for scarlet fever. The health committee has decided that so far as practicable no further small-pox cases are to be treated at the fever hospital. Four cases —including the fatal one—have been reported from the vicinity of the fever hospital. One case is reported from Colne. The Rochdale board of guardians has been informed by the Lancashire asylums board that no lunatics from hat district can be received in any of the ive county asylums in consequence of the existence of small-pox in Rochdale union. These outbreaks have excited some alarm at the seaside resorts to which Lancashire people at this season lock in their thousands. To allay this alarm the Rochdale Trades Council decided to send a resolution to the trades councils at the various health resorts pointing out that the reported cases were of a mild type.

July 14th.

BRISTOL AND WESTERN COUNTIES.

A New Hostel for the University of Bristol.

THE University of Bristol has during its brief career already acquired various premises for use as residential hostels. Their latest purchase is the Imperial Hotel, which stands close to Clifton Down Station, at a distance of about half a mile from the main buildings of the University itself.

Bristol Royal Blind Asylum.

As was stated in these columns a short time ago, he Bristol Blind Asylum is issuing an appeal for unds to create a capital sum, the interest of which s to be used for supplementing the wages of the blind workers of the institution from 9*s.* 9*d.* per week for men and 4*s.* for women to £1 and 12*s.* 6*d.* respectively. In order to realise this object increased subscriptions will be needed, as well as an endowment fund of £20,000. Half this sum has been anonymously promised on condition that the remainder is forthcoming, and additional promises totalling almost £4000 have also been made.

Working Hours of Nurses.

The Bristol health committee has approved of substantial reductions in the working hours of the nurses in the city isolation hospitals, a matter in which Bristol has been behind other large towns. This, if adopted, will necessitate an increase in the staff, and it cannot therefore take effect till urther accommodation can be provided.

Memorial to Dr. Edward Adrian Wilson.

Last week, at Cheltenham, Sir Clements Markham, K.C.B., formally unveiled the statue in bronze of the late Dr. E. A. Wilson in the presence of a large and distinguished gathering. Dr. Wilson is represented in Polar dress, and the statue is 7 ft. high, on a pedestal of equal height, and was designed by Lady Scott. The inscription is as follows:—

> Edward Adrian Wilson, B.A., M.B. Cantab., F.Z.S., born in Cheltenham 1872. Chief of the Scientific Staff, Artist, and Zoologist of the British Antarctic Expedition, 1910–13. He reached the South Pole January 17th, 1912, and died with Captain Scott on the great ice barrier March, 1912. "He died, as he lived, a brave true man, the best of comrades, and staunchest of friends" (letter from Captain Scott).

The Proposed Tuberculosis Hospital at Torquay.

Considerable opposition is manifested locally against the proposal of the Devon county council to erect a county tuberculosis hospital at Torquay. The Torquay town council has also protested against the scheme, and owing to the requisitions of ratepayers the Local Government Board has decided to hold an early inquiry into the matter.

The British Dental Association.

The annual meeting of the Western Branch of the British Dental Association was recently held at the Devon and Exeter Hospital, Exeter, under the presidency of Mr. R. Willcox (Clifton). There was a good attendance. Mr. Willcox in his address alluded to recent changes which had taken place in dentistry, and which had brought dentists into closer coöperation with the medical profession. Mr. W. H. Goodman (Exeter) was later inducted to the presidency and gave an interesting paper on Anæsthetics in Dental Surgery.

Royal Devon and Exeter Hospital.

The committee of the Royal Devon and Exeter Hospital has issued a strong appeal for £10,000 for making several improvements to the institution, including the erection of a new wing. Up to the present nearly £1300 have been promised.

Death of Mr. H. B. Mugliston.

Mr. H. B. Mugliston has recently died at his residence, Brent Knoll, Somerset, where he practised. He was the son of Mr. G. T. W. Mugliston, surgeon, formerly of Pinner. After qualifying Mr. Mugliston held the appointment of house surgeon at the London Hospital. He was afterwards called to the Bar and joined the South-Eastern Circuit. He then went to Tasmania and entered into the political life of the island, being a prominent member of the Legislative Assembly. Mr. Mugliston later resided in Australia, and subsequently came to Brent Knoll, where he was highly esteemed.

July 14th.

IRELAND.

Tuberculosis in Ireland.

ALTHOUGH the death-rate from tuberculosis in Ireland is steadily falling it still remains lamentably high. In the year 1912, according to the reports of the Registrar-General for Ireland, 9437 deaths were registered as due to tuberculosis, being 2·15 per 1000 of the population. The whole question is critically considered by Sir John Moore in two papers recently published.[1] He points out that although Ireland was the first division of the United Kingdom to apply the principle of notification to tuberculosis by means of Act of Parliament, that notification was permissive and not compulsory. The Tuberculosis Prevention (Ireland) Act of 1908 allows any urban or rural sanitary authority to adopt notification subject to the approval of the county council. Ireland is divided into 311 districts for public health and local government purposes, and of these up to March 1st, 1914, only 55 have adopted the principle of notification—viz., three county boroughs, 20 urban districts, and 32 rural districts. An attempt was made in 1912 to render notification compulsory through the medium of an amending Bill rendered necessary to facilitate the treatment of insured persons under the National Insurance Act of 1911. The compulsory notification clauses were strongly opposed and had to be deleted. The Irish Local Government Board, commenting on this, observed: "It is much to be regretted that compulsory notification had to be omitted, as it leaves this country (Ireland) in the unfortunate position of being the only portion of the United Kingdom where it is not in force, although the disease is more prevalent in Ireland and consequently is more urgently needed." Sir John Moore shows that even in some districts where notification has been adopted, the notifications fall far below the recorded number of deaths; he concludes, therefore, that many cases of pulmonary tuberculosis are not notified at all in the largest cities of Ireland. He urges very strongly that for the crusade against tuberculosis in Ireland to be successful the following measures should be carried out. Notification of all forms of the disease should be made compulsory in all parts of the country. Whole-time county medical officers of health should be appointed, independent of local influences and responsible only to the Irish Local Government Board. The system of district nurses should be extended, and trained female sanitary inspectors should be appointed. An effective domiciliary treatment should be arranged for cases which cannot be accommodated in institutions, and instruction as to the rules of life should be widely given. Lastly, he points out the importance of the housing problem. Some statistics which he quotes give point to many of his recommendations. The Registrar-General for Ireland, Sir William Thompson, in his report for 1912, shows that in the Dublin registration area the death-rate from all forms of tuberculosis classified according to social state was as follows: in the professional and independent classes, 0·41 per 1000; among the middle class, 1·92 per 1000; among the artisans and petty shopkeepers, 2·94 per 1000; and among the general service class, 3·16 per 1000. Sir John Moore writes with conviction, and has made out a very strong case for the measures which he recommends. There can be no doubt that if they were effectively carried out the incidence of tuberculosis in Ireland would be greatly lessened.

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[1] Notification of Tuberculosis in Ireland and the Reasons Therefor, Dublin Journal of Medical Science, May, 1914. Tuberculosis in Ireland and the Crusade against it, Interstate Medical Journal, vol. xxi., No. 4, 1914.

Irish Medical Committee.

The first meeting of the new Irish Medical Committee was held in the Royal College of Surgeons of Ireland on July 14th. Dr. P. J. Macnamara, of Kilmallock, was appointed chairman for the ensuing year, and Dr. Johnson, of Belfast, vice-chairman. Mr. Gick, secretary of the Irish Medical Association, and Dr. Henessey, organising secretary of the Irish Committee of the British Medical Association, were appointed joint secretaries of the committee. The following subcommittees were appointed: Finance and executive, sanatorium benefit, matters affecting the Poor-law medical service, and hospitals.

Queen's University of Belfast.

The fifth graduation ceremony of the Queen's University of Belfast was held on July 9th, when, in the absence of the Chancellor, the Earl of Shaftesbury, K.C.V.O., the Vice-Chancellor presided, and the various degrees were conferred. At a meeting of members of convocation held on the same day it was decided to nominate a number of gentlemen for election as members of senate (convocation having the power to select eight). The following four members of the medical profession were chosen: Dr. R. W. Leslie, Dr. W. Calwell, Dr. John W. Browne, and Dr. T. S. Kirk.

Rainfall in Belfast for June.

During the past month of June rain—to the amount of 1·52 inches—fell on 16 days in Belfast, making a total of 15·55 inches for the present year. This rainfall for June is distinctly below the average for that month (3·06 for the previous 39 years); indeed, the total amount of rainfall registered for 1914 is only 15·55 inches, the amount for 1913 up to the same time (half a year) being 21·50 inches.

Public Abattoir at Ballymoney.

The committee appointed by the urban counci of Ballymoney to inquire into the question of a public abattoir has sent in a very full report, in which they state that the present condition o matters made it obligatory for the council, as th sanitary authority, to take steps to have a publi abattoir erected in Ballymoney. Consideration o the proposal was adjourned to September.

July 14th.

SCOTLAND.

Royal Visit to the Hospitals of Glasgow.

As I briefly recorded last week, the city c Glasgow, and the hospitals in particular, wer honoured by a visit from the King an Queen, accompanied by their daughter Princes Mary. As Prince of Wales, His Majesty in 190 laid the foundation-stone of the new Roya Infirmary, and last week he formally opened th building as the Glasgow Memorial of the Diamon Jubilee of Queen Victoria. Before leaving th infirmary a deputation from the Royal Faculty c Physicians and Surgeons of Glasgow presented a address to the King. After lunch a visit was pai to the new buildings of the Royal Hospital for Sic Children. The chairman of the directors presente the King with a key with which to unlock the doo and declare the building open, and thereafter minute inspection was made of the hospital. Late in the day brief visits were paid to the Wester Infirmary and to the University, where Lord Rose bery, as Chancellor of the University, presented th Principal and several members of the Senate t Their Majesties.

Lister's Operating Theatre.

At a meeting of the Glasgow University Court was announced that the managers of the Roy Infirmary were willing to accede to the request the University Court that they might obtain th materials of the Lister ward and operating theat in the old building of the Royal Infirmary. It intended that the ward and theatre be reco structed at the University as a memorial of Lo Lister's work.

aduation Ceremony at the University of Aberdeen.

The summer graduation at the University of Aber-en took place on July 8th, at the same time as the remony of installing Lord Elgin as Chancellor in ccession to the late Lord Strathcona. Lord Elgin as introduced by Mr. D. M. M. Milligan, and incipal George Adam Smith, the Vice-Chancellor, aid much enthusiasm, administered the oath. In 's address Lord Elgin alluded to his call from Mr. arnegie, the present Rector of the University of berdeen, who was present to take the chairmanship the Carnegie Trust and to the growing success the trust. The Principal and Mrs. George Adam nith entertained the honorary graduates to ncheon, and in the afternoon a garden party as held at Chanonry Lodge, when the members the University had an opportunity of meeting ord and Lady Elgin and the Rector and Mrs. arnegie. In the evening the Chancellor was ntertained to dinner by the University in e Portrait Gallery of Marischal College. There as a large and distinguished company. The rincipal, in submitting the toast of the evening, ated that Lord Elgin was the thirty-eighth hancellor since the foundation of the University nd King's College in 1494. After alluding to the ng and illustrious line of chancellors Principal mith said that few political careers, either in our wn time or at any previous period, had been tested, s Lord Elgin's was, by the emergence of sudden nd terrible crisis of the severest kind in India.

Death of Dr. J. F. Robertson.

The death occurred at Lerwick, on July 10th, of r. John Fordyce Robertson, after a brief illness. hough in somewhat impaired health he was ble to attend to his professional duties up to uly 6th, when he was stricken with pneumonia. Dr. obertson was educated at the Anderson Institute, erwick, and at Edinburgh University, where he as a brilliant student. Very soon after he raduated he started private practice in Lerwick, here he soon became a very popular and busy ractitioner. He held the rank of captain in the .A.M.C.(T.), and gave freely of his scanty leisure to urther the affairs of the local Territorials, by whom, as by the general public, he was held in high steem.

July 14th.

PARIS.

The Social Adaptability of Defectives.

It is often said that the sacrifices made for the education of backward and mentally abnormal children are too often sheer waste, and that the results of this special training are only too commonly deceptive. M. Roubinovitch, who is the chief physician of the hospital school of Bicêtre and of the Vallée foundation, has communicated to the Academy some figures that show the real success which may be attained in a considerable proportion of such children. These are the "educable" children, among whom may be obtained, by rationally directed efforts, a complete adaptation to social life. The clinical history of 14 of these mentally abnormal subjects, affected at the time of their admission with mental debility, simple or complicated with instability or with various perverted instincts, is in this respect very convincing. These defectives, after a stay of from 3 to 12 years in the institutions, show such physical, intellectual, and moral improvement that they may be restored to ordinary life, to which they are perfectly adapted. Of these 14 children, 8 girls are now satisfactory housekeepers, domestics, or washerwomen, while 6 boys are good carpenters or shoemakers. In all, heredity must be accepted as the principal factor in their inferiority, but treatment, as may be seen, is not useless. These useful hospital schools would be much more valuable if they were not encumbered with a considerable proportion of idiots and incurable imbeciles, giving the impression that the expense is out of all proportion with the results to be obtained.

Thyroid Grafting in a Myxœdematous Child.

Dr. Voronoff, of Nice, who reported to the last Congrès de Chirurgie a completely successful case of ovarian grafting, has communicated to the Academy of Medicine the results of thyroid grafting in a child aged 14 years, affected with myxœdema from the age of 8 which followed on scarlet fever. The disease, besides the classic physical signs, was accompanied by a total arrest of intellectual development. The child was feeble, apathetic, and stupid, incapable of attention and of mental work. Dr. Voronoff engrafted in the neck a lobe of the thyroid from a monkey (*Singe papion*), attaching it by a large number of delicate sutures, but without anastomosing the arteries of the gland directly with those of the child, according to Carrel's method. This graft succeeded well, and new vascular connexions were rapidly established between the engrafted tissue and the subject. An interesting point is that, little by little, not only did the physical characters of myxœdema disappear, the obesity diminish, the puffy countenance become oval, the thick lips become thin, and the eye take on a live and alert look, but the intelligence also developed in like manner. The child became attentive and studious, and in six months its intellectual status had become entirely normal. Dr. Voronoff performed this operation at the Clinique Ste. Marguérite of Nice before a considerable number of medical men. He thinks that this method may become general, and that it will provide a mode of treatment in myxœdema more certain and more definitive than the internal administration of thyroid preparations, as hitherto used.

Death of Dr. Duguet.

Dr. Duguet has died at the age of 77 years. He had been professor agrégé at the Faculty of Medicine and subsequently médecin des hôpitaux. At the close of his career he had for a long time occupied the post of head physician of the Hôpital Lariboisière. He was vice-president of the Académie de Médecine, and would have been its president next year. He leaves behind him the memory of a learned clinician, whose researches have covered various parts of internal pathology, particularly that of diseases of the heart.

July 13th.

BERLIN.

Congress of the Medical Societies.

THE Congress of the Deutscher Aerztevereinsbund, held in Munich in connexion with the Leipziger Verband from June 25th to 27th, was especially remarkable from the fact that the subject of club practice, which has played so prominent a part in preceding congresses, was hardly discussed at all, the matter being now regulated by an agreement throughout the empire. One of the principal subjects of discussion concerned a motion brought before the Congress by the Dresden section, that medical coöperation free of charge with so-called charitable institutions ought to be made dependent on the consent of the local medical association. The motion was agreed to with an amendment excepting the Red Cross Society, subject to the condition that members of the Red Cross trained by medical men shall pledge themselves not to settle in practice as unqualified practitioners. In the discussion it was pointed out that certain institutions which required the help of the medical profession free of charge do not expect gratuitous services from other persons. Other subjects dealt with were the unsatisfactory position of midwives, and the courts of honour for medical officers of the reserve, which are exclusively composed of medical officers of the active army without the participation of the reserve medical officers. The struggle against quackery and unqualified practice also came up for discussion, the annual fee for members being raised 1 mark, the additional amount thus collected to be exclusively devoted to this purpose. The social side of the meeting was especially remarkable for a concert given by the medical orchestra of Munich, the performers all wearing operating dress. Dr. von Bary, formerly a medical man and now member of the Royal Opera of Munich, took part in the performance.

Statistics of Berlin University.

At the University of Berlin 8537 students have been matriculated this summer, or 500 more than in the preceding summer. The number of women students has especially increased, being 841, as against only 709. The theological faculty has 511 men and 2 women students, the faculty of laws 1564 men and 17 women, the medical faculty 2130 men and 176 women, and the philosophical faculty 3491 men and 665 women. The report further states that 5545 men and 665 women were Prussian, 897 men and 69 women Germans from other States of the Empire, 203 men and 21 women were Austrian, 502 men and 40 women Russian, 62 men and 4 women came from Roumania. 56 men and 3 women from Switzerland, 35 men and 1 woman from Turkey, 34 men from Greece, 33 men and 5 women from Servia, 30 men from Bulgaria, and 26 men and 5 women from England. From America came 109 men and 20 women, from Asia 80, from Africa 12, whilst Australia was not represented at all this summer.

July 13th.

KING'S COLLEGE HOSPITAL.—The following are the senior scholarship and prize examination results: Senior scholarship, Tanner prize in diseases of women, &c., class prize in diseases of children, D. J. Platts; Jelf medal, Todd prize in clinical medicine, class prizes in medicine, obstetrics, pathology, hygiene, and psychological medicine, E. Watson Williams; class prize in forensic medicine, H. Rivers Pollock.

CENTENARIANS.—The death occurred at Brighton (at the house where he had resided since his retirement from the Bar in 1864) on July 13th of Mr. William Augustus Gordon Hake at the great age of 103 years 3 months. Of late years he had suffered severely from bronchial trouble, but so remarkable was his vitality that he withstood the attacks again and again. An attack, however, at last brought about heart failure and a peaceful end. Mr. Hake was a native of Exeter, having been born at David's Hill on April 5th, 1811. He married in 1837 and was the father of nine children—five sons and four daughters. He was the doyen of the English Bar, having been called to the Middle Temple in 1835.—Mrs. Rebecca Clark died at Wood Green on July 4th at the age of 110, from shock after a severe thunderstorm. The aggregate ages of four of the children of the deceased who attended the funeral was 283 years.

Correspondence.

"Audi alteram partem."

ARTIFICIAL PNEUMOTHORAX: DEFECTS IN THE ACCEPTED TECHNIQUE AND HOW TO REMEDY THEM.

To the Editor of THE LANCET.

SIR,—Those who are interested in the subject of artificial pneumothorax will feel grateful to Dr. W. Parry Morgan for his praiseworthy attempt to improve on existing forms of apparatus (THE LANCET, July 11th), but before we adopt his somewhat complicated machinery we should like to be sure that the difficulties it overcomes really do exist, and also that it introduces no new dangers in place of those it is designed to remove. On neither of these points have I been able to satisfy myself in favour of Dr. Morgan's method.

The main defect which he discovers and sets himself to correct in the apparatus at present used is as follows. He contends that when the needle reaches the pleural cavity at a first operation the amount of gas entering from the manometer tubing would not suffice to produce a respiratory fluctuation were it not that the lung is always wounded by the needle and air flows in from this source. I should be far from denying that where a pointed needle is used this misadventure frequently happens in practice; indeed, Dr. Morgan brings striking testimony to prove that it has done so, even to the establishment of a "spontaneous" (!) pneumothorax, in his own practice. Such a wounding of the lung, unavoidable I think where a pointed needle is used at a first operation, is likely to be of considerable extent where the technique Dr. Morgan regards as usual is commonly followed. He says that if "movements do not appear in the manometer the needle is usually pushed forward and drawn back until they do so." This I should consider a faulty technique with any needle; if it is entered slowly with due regard to the structures it passes through, and with careful attention to the manometer, it should, in my opinion, never be necessary to draw it back save for its final removal. But I am among those who hold that a pointed needle should not be used at all at a first operation, and am in a position to show that where a blunt instrument is used and the lung certainly not wounded, yet ample respiratory movements are obtained in cases where there is a free pleural space. For at first operations I always use a small trocar and cannula; the trocar is removed as soon as the superficial structures are pierced, and the blunt cannula which has also a side opening, is thrust forward alone through the parietal pleura which it pierces with a palpable click. With this instrument it is always clear when the pleura is passed, and it would certainly be impossible to wound the lung in cases where the pleural space is free. Yet with such an instrument the respiratory oscillation whose absence Dr. Morgan deplores is, in my experience always present, and is maintained not only on quie breathing, but even after deep breathing and cough, a test to which I always subject my case before the admission of gas. The following smal series of intrapleural pressures at first operation with this blunt instrument serve to make this clear :—

W. M.	– 8 to – 16 cm. of water.
B. E.	– 8 ,, – 22 ,, ,,
H. B.	– 4 ,, – 12 ,, ,,
A. A. G.	– 9 ,, – 13 ,, ,,
A. S.	– 7 ,, – 15 ,, ,,
A. M.	– 8 ,, – 12 ,, ,,

Only in cases of adherent pleura have I known the gas sucked out and not returned, being lost presumably among the pleural adhesions.

At the end of his paper Dr. Morgan describes his experience in certain cases where, even after the introduction of some gas, he has failed to obtain respiratory fluctuations when he has cut off the gas reservoir from the manometer. This occurrence seems best explained by a blocking of the needle, an accident which readily occurs with fine needles, such as those of the Brauns or Forlanini pattern, but is always avoidable by the use of a needle of arger bore. The blockage is usually with a piece of punched-out skin, and is generally partial in the sense that gas can be passed in but the manometer ails to record normally. Surely the fact that gas had already entered in these cases disposes of Dr. Morgan's apparent contention that it was the need of this which was responsible for the loss of the usual respiratory oscillation.

Certain further strictures which Dr. Morgan makes against the usual apparatus provided with a single water manometer seem to me to be hardly justified by the facts. For pressure with the finger and humb on one or another rubber tube will make his manometer at once record either the intrapleural pressure, the pressure in the gas bottle, or he average pressure of the two combined, and from hese it can just as well be deduced as from Dr. Morgan's two manometers, apart from watching the evel of fluid in the gas bottle, whether the flow of as continues and when it comes to a standstill. As to the risk of fluid being sucked back into the eedle when the gas pressure falls to the level of he intrapleural pressure (which indeed need never e allowed), I would ask whether this accident ever ccurs in practice; it has not done so to me in the eedles with which I am accustomed to operate.

So much for the criticism Dr. Morgan brings gainst the simple water manometer with its ouble attachment to the needle and gas reservoir. he apparatus which Dr. Morgan would substitute or it is highly ingenious and compact, but it seems o me doubtful whether its working is not too complicated to commend it to the practical physician. o determine whether the needle is safely within he pleural cavity we are told to "take the reading f the reservoir manometer, then the reading of he intermediate, and from the second reading ubtract half the difference between the first and he second." But if the needle is partially blocked wo complicated formulæ must be worked out before can be decided where the point of the needle has ot to. I can assure Dr. Morgan from personal xperience that the clinician is not always enough f a mathematician to remember or even to work ut these formulæ at the bedside; he is likely to refer the striking visual proof which the simple ater manometer affords.

One particularly ingenious point of Dr. Morgan's pparatus is the use of flexible tubing attached to movable reservoir to replace one arm of the water anometer; by this means the level can be so djusted that high positive or negative pressures n be recorded on a quite short length of fixed glass tubing. I cannot help fearing, however, that the large volumed reservoir must, by its inertia, greatly damp down those respiratory fluctuations which are so important an index to the position of the point of the needle. Finally, I should have grave doubts myself as to the safety of the continuous flow of oxygen, which is, after all, the main feature of Dr. Morgan's apparatus. Gas embolism is doubtless less easily produced with this gas than with nitrogen, but can it be definitely stated that the risks of gas embolism are negligible so long as oxygen only is used? I do not believe myself that this is so, and it rests, I think, with Dr. Morgan to prove this fact before it can be admitted that his method is free from danger.

I am, Sir, yours faithfully,

Queen Anne-street, W., July 12th, 1914. CLIVE RIVIERE.

THE PLEA FOR IMMEDIATE OPERATION IN APPENDICITIS.

To the Editor of THE LANCET.

SIR,—In your issue of July 11th Mr. W. H. Battle writes :—

> I have said in a former letter that a surgeon can frequently give a correct opinion as to the pathological state of an appendix before its removal in an acute attack of appendicitis from a consideration of the history, symptoms, and local examination of a patient. Mr. Owen denied this.

Permit me to remark that I have made no such denial. For even I, who lay no claim to the gift of clinical or pathological prophecy, sometimes make a correct forecast. So do most surgeons, I suppose. But what I keep hammering at is this, that there are certain cases in which though mortification or perforation of the appendix has taken place, neither the temperature, nor the pulse, nor the aspect, nor the local condition gives warning of impending disaster. Such cases can be saved, if at all, only by immediate operation. And who can forecast them?

As I remarked in my previous letter, I have nothing fresh to say on the important matter which is being discussed in your columns, and I certainly should not have again intervened if I had not been provokingly misquoted.

I am, Sir, yours faithfully,

July 11th, 1914. EDMUND OWEN.

DEFERRED DEATH AFTER TRACHEOTOMY FOR LARYNGEAL DIPHTHERIA.

To the Editor of THE LANCET.

SIR,—In Dr. John Biernacki's interesting article in THE LANCET of July 11th on this subject there is no mention of the bronchoscope in his notes on the related treatment. The use of this instrument in cases of foreign body in the food and air passages has brought about an enormous reduction in the mortality. With some diffidence, owing to my ignorance of conditions in a fever hospital, I note some inconsistency in the paper. It is stated that "recovery is exceptional once obstruction develops to a degree which makes extraction vital," and later, "that extraction should be postponed until ...... the obstruction has become immediately dangerous." Naturally there is a wide difference between an ordinary case of foreign body and of a plug of desiccated mucus in the trachea. There being already a tracheotomy opening it appears that "lower" bronchoscopy need not subject the patient to any more strain than the process so well described by Dr. Biernacki, and that in expert hands it would be safer and more efficient. Naturally under the circumstances the surgeon would require special protection. This, however, presents no insuperable difficulty. It seems that if more than the exceptional cases alluded to are to be saved by clearing the trachea, and possibly the bronchi, the bronchoscope should be used at an earlier stage.—I am, Sir, yours faithfully,

T. JEFFERSON FAULDER.

Harley-street, W., July 13th, 1914.

ULTRAMICROSCOPIC VIRUS.

To the Editor of THE LANCET.

SIR,—In an interesting letter by Dr. J. T. C. Nash, published in THE LANCET of July 4th, it is suggested that very minute individual micro-organisms might escape notice if lying free, but should—theoretically—be easily detected by the microscope when occurring in colonies. To the soundness of Dr. Nash's observation I can fully testify in the case of mumps and of typhus fever. For example, in the case of mumps I have in the last few days found in the fresh urine of five consecutive cases in the stage of fever minute organisms which cannot when lying free be recognised to be organisms by the ordinary 1/12th oil immersion lens. When, however, they occur in clusters an ill-defined mass can be made out, which under a 1·5 mm. apochromatic lens is readily seen to be composed of myriads of well-stained organisms varying between about 0·1μ and 0·3μ in their greatest diameter. (The etiological relationship of these organisms to mumps is now being studied in monkeys.) Similarly in typhus fever, as Dr. W. W. Ingram and I have recently reported, large clusters of minute filter-passing organisms may be seen, especially in the fresh urine and cerebro-spinal fluid, though when lying free the individual organisms are beyond the range of vision unless a specially high objective be employed.

The difficulty of recognition of individual organisms of the small size described is greatly increased if they are embedded in the highly albuminous matrix of a blood film, but is reduced to a minimum in the case of cerebro-spinal fluid and of urine. I am, Sir, yours faithfully,

The Lister Institute, July 8th, 1914. E. C. HORT.

THE CHILDREN'S COUNTRY HOLIDAY MOVEMENT AND INFECTIOUS DISEASE.

To the Editor of THE LANCET.

SIR,—May I ask you to find space for a few comments on the circular on "Children's Country Holidays," issued by the Local Government Board, and referred to in THE LANCET of July 4th? The Board draws attention to the allegation that from time to time infectious disease has been introduced or spread in country areas, and that overcrowding in country cottages has also been caused by the boarding out of town children during holiday time.

The Children's Country Holidays Fund, which sent over 45,000 London children into the country for a fortnight last summer, and since its establishment by Canon Barnett 30 years ago has provided holidays for more than 1,000,000 children, has for many years given close attention to the points mentioned in the circular. As the fund draws support from such a wide circle of sympathisers, I am sure your readers will be interested to know what regulations are laid down to avoid the dangers suggested.

1. To prevent any risk of sending children to cottages where infection or overcrowding might be possible, the Children's Country Holidays Fund allows no centre to be used unless a lady or gentleman resident in the place has undertaken supervision, and children are only sent to cottages which have been inspected by these honorary "visitors." The latter also see that the definite restrictions as to numbers accommodated in each cottage are observed, and visit the children during their stay so that no breach of the regulations may pass unnoticed.

2. The fund enjoys the coöperation of the London County Council, whose nurses inspect all the children on the score of health and cleanliness before they go away, and report three times on each child before the holiday is given.

3. Honorary assistants of the fund visit the home of every child at least once before the holidays, and in case of any suspicion of illness in the house or immediate neighbourhood a doctor's opinion is obtained. Before the children leave London their parents are required to see that they take with them a supply of clean clothes.

4. A special fund is set apart for medical assistance when required at the country centres, and this fund is drawn upon up to a specified amount in case of need for medical advice, special food, or hospital charges.

Seeing that the Children's Country Holidays Fund has been at great pains to minimise any risks attendant on its work, I should be glad if you would put this brief statement before your readers. I am, Sir, yours faithfully,

F. MORRIS,
Chairman of Executive Committee.

The Children's Country Holidays Fund, 18, Buckingham-street, Strand, W.C., July 13th, 1914.

THE WORKING OF THE NATIONAL INSURANCE ACT IN GREAT YARMOUTH.

To the Editor of THE LANCET.

SIR,—An article on Medical Practice under the Insurance Act in Great Yarmouth which appeared in your columns last month and was copied by the *Yarmouth Independent* has recently come to our notice.

As it may have given very erroneous impressions we beg leave to point out, first, that there is no evidence but that of hearsay (repeated for the last six or seven years at least) that the local Medical Institute was on the eve of collapse; second, that the National Insurance Act has not given it a new lease of life. Quite the contrary. It is true that it receives more for the insured persons it has retained, but many have left it. Further, as pointed out *ad nauseam* in the medical press, the pledge taken by the medical practitioners prior to the passing of the Act involved points on which the British Medical Association changed its ground radically, breaking its side of the pledge. Being thus left an isolated community after Norwich, Lowestoft, and the surrounding country had given in, the Great Yarmouth medicos held several meetings at which the desirability of all acting together was frequently insisted on and generally accepted. At the last of these meetings the question was put whether a panel should be formed or not. The majority voted "Aye" and expected the coöperation of their colleagues who voted "Nay"; they, however, left the meeting, entirely to the surprise of the majority. It is only fair to say that two opponents put their names on the panel next day and a third offered to do so if we required more names. Subsequently the members of the panel formed a committee to look after their own affairs. They knew it was not a statutory committee then, and never pretended that it was one. The Local Medical Committee was formed later in due order.

Your correspondent's charge against the members of the Great Yarmouth panel, that they pressed for allocation when contracting out was on the *tapis*, is simply untrue. It was evident from the first that contracting out was not to be allowed except in a few special cases, and allocation was not mooted till several months had elapsed. We were then asked to suggest plans for this step, and had to give our views. We cannot see that the active members of the hospital staff have anything to complain of; they chose their own position and had a special warning of what was coming in a letter which appeared in THE LANCET of June 10th, 1911, p. 1606, a printed copy of which was sent to each of them. Of course, there is room for improvement in the working of the Act and much to be done in reuniting the members of the profession, but we regret to be unable to see any tendency to either of these desiderata in your article. We request that you will kindly give our letter the same publicity that it has received, and remain, Sir,

Yours faithfully,

HENRY BLAKE,
Chairman, Panel Committee.

J. IVOR SANKEY,
Honorary Secretary, Great Yarmouth Division, British Medical Association.

VALENTINE H. BLAKE,
Honorary Secretary, Local Medical Committee.

Great Yarmouth, July 13th, 1914.

*** Our Commissioner's informants will not acquiesce in the charges of untruth or of error brought in this letter.—ED. L.

THE NATIONAL MEDICAL UNION.

To the Editor of THE LANCET.

SIR,—Mr. W. L. W. Marshall writing about the National Medical Union in THE LANCET of July 11th says "support may reasonably be expected from the consultant branches of the profession."

May I point out that the National Medical Union is to a very great extent a general practitioners' movement. It depends upon the support of the practitioner who is not on the panel. As numbers of new members have recently joined, and many are joining, it will become a power in the land, representing practitioners who will have nothing to do with the medical service under the present arrangements of the Insurance Acts. But consultants look for patients from panel men as well as from non-panel men.

If consultants learn that the National Medical Union has some backbone in it, and is linking up and giving power and influence to the non-panel practitioners, they will soon support it. It will be a very independent consultant who will ignore his opportunities for fees. There will be more guineas from non-panel doctors' patients than from those doctors who have to resort to the panel. The sick members of the public are seeing to that, and members of the National Medical Union know it.

I am, Sir, yours faithfully,

Hove, July 13th, 1914. THOMAS JOHNSTON.

ISOLATION OF DIPHTHERIA CASES.

To the Editor of THE LANCET.

SIR,—Dr. E. H. Snell did good service at the recent Sanitary Congress at Blackpool when he called attention to the futility of hospital isolation. I have for many years past in my annual and special reports fought against sending this class of patient to hospital. After 27 years the hopelessness of making any advance in dealing either with scarlet fever or diphtheria becomes more apparent. In some places a sanitary authority must contend with Socialism, so-called, in others feudalism, in others clericalism, and in others all three dispensations combined. The struggle for power in each case predominates, and each faction assumes that its knowledge extends to the sphere of infective disorders and that sanitary authorities are merely the servants of the dominant faction. At the present moment the knowledge claimed about germs is prodigious and very disastrous. Last year there were 130,026 cases of scarlet fever notified in England and Wales, against 107,417 in 1912 and 104,617 in 1911, and there were 50,850 notifications of diphtheria, against 44,687 in 1912 and 47,747 in 1911. The tightening up of official rules and regulations is obviously of no avail and never will be. Disease cannot lend itself to official methods, and refuses to be strangled with official red tape. Both diseases are caused by a local infection, and it appears reasonable to suppose that attention to the toilet of the throat and the disinfection of what comes from that region and its neighbourhood is of the utmost importance. Isolation, when these points are attended to, is a simple matter, and in country districts certainly can more often than not be carried out with sufficient completeness. At the present moment in an outlying part of my district two cases of scarlet fever are being isolated in a cottage without anything dreadful occurring; about one mile away there is a second case which developed five days after the return of another patient from hospital who was sent away only because the father worked in cowsheds

In the case of both scarlet fever and diphtheria there is a continual reinfection of patients whilst in hospital, without the symptoms of the disease, from which they are protected by the original attack. The agents of disease return with the patient, in the throat, either in some degree of attenuation or without any. A transference to a suitable soil is all that is required to restore the full vigour of disease production.

As these are my views, it follows that in my opinion responsibility should rest with medical practitioners who are in charge of the patients, and that that responsibility should not be removed from them. One of the great evils resulting from the present scheme under which National Insurance is worked is, that the practitioners who are in charge of the insured persons have in too many instances more patients on their lists than time in which to treat them properly. This is not, however, a matter for which there is no remedy.

I am, Sir, yours faithfully,

July 13th, 1914. LOVELL DRAGE.

HELIOTHERAPY IN SURGICAL TUBERCULOSIS.

To the Editor of THE LANCET.

SIR,—In THE LANCET of July 11th there appears an annotation on this subject. In it the writer remarks that "in this country a beginning of this method of treatment has scarcely been made."

Heliotherapeutic measures have, however, been employed at the Alton Cripples' Hospital almost since it was opened in 1908, and have always been regarded as an important adjuvant to the more generally recognised methods of conservative treatment of surgical tuberculosis. With increasing experience the value of insolation has become more thoroughly appreciated, and on any sunny weekday a couple of hundred children may at any time be seen receiving carefully graduated treatment in the sunlight. Heliotherapy is undoubtedly of great value in treatment, but its application must be gradually undertaken and requires considerable care. No material benefit appears to be received until pigmentation has been established, and it is interesting to note that in certain patients pigmentation cannot be obtained. Some cases of a pronounced cachectic type resist exposure and will not pigment. In these there is usually abundant evidence of marked tuberculous toxæmia.

Exposure of these patients to sunlight, either natural or artificial, has no beneficial effect whatever, and, indeed, may cause the patient considerable discomfort unless most carefully regulated. In some of these the power to pigment is subsequently acquired, and this pigmentary capacity is not infrequently synchronous with abscess formation and enhanced if the abscess formed is treated by aspiration with or without the injection of modifying fluids. Progress towards recovery is then usually hastened and the complete absorption of the abscess facilitated.

Red-haired patients frequently present great difficulties in treatment. In these the skin reddens and blisters unless great care be taken, and freckles are abundantly deposited, but the desired bronzing is exceedingly difficult to obtain. In the majority of cases, however, pigmentation is produced with comparative ease, and coincident with its establishment there is marked improvement. In no cases of tuberculous arthritis is the improvement more striking than where sepsis complicates the condition, and sinuses, which appear to resist all other methods of treatment, sometimes dry up with remarkable rapidity, leaving supple, non-keloidal, and less unsightly scars. The value of pure, dry air in assisting to obtain these results has, in my opinion, hardly been sufficiently recognised. The functional results which follow insolation of tuberculous joints are often extremely satisfactory, and cases of tuberculous peritonitis and adenitis often derive very considerable benefit. On cloudy days, at Alton, heliotherapeutic treatment is continued artificially with what appears to be the happiest results.

Heliotherapy is an adjuvant to treatment, and as an aid to treatment is of the greatest value, but the indications for its employment and its limitations should be very clearly recognised. It should not displace but should supplement those other well-recognised and valuable methods of treatment summed up by the term "conservative" to which, indeed, it forms an addition of the highest value.

I am, Sir, yours faithfully,

Harley-street, W., July 11th, 1914. H. J. GAUVAIN.

LOCAL ANÆSTHESIA.

To the Editor of THE LANCET.

SIR,—I must thank your reviewer for drawing attention to an overlooked misprint of a somewhat serious nature in my translation of Dr. Arthur Schlesinger's book on "Local Anæsthesia" in THE LANCET of July 11th. Dr. Schlesinger does not, of course, state that inflammatory processes heighten *in*sensibility but the direct reverse—that they heighten sensibility. The statement as it appears in my text is so obviously contrary to experience that most readers will, I fancy, suspect a misprint or a *lapsus calami.*

As regards the other misprint to which your reviewer calls attention, that of supra- for infra-orbital (not the reverse as your reviewer states), it occurs in the original German. I must, however, plead guilty to having overlooked and failed to correct an obvious slip.

I am, Sir, yours faithfully,

Bovingdon, Herts, July 10th, 1914. F. S. ARNOLD.

*** Dr. Arnold is good natured in his willingness to accept responsibility, as translator, for a slip in the original.—ED. L.

THE NATIONAL INSURANCE ACT.

A STATE INSURANCE BILL.

THE Bill introduced in the House of Commons by Sir Richard Cooper, M.P., for which Lord Willoughby de Broke undertakes the responsibility in the House of Lords, has for its main object the institution of voluntary State-aided insurance as a substitute for compulsory insurance. It appears to be somewhat late in the day so far as securing support from the approval of the Friendly Societies is concerned unless the president of the National Conference of Industrial Approved Societies spoke without authority at the meeting held on July 3rd at Staple Inn. He spoke of a scheme of voluntary national insurance as impracticable and impossible in the present circumstances, and said—

> Although many of the leaders of the great Friendly Societies were strongly opposed to the introduction of a compulsory scheme of National Insurance, and cherished with great affection, and rightly so, the voluntary principle on which their societies were based, they have with one accord during the past few weeks denounced the substitution of a voluntary basis for the compulsory basis of the National Insurance Act, not only as impossible, but as unthinkable.
>
> I have said that the voluntary proposition is dead; but I think I may without exaggeration go a step further and say that it is in that yet more parlous condition attributed by a late Conservative statesman to a certain well-known and much-discussed economic doctrine.

There are many others besides Friendly Society officials who have viewed the National Insurance Act in the past with considerable hostility, but are now working hard to make it useful to the nation, and it is doubtful whether any substantial number of these would be in favour of a voluntary system as preferable for the promotion of the national health and well-being. To medical practitioners the clauses of the Bill relating to the administration of benefits by Friendly Societies and trades unions will be of interest, but it will be some time before any such measure introduced by a private Member will be sufficiently within the scope of practical politics for its provisions to demand criticism in detail.

THE PANEL MEDICO-POLITICAL UNION.

A few weeks ago a meeting, to which a selected number of practitioners on the London panel were invited, was held in one of the rooms at the Queen's Hall for the purpose of forming a medico-political organisation for practitioners undertaking the treatment of insured persons. The meeting referred to an executive committee of 12 members (six representing the north side and six the south side of the Thames) the framing of a constitution and rules, and these were submitted to an assembly of 80 practitioners at the Caxton Hall on July 10th. Before this stage was reached, however, the committee summoned a protest meeting of London panel practitioners to consider the attitude of the

London Insurance Committee in the matter of the unallotted funds. The meeting, said to have been attended by 500 practitioners, passed a resolution calling upon the Insurance Committee to distribute; it also appointed a deputation to wait upon the Commissioners and the Government. The reason why only a section of the panel practitioners were invited to the first meeting is said to be that the funds were not sufficient to enable a circular to be widely distributed. The promoters seem to have overlooked the possibility of calling the attention of the profession to their proposals through the medium of the medical press; THE LANCET, at any rate, has received no official intimation of the various proceedings here related. On July 10th it was decided to call the new organisation the "Panel Medico-Political Union" and to conduct it on trade union principles. Although some doubt appeared to exist in the minds of many of those present, discussion elicited the information that the organisation is not limited to London but is intended to cover the whole country. In view of its basis of election, as representing only the London area, the executive committee undertook to submit itself for re-election at an early date. The subscription was fixed at one guinea a year, membership to be restricted to practitioners on the panel.

CENTRES FOR THE COÖPERATION OF PANEL PRACTITIONERS.

The London Panel Committee has given further consideration to the Budget proposals, especially in regard to the grants to be given towards the establishment of centres for the coöperation of practitioners on the panel. The possibilities of the grants being given to hospitals to encourage them to establish smaller institutions in various localities, or, alternatively, of being allotted to groups of panel practitioners, were discussed, and the committee expressed the view that the centres should provide consulting-rooms for a number of practitioners and accommodation for a trained nurse, an X ray operator, and a clerk; that arrangements should be made for the occasional attendance of consultants; and that the centres should be under the joint control of the Insurance and Panel Committees. The committee decided to wait upon the Insurance Commissioners and the Government to discuss the delay on the part of the London Insurance Committee in distributing the funds accumulated during 1913 in respect of insured persons who have not chosen a doctor. The delicate questions that arise in connexion with decisions as to what is or is not extravagant prescribing has led the Pharmacy Subcommittee to express regret that the question of the remuneration of the practitioner is bound up with the cost of the drugs and appliances he orders for his patient. The subcommittee has come to the conclusion that there is much to be said for a variation in the financial arrangements whereby the practitioners' fund and the drug fund are quite independent. The efforts of the Panel Committee would then be directed towards checking extravagant prescribing, not so much that the remuneration of the practitioner should be increased, but in order that the drug fund might be used to secure the greatest benefit to insured persons.

SHEFFIELD INSURANCE COMMITTEE.

At a recent meeting of the Sheffield Insurance Committee dissatisfaction was expressed at the manner in which, it was alleged, certificates were signed by medical men on the panel for the purpose of patients obtaining sickness benefit. The chairman of the Medical Benefit Subcommittee added to this a complaint as to the illegibility of the certificates given, but the principal allegation was to the effect that certificates were frequently signed bearing the words "I have this day examined," when in fact the patient had not been seen by the medical man on that day or even recently. It was pointed out by medical practitioners upon the committee that to give such certificates did not necessarily involve any culpable intention upon the part of a medical practitioner, but it was evidently felt by many present that the practice was prevalent and should be put a stop to. In comment it may be observed that medical practitioners are bound by the Regulations if they undertake to accept service under the National Insurance Act, and that there is no obligation whatever upon them to act otherwise than in accordance with the letter of those Regulations. The infringement of a Regulation may appear to be justified by the apparent interest of a patient, but if Regulations are irksome it is for the patients who suffer from them to protest and to try to get them altered. It is for their benefit that the Act was passed, they contribute to its finances, and they can make their wishes felt through their societies and through the exercise of the parliamentary vote.

BRISTOL INSURANCE COMMITTEE.

At the last meeting of this committee a resolution was carried in favour of the establishment of medical referees, who shall also act as advisers to the Insurance Committees, a service of trained nurses, facilities for modern methods of diagnosis, and provision for further medical and surgical appliances.

DERBYSHIRE INSURANCE COMMITTEE AND TUBERCULIN TREATMENT.

At a meeting of the Derbyshire Insurance Committee Mr. J. Court expressed his intention of making public the result of inquiries made by him at dispensaries at which the tuberculin treatment was being administered, in order that the expense of the treatment in relation to the benefit derived from it might be seriously considered. Dr. S. Barwise raised a protest on the ground that as medical adviser to the committee he had not been asked to report on the subject, and pointed out that the institutions referred to were not intended for the purpose of tuberculin treatment. Dr. A. Boswell and the chairman of the Sanatorium Subcommittee also urged that the work being done was still in an experimental stage, that progress was being made, and that criticism was premature. Mr. Court, who assured the committee of his intention to make public the result of his investigations, was invited to print it and present it at a future meeting. At the same meeting of the committee a motion was carried declining to support a movement for the appointment of medical referees to be paid by the State. The question was raised by a letter which had been received from the Kent Insurance Committee asking for such support.

SURPLUS FUNDS AT EDINBURGH.

At a meeting of the Insurance Committee of the burgh of Edinburgh it was resolved after discussion that there should be equal distribution of the funds arising from unallotted insured persons among the medical men on the panel. In the course of the discussion of another proposal, which was negatived, that the money should be allocated in inverse ratio to the number of insured persons on the various lists, a councillor who opposed said that it would give an inducement to medical men to go on the panel and to restrict the number of their patients, knowing that they would so get a handsome sum from the yearly distribution of moneys accumulated. This argument seems to be based upon a misconception, apart from any question of the merits of the scheme against which it was advanced. The large sums which have hitherto been accumulated from the cause indicated have been due to the difficulties arising out of the administration of the Act in its early days. There should never be any such large accumulations again. Now that the Act is everywhere in fair working order, it will be the duty of Insurance Committees to see that newly insured persons either select their medical attendants or are promptly allotted to suitable practitioners. This duty is cast upon the committees by statute, and the Commissioners are sure to see that they perform it.

Medical News.

University of Oxford.—The following medical degrees have been conferred :—

D.M.—G. H. Hunt, Christ Church.
B.M.—A. C. Ballance, A. B. Thompson, T. C. Davies, C. W. B. Littlejohn, and G. P. Selby, New College; and E. E. Mather, Exeter.

Examining Board in England by the Royal Colleges of Physicians of London and Surgeons of England.—At the Second Professional Examination in Anatomy and Physiology held on July 2nd, 3rd, 6th, and 8th, 83 candidates presented themselves, of whom 49 were approved and 34 were rejected. The following candidates were approved :—

Esawy Ahmed, London Hospital; Douglas Harris Anthony, St. Mary's Hospital; Philip Ardern Ashcroft, Manchester University; Robert Aspinall-Stivala, Guy's Hospital; Youssef Aziz, Cairo Medical School; Percy Banbury, St. Thomas's Hospital; Noel Arthur Hamilton Barlow, Guy's Hospital; Maurice Charles Breese, King's College and St. Mary's Hospital; John Leycester Dudley Buxton, University College; Henry Hutton Castle, St. Thomas's Hospital; Edwin Alfred Clegg, Middlesex Hospital; Antonio Mario Clement, St. Thomas's Hospital; Geoffrey Francis Cobb, St. Bartholomew's Hospital; Cyril John Chesterfield Cooke, University College; Jean Crétin, St. Bartholomew's Hospital; Cyril Lister Curle, Guy's Hospital; Albert Victor Spurgeon Davies, St. Mary's Hospital; Alfred Beresford Dummere, London Hospital; Spencer Graeme Dunn, St. Bartholomew's Hospital; Frederick Oloff Fehrsen, Philip Edward Francis Frossard, and Aziz Girgis, London Hospital; Constance Hart, M.D. Pennsylvania, London School of Medicine for Women; John Anderson Hill, London Hospital; George Hoffmeister, Middlesex Hospital; Frederick Hunter Hyland, Leeds University; Luis Gregorio Chacin Itriago, M.D. Venezuela, Venezuela University and King's College; Mohammed Kamil, King's College; George Spencer Lajus Kemp, Sheffield University; George Edwin Kidman and Kenneth Fergus McAlpin, Guy's Hospital; Maurice William Holt Miles, St. Thomas's Hospital; Joseph Octave Roger Montocchio, Guy's Hospital; Richard Moser, St. Bartholomew's Hospital; William Watson Newton, Birmingham University; Arthur Leslie Packham, L D.S. Eng., Middlesex Hospital; John Alexander Percival Perera, Ceylon and London Hospital; Arthur Rose-Innes, University College; Ahmad Hussein Samy, St. Bartholomew's Hospital; John Andrew Adamson Prinski Scott and Nirendra Mohan Sen-Gupta, London Hospital; John Percy Reginald Tennekoon, Ceylon Medical College; Ismail Tewfik, Cairo Medical School and Guy's Hospital; Kenneth Robert Traill and Walter Aslatt Turner, Guy's Hospital; Percy Ward, Sheffield University; William Harold White, St. Thomas's Hospital; James Harry Wiseman, Sheffield University; and Alfred Frank Wyatt, London Hospital.

At the quarterly examination in Practical Pharmacy held on July 9th the following candidates were approved :—

Edward Beric Alabaster, Birmingham University; Hussein Amin, Cairo and St. Bartholomew's Hospital; George Kilpatrick Arthur, St. Bartholomew's Hospital; Errington Atkinson, London Hospital; Edgar Richard Batho, St. Mary's Hospital; Joseph Herbert Bailey, London Hospital; Alan Gabriel Bodman, Bristol University; Martin Vincent Boucaud, St. Bartholomew's Hospital; Charles Reginald Cade, Guy's Hospital; Percival Cheal, London Hospital; George Edwin Chissell, Middlesex Hospital; Percival Charles Collyns, St. Bartholomew's Hospital; Allen Robert Crane, London Hospital; Thomas Henry Ronald Davies, University College, Cardiff; Lionel Basil Anjou de Kretser and Edmund Rupert Dermer, Middlesex Hospital; Mohamed Ahmed El Dardiri, St. Bartholomew's and King's College Hospitals; Ahmed Mostafa El-Mishad, Cairo and Charing Cross Hospital; Abdel Hamid El Rakshi, Cairo and St. Bartholomew's Hospital; Tyrrell George Evans, St. Bartholomew's Hospital; Moustafa Fahmy, Cairo and London Hospital; Alfred Foster, St. Bartholomew's Hospital; Abdallah Abd el Rahman Galak, Middlesex Hospital; Edward Francis Gillett, St. Mary's Hospital; Frank Eric Harger, St. Bartholomew's Hospital; Austin George Hewer, Middlesex Hospital; Charles Ewart Hopwood, Manchester University; Eric Llewelyn Ivens, London Hospital; William Anthony Jolliffe, St. Bartholomew's Hospital; Francis Claud Lapage and Guy Neville Lomax, Middlesex Hospital; Albert Victor Lopes, St. Bartholomew's Hospital; James M'Donnell, London Hospital; Bagenal Harvey Mellon, F.R.C.V.S., National University, Dublin; Thomas Sidney Nelson, Oxford University and St. George's Hospital; Thomas Owen, St. Bartholomew's Hospital; Christopher Stanley Parker, Charing Cross and King's College Hospitals; Frank Young Pearson, University College, Cardiff; David John Platts, King's College Hospital; John Wootton Rammell and Charles Reginald Reckitt, London Hospital; John Harris Ekin Sandford, St. Bartholomew's Hospital; John Milnes Smith, Middlesex Hospital; John Masfen Stack, Birmingham University; Frederick Reginald Sturridge, Middlesex Hospital; Clement Price Thomas, University College, Cardiff; Harry Mortimer Wharry, Oxford University and St. Bartholomew's Hospital; Robert Harvey Williams, St. Bartholomew's Hospital; and Shebsell Yahilevitz, London Hospital.

Royal College of Surgeons of England.—At a meeting of Council of the Royal College of Surgeons of England on July 9th diplomas of Member were conferred upon the following two candidates who have now complied with the necessary by-laws :—

John Robert Mitchell Collie, M.D., C.M. Dalhousie, Dalhouse University and University College Hospital; and Refna Mallet, Royal Free Hospital.

Victoria University of Manchester.—At examinations held recently the following candidates were successful :—

Diploma in Public Health.—R. B. Berry, G. D. Dawson, James Ferguson, H. M. Fleming, W. M. MacIlraith, James Ramsbottom, E. A. Ramsden, G. K. Thompson, J. A, Tomb, and A. E. Townley.
Diploma in Psychological Medicine.—R. M. Stewart.

University of Leeds.—The degrees of M.B. and Ch.B. have been conferred on the following :—

J. C. Gillies, H. R. Knowles, W. H. Lonen, H. Shochet (with second-class honours), and C. Wilson (with second-class honours).

The following pass-lists have been posted :—

SECOND M.B., CH.B. EXAMINATION.

Part I., Anatomy and Physiology.—E. W. Drury, E. E. V. Glover, K. Jaidka, and I. Silverstein.
Part II., Pharmacy.—Z. P. Fernandez, F. H. Goss, H. V. Horsfall, C. R. Knowles, and A. L. Telling.

FINAL M.B., CH.B. EXAMINATION.

Part I., Pathology and Bacteriology.—J. J. Digges La Touche, H. Hyman, W. L. Ingham, C. Leake, J. Rosencwige, R. S. Topham, and A. Umanski.
Part II., Forensic Medicine and Public Health.—W. D. Anderton, S. N. Cohen, C. M. Gozney, A. S. Hebblethwaite, H. R. Knowles, H. S. Lockwood, H. W. Whitteron, H. Shochet, J. Wilkinson, and C. Wilson.

L.D.S. EXAMINATION.

First Professional Examination.—A. L. Fraser.
Final Examination (Part I.).—D. B. Clubb and E. A. Rogerson.

The Diploma in Dentistry has been conferred upon J. E. Gill.

University of Aberdeen.—At the graduation ceremony on July 8th the following awards were made :—

Degree of Doctor of Medicine (M.D.).—Alexander Greig Anderson, William James Reid, James Robertson Murray, Alexander Wilson, Douglas Craig, William Brooks Keith, Andrew Mackenzie Ross Sinclair, and Francis Wilson Stuart.
Degrees of Bachelor of Medicine (M.B.) and Bachelor of Surgery (Ch.B.).—Neil Cantlie (second class honours), Alexander George Craib, Fergus Macandrew Davidson, John Dow, David Fettes, John Foubister, Rudolf William Galloway, Andrew Moir Gray, Wilfred Francis Hawkins, Alfred James Ireland, George Robertson Lipp (second class honours), Evan Alexander Mackenzie, David Murdoch Marr, James Morrison, John Forbes William Sandison, Ernest Tawse, Walter Bailey Thomson, William Walker, William Robert Watt, and James Mitchell Whyte.
Diploma in Public Health.—Winniefred Margaret Gray and James Henderson Yule.

The Straits Settlements Gold Medal (for best thesis on a subject dealing with tropical medicine) was awarded to Dr. Alexander Frank Wallace. The John Murray Medal and Scholarship (to the most distinguished graduate (M.B.) of 1914) was awarded to Dr. Alexander Elmslie Campbell.

Queen's University of Belfast : Faculty of Medicine.—At examinations held recently the following candidates were successful :—

FIRST MEDICAL EXAMINATION.

Chemistry and Physics—Herbert Abernethy, Fredk. C. S. Bradbury, Frederick Campbell, Alfred E Gallagher, John Grimson, William Hoey, George D. F. M'Fadden, Finlay S. Mayne, Thomas Montgomery, and Albert V. Morrison.
Physics.—Stanley R. Clarke, John W. C. Colquhoun, Alfred J. May, and John D. Pinkerton.
Zoology and Botany—Herbert Abernethy, Samuel Acheson, John Black, Winnifred W. Boland, Frederick C S. Bradbury, Samuel F. Breakey, James H. Calvert, Helen M. Calwell, Frederick Campbell, Thomas G. Campbell, Thomas I. Candy, John Caruth, Gladys E. Chambers, Brice R. Clarke, Joseph M. Clearkin, Thomas Dickey, Patrick J. Doherty, Samuel E. Duff, Stewart Fullerton, Alfred E. Gallaher, Samuel Hall, Arthur Henry, William Hoey, Mary E. Irwin, Michael G. Kierans, Albert E. Keown, Elizabeth A. K. Law, David Loughbridge, Gilbert L Love, William J. Lytle, Geo. D. F. M'Fadden, John M'Garvey, Daniel J. M'Gurk, Daniel M'Lister, Robert J. M'Neill, Henry F. Macauley, Edward A. Maguire, John A. Martin, Finlay S. Mayne, Mary M. Merrick, William Michael, Thomas Montgomery, Albert V. Morrison, Samuel Owens, Hugh Paul, Henry Poston, Richard B. Quinn, W. W. Rentoul, David A. E. Scott, Louis P. St. J. Story, Percival S. Walker, and Andrew Watson.
Chemistry.—David Cromie and Patrick J. Doherty.
Zoology.—James Craig and David Cromie.
Botany.—J. C. Carron.

SECOND MEDICAL EXAMINATION.

Anatomy and Physiology.—Joseph Adams, Samuel T. Alexander David D. Anderson, Olive M. Anderson, Charles Barton, Annie E. E. Beattie, James Boyd, Gerard J. Crawford, Marion Crawford, William Cupoles, John H. Davison, Dorothy I. Dobbin, Frederick Hopkins, John Lascelles, Daniel J. Loughran, John C. Loughridge, Robert N. B. McCord, Joseph McCormick, William C. McKee, Jeremiah O'Kane, Charles A. W. Ramsay, John E. Rea, Martin H. Turnbull Norman C. L. B. Tweedie, Thomas Wallace, and Cecil J. A. Woodside.

Physiology.—Olga R. I. Love and Peter Macarthur.

THIRD MEDICAL EXAMINATION.

Pathology and Materia Medica.—William L. Agnew, Eileen M. Bell, William Bryars, George Chesney, Alfred C. Dickey, Grace M. English, Mary E. Henry, Mary M. Keirns, Arabella C. Kirker, Arthur L. M'Creary (Pathology only), Nathaniel M'Cullough, Joseph P. M'Ginley, Bernard W M'Kinney, Michael M'Menamin, James C M'Millan, Hugh F. M'Nally, Frederick M'Sorley, Patrick J. M'Sorley, John J. Marner, David Mitchell, Frank P. Montgomery, Elizabeth M. Moore, Margaret S. Purce, William Saunderson, Robert L. Sinclair, Dennis K. Watterson, Donald R. Wheeler, Charles A. Whitfield, and Frederick H. Whyte.

Medical Jurisprudence and Hygiene.—William L. Agnew, George V. Allen, William Bryars, Alfred G. Campbell, George Chesney, Alfred C. Dickey, Samuel J. W. Donald, Grace M. English, Francis Ewart, Mary E. Henry, Louis Jefferson, Mary M. Keirns, Arabella C. Kirker, John M. M'Cormack, Nathaniel M'Cullough, Joseph P. M'Ginley, Bernard W. M'Kinney, Michael M'Menamin, James C. M'Millan, David Mitchell, Elizabeth M. Moore, William Napier, Margaret S. Purce, Robert J. Rea, John Scott, Robert J. Sinclair, Thomas R. S. Thompson, Donald R. Wheeler, Charles A. Whitfield, Frederick H. Whyte, John Wilson (Old Regulations), and James J. Thompson.

At the examination for M.B., B.Ch., and B.A.O. degrees, the following were successful :—

Robert M. Beath (First Class), Herbert T. Chatfield, William M'M' Chesney, John Duffin, Edward C. T. Emerson (Second Class), Archibald Fullerton (Second Class), David Gaston, Margaret Gorman, Thomas Grimson, William S. B. Hay (Second Class), Joseph F. D. Hunter, David Jamison, William J. Lascelles, Beattie Lyons, Campbell M'N. M'Cormack, Robert N. M'Kinstry, Edward U. MacWilliam, Edward A. Mallon, Edward B. C. Mayrs (Second Class), Sinclair Miller (Second Class), James J. Murray, Samuel E. Picken, George R. B. Purce (Second Class), George W. Rea, Elizabeth M. Robb, John S. Savage, Albert F. L. Shields, James Tate, John Warwick, Owen Wilson, William R. E. Wilson, and Peter P. Wright.

The following degrees and diplomas have been conferred :—

M.D.—By Thesis: David Finnegan, Philip Jacob Gaffikin, David M'Cay (gold medal), Samuel M'Clure, William Samuel J. Shaw, and John M'Geagh Williams. By Examination: Bruce A. West (with commendation).

M.Ch.—By Examination: T. S. S. Holmes (gold medal). By Thesis: Frederick Crooks.

Diploma in Public Health.—Marion B. Andrews, Norman C. Graham, William S. Haydock, William J. F. Mayne, and Samuel P. Rea.

TRINITY COLLEGE, DUBLIN: SCHOOL OF PHYSIC.—At examinations held recently the following candidates were successful :—

PRELIMINARY SCIENTIFIC MEDICAL EXAMINATION.

Chemistry and Physics.—A. G. Bewley, R. P. Hemphill, T. M. Bentley, F. Gill, R. M. D. Devereux, P. C. Parr, L. Albertyn, J. F. Stewart, E. E. Rollins, J. W. Scharff, J. Posner, E. B. Edge, W. F. McConnell, J. M. Semple, E. F. Wilson, T. H. R. McKiernan, J. M. Hill, J. H. B. Levis, J. A. Acheson, T. S. McDonald, D. McElwee, J. C. Fouche, J. N. H. Murphy, T. B. H. Tabuteau, J. C. Campbell-Henry, P. C. Cowan, N. Gray, and S. W. Russell.

Botany and Zoology.—R. P. Hemphill, L. Albertyn, J. A. Acheson, R. G. Lewis, E. F. Wilson, Gertrude Rice, W. B. Briggs, S. A. Clark, W. L. Lloyd, W. L. Young, G. H. Davis, J. W. Scharff, S. W. Russell, E. B. Edge, A. H. Thompson, C. W. Parr, H. A Lavelle, R. M. D. Devereux, W. F. McConnell, J. E. McCormick J. H. Coolican, T. Madill, J. F. Stewart, E. F. W. Smith, H. Birney, E. S. E. Mack, E. E. Rollins, I. W. Beatty, A. Blagoff, T. R. Warren, R. N. Nunn, H. J. Wright, G. C Robb, W. Sweetnam, C. D. Shortt, P. Casey, F. W. Godbey, W. A. Shannon, S. J. Laverty, G. R. G. Smyth, and J. D. Watson.

Botany.—J. M. Hill.

INTERMEDIATE MEDICAL EXAMINATION.

Part I.—E. D. McCrea, W. R. Fearon, B. A. McSwiney, A. R. Barlas, A. L. Gregg, R. N. Murray, J R. Duggan, W. P. Elford, W. H. Flinn, S. C. Mitchell, J. J. Beasley, W. P. Lubbe, F. J. Smith, C. P. Chambers, G. W. B. Shaw, P. S. Snell, W. J. McClintock, R. W. Nesbitt, C. L. McDoncgh, A. H. Davidson, F. C. Tucker, M. C. Dippenaar, H. H. Molloy, F. G. Heuston, and J. McClelland.

Part II.—T. J. Lane, S. V. Furlong, S. R. Hill, J. P. Macnamara, E. Parker, F. J. Murphy, J. T. Westby, F. M. Ferguson, F. A. McHugh, B. A. Merrin, J. J. Keatley, R. Gordon, and G. L. Murphy.

FINAL MEDICAL EXAMINATION.

Part I.—H. Daniel, E. D. T. Hayes, J. W. Bigger, R. W. Shegog, G. Joughin, Violet M. Deale. G. O. F. Alley, D. S. Martin, H. Mitchell, W. F. Wilson, A. F. Grimbly, T. Stanton, A. J. Horne, E. J. Hamilton, R. W. Acheson, D. H. Hall, A. L. Wilson, and W. J. Dowling. *Materia Medica and Medical Jurisprudence.*—F. W. O'Connor and T. G. Roche. *Pathology.*—W. B. Walker

Part II.—*Medicine.*—J. N. Armstrong P. W. McKeag, G. H. Wood, F. J. O. King, T. D. Power, H. C. D. Miller, J. C. A. Dowse, C. D. M. Buckley, W. A. Ryan, Dorothy E. Webb, F. A. Roddy, H. R. Ford, T. A. Lawder, W. H. Elliott, W. O. Tobias, Amy F. Nash, J. S. Dockrill and J. H. Fletcher. *Surgery.*—J. C. A. Dowse, E. E. Lavy, J. C. Ogilvie, J. P. Quinn, T. W. Allen, E. Evans, F. S. Mitchell, C. D. M. Buckley, R. I. Sullivan, A. G. Varian, W. R. L. Waters, J. H. Fletcher, G. H. Wood, F. R. Dougan, N. H. H. Haskins, B. C. O. Sheridan, W. O. Tobias, F. J. O. King, J. N. Armstrong, H. R. Ford, R. A. Anderson, and W. M. Snodgrass. *Midwifery.*—N. M. Boyce, W. E. Tyndall, R. R. G. Atkins, J. S. Robinson, E. Robinson, F. Harris, J. V. Cope, H. S. Collins, Clara B. M. Adderley, W. B. Cathcart, and W. M. Snodgrass.

DENTAL EXAMINATIONS.

Preliminary Scientific.—*Chemistry and Physics.*—H. E. Flavelle and J. H. J. Stuart. *Chemistry.*—L. Wigoder. *Dental Anatomy.*—H. E. Flavelle.

Intermediate.—M. L. Counihan and C. H. Herbert.

DIPLOMA IN PUBLIC HEALTH.

Part I.—J. R. D. Holtby, E. O'Connor, A. V. J. Richardson, H. T. S McClintock, and K. L. Kapur.

Part II.—A. V. J. Richardson, G. H. Culverwell, K. L. Kapur, R. H. C. Lyons, E. O'Connor, and H. T. S. McClintock.

CONVERSAZIONE AT THE ROYAL COLLEGE OF PHYSICIANS OF LONDON.—In connexion with the final meeting of the organising committee of the Seventeenth International Congress of Medicine, held in London last year, a reception was given at the Royal College of Physicians of London on July 7th, when the guests were received by Sir Thomas and Lady Barlow. There was a large attendance. A fine display of books, including early editions, and manuscripts of Harvey and Sydenham, was arranged by Dr. Norman Moore, the Harveian librarian, an interesting collection of plate in the possession of the College was shown, and a loan collection of water-colours, etchings, and drawings was exhibited. In the evening Mr. Stephen Paget showed some kinematograph films illustrating the life of micro-organisms.

ROYAL DENTAL HOSPITAL OF LONDON: SCHOOL OF DENTAL SURGERY.—A series of post-graduate lectures will be given as follows during the months of October and November, 1914, on Tuesdays, at 6 P.M. Oct. 13th: Recent Researches in Dental Histology, by Mr. J. H. Mummery. Oct. 20th: Advantages and Disadvantages of Inserting Dentures immediately after the Multiple Extraction of Teeth, by Mr. H. Lloyd Williams. Oct. 27th: Ultimate Results of the Immediate Regulation of Misplaced Teeth, by Mr. W. H. Dolamore. Nov. 3rd: Gum Facings, by Mr. D. P. Gabell. Nov. 10th: Some Uses of Casting, by Mr. W. W. James. Nov. 17th: The Extraction of Teeth, by Mr. A. L. Whitehouse. The fee for the course is £2 2*s.*, but past and present students of the hospital and internal students of the University of London will be admitted free.

ROYAL MEDICAL BENEVOLENT FUND.—At the last meeting of the committee 24 cases were considered and grants amounting to £185 voted to 22 of the applicants. The following is a summary of the cases relieved :—

M.R.C.S., L.R.C.P., aged 47, who practised at Aysgarth, Yorks, and abroad. After residence abroad health broke down and had to return to England, thoroughly incapacitated and still unable to work. Voted £10 in two instalments.—Widow, aged 65, of L.S.A. Lond. who practised at Ipswich. Five children; three married but unable to help. Only income £8 per annum from life assurance and 10*s.* per week from lodgers. Health not good. Relieved 12 times, £130. Voted £10 in ten instalments.—Daughters, aged 48 and 56, of M.D. Aberd. who practised at Luddenden, Yorks. The eldest is suffering from incurable deafness and the younger one has very indifferent health. Only income £20 each per annum from investment. Relieved once, £10. Voted £10.—Widow, aged 58, of L.R.C.P. & S. Edin. who practised at Balham and died in 1913. Invested small capital in furnishing house to receive paying guests, but has lost money. Voted £12 in 12 instalments.—Widow, aged 39, of L.R.C.P. & S. Irel. who practised in Monmouthshire and New South Wales. Engaged as housekeeper at £15 12*s.* per year, and one of two daughters, aged 10 years, is allowed to live with her. The other child adopted by husband's relatives. Asks for assistance towards the education of daughter. Voted £2 and referred to the Guild.—Widow, aged 64, of M.R.C.S. Eng. who practised in Birmingham, Brighton, and Australia. Lost all capital in consequence of husband's long illness 11 years ago. Only settled income £10 per annum, and too old to obtain work. Voted £12 in 12 instalments.—Widow, aged 53, of L.R.C.P. & S. Edin. who practised at Great Yarmouth. One daughter, who used to dispense for her father, but now helps her mother and does other work. Invested capital in boarding house which has not paid. Voted £12 in 12 instalments.—Widow, aged 46, of L.S.A. Lond. who practised at Leyton. Five daughters, eldest 16 years. No provision made for the widow, and her only income is a small allowance made by her brothers. Voted £2 and referred to the Guild.—M.B. of Aberdeen, aged 55, who practised at Bunbury and in Essex. Suffering from paralysis and quite unable to work. Wife and four daughters, two of whom are at school. Only income £76 per annum from investments and small pension. Voted £5 and referred to the Guild.—Widow, aged 32, of M.R.C.S. Eng. who practised at Keyingham, near Hull. Three children, the eldest 9 years. Only income £12 per annum. Voted £10 in two instalments.—Daughter, aged 43, of L.R C.P. & S. Edin. who practised at Easdon and Whitley Bay. Obtains a small income by nursing, but has been unable to work for 11 weeks owing to sciatica. Relieved nine times, £60. Voted £5.—Daughter, aged 62, of M.R C.S. Eng who practised at Lydney. Means lost through a defaulting trustee, and too old to work. Only income an annuity of £21 from another charity. Relieved seven times, £77. Voted £5.—Widow, aged 56, of M.R C.S. Eng who practised at Enfield. Two daughters, one married and the other an invalid. Income only £60 per annum, and not well enough to work. Relieved three times, £15. Voted £5.—Widow, aged 49, of L.S A. Lond. who practised at Leicester. Earns a little by needlework, but cannot obtain sufficient work. Two daughters, each only earning a little, and two boys, ages 12 and 10, at school. Relieved twice, £22. Voted £12 in 12 instalments.—Widow, aged 55, of L.R.C.P. & S. Glasg. who practised at Heaton-on-Tyne. Six children, two of whom are married and unable to assist, and the others only very little. Has two lodgers. Health very unsatisfactory. Relieved ten times, £106. Voted £12 in 12 instalments.—Daughter, aged 50, of M.R.C.S. Eng. who practised at Box. Lives with delicate sister, who also receives a grant from the Fund. Applicant's health very unsatisfactory. Relieved twice, £24. Voted £12 in 12 instalments.—Widow, aged 68, of M.D. Edin. and M.R.C.S. Eng. who practised at Cambridge. Income £25 per annum from friends and occasionally has a boarder. Relieved four times, £24. Voted £12 in 12 instalments.—Widow, aged 56, of M.R.C.S. Eng. who practised at Wellingborough. No income of own, but acted for a time as housekeeper for relative who gave home and board in return. The home has now been given up, so is stranded. Relieved three times, £32. Voted £12 in 12 instalments.—Widow, aged 34, of M.R.C.S. Eng. who practised at Bow, E. Endeavours to make a living by taking in boarders, but not very successfully, and is in arrears with rent. Has twin boys aged 7½ years. Relieved once, £10. Voted £10.—Special emergency grants of £5 each were also made to two cases, these to be given at the discretion of the honorary secretary for cases.

Contributions may be sent to the honorary treasurer, Dr. Samuel West, 11, Chandos-street, Cavendish-square, London, W.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Infant Mortality in Lancashire.

THERE has been presented to Parliament a report dealing with infant mortality in Lancashire. It has been prepared by the medical officer of the Local Government Board and by Dr. COPEMAN, Dr. MANBY, Dr. FARRAR, and Miss LANE-CLAYPON, M.D.

St. George's Hospital Act.

The Royal assent has been given to the St. George's Hospital Act, which has passed both Houses of Parliament during the present session.

The Midwives (Scotland) Bill.

The Midwives (Scotland) Bill has been read a second time in the House of Commons and sent to a Standing Committee.

Experiments on Living Animals.

On the motion of Mr. ELLIS GRIFFITH the House of Commons has ordered a return showing the number of experiments on living animals during the year 1913, under licences granted under the Act 39 and 40 Vict., c. 77, distinguishing the nature of the experiments.

The Milk and Dairies Bill.

The Standing Committee of the House of Commons which has been considering the Milk and Dairies Bill has concluded its examination of that measure and has ordered it to be reported with amendments to the House.

Forcible Feeding.

A deputation from the Forcible Feeding Protest Committee, consisting of Dr. J. MCINTOSH, Dr. HADEN GUEST, Sir VICTOR HORSLEY, Mr. C. MANSELL MOULLIN, Dr. FRANK MOXON, and Dr. H. SCHÜTZE, waited upon the Home Secretary on July 15th. Mr. MCKENNA intimated that on the ground of the undesirability of the publication of prisoners' names reporters would not be admitted. Neither would he permit the deputation's own shorthand writer to be present, but mentioned that he had an official reporter in attendance. The deputation replied that it could not accept this position, and remarked that the names of the prisoners had already been widely published. The position of the deputation was one of grave public responsibility, and they demanded to be heard in the presence of the press. The deputation then withdrew, and from the Westminster Palace Hotel issued a statement upon which the above relation of the facts is based.

HOUSE OF COMMONS.

THURSDAY, JULY 9TH.

Physical Instruction in Elementary Schools.

Mr. KING asked the President of the Board of Education whether physical exercises were a compulsory part of the curriculum in public elementary schools; and whether he would cease to recognise any school which failed to provide for physical instruction in accordance with the code.—Mr. J. A. PEASE answered: Physical training is one of the subjects mentioned in Article 2 of the Code. The article states, however, that it is not necessary for all the subjects mentioned to be taught in every school or class. The importance which the Board attach to instruction in this subject is shown in the introduction to the syllabus of Physical Exercises. In view of what is said there, I think it would be very difficult to satisfy the Board that at any particular school physical training is not required by the needs of the scholars. I am not aware of any school in which physical training is not now included in the curriculum, though its efficiency and adequacy vary considerably.

Sight Tests in the Mercantile Marine.

Mr. LYNCH asked the President of the Board of Trade how many of those rejected for colour blindness, as indicated in the last report, failed with the lantern but passed the wool test and vice versa, and whether he would consider the advisability of giving this information in the reports in future.—Mr. BURNS said in reply: I assume this question refers to the sight tests used in the mercantile marine. 138 candidates passed the wool test and failed in the lantern test. Of these 24 subsequently passed on appeal, and thus 114 finally failed. 101 candidates passed the wool test and in the lantern test were "referred" for further examination. At the latter examination 76 passed and 25 failed. No candidates failed in the wool test and passed in the lantern test. Three candidates were "referred" in the wool test and passed the lantern test, all three subsequently passing a special examination. The number of candidates who pass, fail, or are "referred" in the lantern or wool tests respectively will be given in the next return as suggested. I should add that "referred" means that the candidate was not definitely passed or rejected, but was referred to London for a special examination.

Mr. LYNCH: Will the right honourable gentleman bring a scientific spirit to bear on this question, so that the wool test may be altogether eliminated?—Mr. BURNS: The honourable gentleman is rather belated in his suggestion. The old form of wool test has been abandoned. I had the pleasure of taking the objectors to and the critics of the wool test down to Shoeburyness, and after a pleasant night on the marshes the objectors were silenced and the critics satisfied.

Housing Department at the Local Government Board.

Answering Mr. LANE-FOX, Mr. HERBERT SAMUEL (President of the Local Government Board) said: There is a special department of the Local Government Board which deals exclusively with housing and town planning questions. The department consists of 23 officials, in addition to a staff of eight inspectors whose time is wholly devoted to this work. The services of the Board's technical officers in the medical, engineering, and architectural staffs are also partly given to housing questions.

Sanitary Conditions in the Mercantile Marine.

Mr. BURNS (President of the Board of Trade), replying to various points that had been raised in Committee of Supply on the Board of Trade estimates, said that the department was justified in the present sight test and meant to adhere to it. Several honourable Members had referred to the sanitary condition of ship accommodation, hospitals on ships, crew space, and similar things. He found that whereas there had been a striking diminution in the death-rate in the Royal Navy and the army and also amongst the industrial population in the years from 1891 to 1911, there had been practically no diminution in the deaths from disease in the mercantile marine. He had appointed a small committee of specialists, with medical officers, statistical experts, and others, to examine the whole subject of the mortality in the mercantile marine, and he hoped soon to have from the committee a practical and suggestive report. He was glad to say that on the subject of hospital accommodation for crews much had been done. In January, 1912, the Board of Trade issued a notice to shipowners that in cargo vessels suitable accommodation should be provided for sick and disabled seamen. Of 150 large vessels built in 1902 there were only 10 with crew hospitals, or 7 per cent.; of 160 built in 1912, 28, or 17 per cent., had crew hospitals provided; of 213 built in 1913, 68, or 32 per cent., were provided with crew hospitals. The Board intended by every means in its power to accelerate the provision of hospitals not only on emigrant ships and large steamers but on a large number of tramp steamers, where the men perhaps required hospital accommodation more than on the great liners.

MONDAY, JULY 13TH.

The Drug Fund.

Mr. GODFREY LOCKER-LAMPSON asked the honourable Member for St. George's-in-the-East, as representing the Insurance Commissioners, whether the Government could now make any announcement in regard to the Insurance Committees which had deficiencies on the drug fund in respect of the year ending January, 1914; what the approximate amount of the deficiency was in each case; and whether the Government proposed to make a grant so that the panel chemists might get paid for the drugs they had supplied on the doctors' orders.—Mr. WEDGWOOD BENN replied: For the reasons already given in my previous replies I am unable to make any general announcement as to the position with regard to any deficiencies for the year 1913. The rest of the question does not accordingly arise.

Sickness Claims under the Insurance Act.

Mr. FRED HALL (Dulwich) asked the Prime Minister whether, in view of the consideration raised by the recently published annual report of the National Health Insurance Commissioners as regarded the financial position of the Approved Societies, the position of deposit contributors, the excessive claims of women, and the bearing of the question of unemployment upon the operation of health insurance generally, he would consider the appointment of a special committee to inquire into the working of the Act as a whole, with a view to formulating comprehensive proposals for its amendment in the light of the experience now available; and whether in the meantime he would postpone any proposal for amendment or limit such proposals to matters of detail which would not admit of delay.—Mr. ASQUITH answered: A special committee appointed last autumn has been examining the whole question of sickness claims under the Insurance Act, and will, I am informed, report shortly. The Chancellor of the Exchequer has already announced that the Government propose to deal with these questions by such means as experience has proved desirable.

TUESDAY, JULY 14TH.

Exemptions from Vaccination.

Mr. NORMAN CRAIG asked the President of the Local Government Board what were the percentages of exemption from vaccination for the years 1906 to 1913 inclusive.—Mr. HERBERT SAMUEL wrote in reply: The figures are as follows:—

Year.	Number of births registered during the year.	Number of exemptions received during the year.	Percentage of statutory exemptions.	Percentage of children ultimately unvaccinated.
1906	935,081	52,391	5·6	16·8
1907	918,042	57,675	6·3	20·4
1908	940,383	162,799	17·3	27·9
1909	914,472	190,689	20·9	32·3
1910	896,962	230,947	25·7	36·3
1911	881,138	248,483	28·2	38·9
1912	872.767	275,929	31·6	42·9
1913	881,480	308,235	35·0	Figures not available.

The Local Government Board receive, in February of each year, returns from all vaccination officers relating to the children born within the previous year but one. These returns show the numbers of such children who have been vaccinated, or found insusceptible of vaccination, or have had small-pox, or have died. The percentages in the last column are based on the numbers of children remaining after the deduction of these classes.

The Work of Sir Ronald Ross.

Mr. COWAN asked the Chancellor of the Exchequer whether he had received a petition to the House from Sir Ronald Ross, K.C.B., F.R.S., asking for compensation for loss in his profession incurred through his long-continued investigations on malaria; whether the petition was based upon the precedents of similar petitions successfully submitted to the House by Dr. Edward Jenner in 1802 and again in 1807, and by George William Manby in 1823; and whether he would recommend Sir Ronald Ross's petition, as required by Standing Order 66, in order to enable it to be laid before the House.—Mr. LLOYD GEORGE replied: I have received the petition referred to, but I have not felt justified in taking the course suggested, which is not in accordance with modern usage.

Notification of Births.

Mr. ALDEN asked the President of the Local Government Board whether, in order to assist the working of the Notification of Births Act, he had any objection to the superintendent registrars handing to the parents who attended to register a birth a notice containing a short reference to the provisions of the Act, and, if he had no such objection, whether he could see his way to issue a circular to the various superintendent registrars calling their attention to the matter.—Mr. HERBERT SAMUEL said in reply: In view of the fact that the notification under the Notification of Births Act has to be given within 36 hours of the birth of a child, while a period of six weeks is allowed for registration, I fear that the advantage of adopting my honourable friend's suggestion would not compensate for the additional trouble caused.

BOOKS, ETC., RECEIVED.

BAILLIÈRE, TINDALL, AND COX, London.

Sleeping Sickness in the Island of Principe. By Surgeon-Captain B. F. Bruto da Costa, Health Officer and Chief of the Sleeping Sickness Commission. Translated by Lieutenant-Colonel J. A. Wyllie, F.R.G.S., Indian Army (retired).

Aids to Forensic Medicine and Toxicology. By W. Murrell, M.D., F.R.C.P. Revised by W. G. Aitchison Robertson, M.D., D.Sc., F.R.C.P. Edin. Eighth edition. Price 2*s*. 6*d*. net.

Aids to Dental Anatomy and Physiology. By Arthur S. Underwood, M.R.C.S., L.D.S. Third edition. Price 2*s*. 6*d*. net.

Manual of Anatomy. Systematic and Practical, including Embryology. By A. M. Buchanan, M.A., M.D., C.M., F.R.F.P.S. Glasg., Professor of Anatomy in Anderson's College, Glasgow. Second impression in the old nomenclature. Price 21*s*. net.

Insanity in Everyday Practice. By E. G. Younger, M.D. Brux., M.R.C.P. Lond., D.P.H., &c., Senior Physician, Finsbury Dispensary. Third edition. Price 3*s*. 6*d*. net.

BALE (JOHN), SONS, AND DANIELSSON, London.

Handbook for Infant Health Workers: In connexion with Schools for Mothers. By R. Manwood H. Walford, M.R.C.S. Eng., L.R.C.P. Lond. Price 1*s*. 6*d*. net.

Historical Sketches of Old Charing: The Hospital and Chapel of St. Mary Roncevall: Eleanor of Castile, Queen of England, and the Monuments Erected in Her Memory. By James Galloway, A.M., M.D., Senior Physician and a Vice-President, Charing Cross Hospital. Price 10*s*. 6*d*. net. This volume is sold for the benefit of Charing Cross Hospital.

BARTH, JOHANN AMBROSIUS, Leipzig.

Handbuch der Tuberkulose in fünf Bänden. Herausgegeben von Professor Dr. L. Brauer, Hamburg-Eppendorf, Allg. Krankenhaus; Dr. G. Schröder, Dirigierender Arzt der neuen Heilanstalt für Lungenkranke zu Schömberg, O.-A. Neuenbürg; Dr. F. Blumenfeld, Arzt für Nasen-, Hals- und Lungenkrankheiten in Wiesbaden. Zweiter Band, mit 15 Abbildungen, 3 Kurven, und 6 schwarzen Tafeln. Preis M.20.

BELL, GEORGE, AND SONS, London.

Eve Repentant, and Other Poems. By Augustus H. Cook, M.B. Lond. Price 2*s*. 6*d*. net.

CHURCHILL, J. AND A., London.

St. Thomas's Hospital Reports. New Series. Edited by Dr. J. J. Perkins and Mr. C. A. Ballance. Vol. XLI. Price 8*s*. 6*d*.

FISCHER, GUSTAV, Jena.

Handbuch der gesamten Therapie. In sieben Bänden. Herausgegeben von Professor Dr. F. Penzoldt, Erlangen, und Dr. R. Stintzing, Jena. Fünfte, umgearbeitete Auflage. Lieferung 17 (Band II., Seite 689–763; Band III., Seite 641–704). Price M.3.50. Lieferung 18 and 19 (Band III., Seite 705–797; Band VI., Seite 161–384). Price M.3.50.

Handbuch der Vergleichenden Physiologie. Herausgegeben von Hans Winterstein (Rostock). 43 Lieferung. Band III., Physiologie des Energiewechsels, Physiologie des Formwechsels. Seite 1599–1760. Price M.5.

Die Erregungsleitung im Wirbeltierherzen. Ein Vortrag nach Vergleichend Physiologischen Untersuchungen. Von Dr. Med. et Phil. Ernst Mangold. Price M.1.20.

Das Herzflimmern, seine Entstehung und Beziehung zu den Herznerven, von Dr. Ludwig Haberlandt. Price M.50.

Handbuch der Immunitätsforschung und experimentellen Therapie. Mit besonderer Berücksichtigung der Technik und Methodik. Herausgegeben von Prof. Dr. R. Kraus und Dr. C. Levaditi. 1 Lieferung. Price M.5.

Die Uebertragungsweise der Rattentrypanosomen. Von Wilhelm Nöller, Tierarzt. Abdruck aus: "Archiv für Protistenkunde, Band XXV., u. 34. Price M.3.

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BAINBRIDGE, WILLIAM, M.B., Ch.B. Edin., D.P.H. Bristol, has been appointed Honorary Assistant Ophthalmic Surgeon to the Hull Royal Infirmary.

BRIDE, T. MILNER, M.D. Vict. Manch., has been appointed Honorary Surgeon to the Manchester Royal Eye Hospital.

BRYAN, C. A. D., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the East Leicester District of the county of Leicester.

CLARKE, R., M.D. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Cambuslang District of the county of Lanark.

CRAIG, F., M.B., B.S. R.U.I., has been appointed Medical Officer of Health to the Londonderry Corporation.

GREEVES, F. J., L.R.C.P. & S. Irel., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the South Blackburn District of the county of Lancaster.

HARRIS, WILFRED, M.D., B.C. Cantab., F.R.C.P. Lond., has been appointed Physician to the Royal Westminster Ophthalmic Hospital.

HOWELL, JAMES B., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer of Health for Hammersmith.

MACGREGOR, ALASTAIR, M.D., C.M. Edin., has been appointed Chief Assistant in the Electrical Department at St. Bartholomew's Hospital.

Mackay, D. Matheson, M.D., C.M. Edin., M.R.C.S., L.R.C.P. Lond., has been appointed Honorary Ophthalmic Surgeon to the Hull Royal Infirmary.

Mullally, G. T., M.B., B.S. Lond., has been appointed Surgical Registrar and Demonstrator of Anatomy at Guy's Hospital Medical School.

Ozanne, R. C., M.B., B.Ch. Oxfd., has been appointed Surgical Registrar and Demonstrator of Anatomy at Guy's Hospital Medical School.

Ryle, J. A., M.B., B.S. Lond., has been appointed Medical Registrar to Guy's Hospital Medical School.

Schlesinger, E. G., M.B., B.S. Lond., has been appointed Surgical Registrar and Demonstrator of Anatomy at Guy's Hospital Medical School.

Spriggs, N. I., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the West Leicester District of the county of Leicester.

Sprott, Barbara, M.B., B.S. Lond., has been appointed Anæsthetist to the Chelsea Hospital for Women.

Stanley, E. Gerald, M.S. Lond., F.R.C.S. Eng., has been appointed Assistant Surgeon to the Dreadnought Hospital, Greenwich.

Todd, A. H., M.B., B.S. Lond., has been appointed Surgical Registrar and Demonstrator of Anatomy at Guy's Hospital Medical School.

Wade, Noel, M.D. Edin., has been appointed Medical Officer of Health to the Risca Urban District Council.

Walker, M. G. L., M.B., Ch.B. Leeds, has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Crosshills District of the county of York.

Williams, E. K., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Billesdon District of the county of Leicester.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

Barrow-in-Furness, North Lonsdale Hospital.—House Surgeon. Salary £150 per annum, with residence, board, and laundry.

Bath, Winsley Sanatorium for Consumption.—Assistant Resident Medical Officer, unmarried. Salary £150 per annum, with board, residence, and laundry.

Bedford County Hospital.—Assistant House Surgeon. Salary £100 per annum, with board, lodging, and laundry.

Bethnal Green Infirmary, Cambridge Heath, E.—Assistant Medical Officer. Salary at rate of £160 per annum, with apartments, board, and washing.

Birkenhead Borough Hospital.—Senior House Surgeon. Salary £120 per annum, with board and laundry.

Birmingham, City Fever Hospital, Little Bromwich.—Assistant Medical Officer. Salary £200 per annum, with board, residence, and laundry.

Birmingham and Midland Eye Hospital, Church-street.—Junior House Surgeon. Salary £100 per annum, with residence, board, &c.

Birmingham, Queen's Hospital.—House Surgeon for six months. Salary at rate of £50 per annum, with board, lodging, and washing.

Birmingham Union.—Fourth Assistant Medical Officer at Dudley-road Infirmary. Salary £140 per annum. Also Assistant Medical Officer at Selly Oak Infirmary and House. Salary £160 per annum. Each with apartments, rations, laundry, and attendance.

Blackburn and East Lancashire Royal Infirmary.—Junior House Surgeon. Salary £100 per annum, with board, residence, &c.

Bolingbroke Hospital, Wandsworth Common, S.W.—House Surgeon for six months. Salary £75 per annum, with board, residence, and laundry.

Bolton Infirmary and Dispensary.—Two Honorary Aural Surgeons.

Bootle Borough Hospital.—Senior and Junior House Surgeons. Salaries £120 and £100 respectively, with residence, board, and laundry.

Bradford City Hospital for Consumptives.—Resident Medical Officer. Salary £200 per annum, with board and residence.

Bradford Royal Infirmary.—House Surgeons, unmarried. Salary £100 per annum, with board, residence, and washing.

Brighton Throat and Ear Hospital, Church-street, Queen's-road.—Non-Resident House Surgeon for six months. Salary at rate of £150 per annum.

Bristol City Asylum.—Second Assistant Medical Officer, unmarried. Salary £200 per annum, with apartments, board, washing, and attendance.

Bury St. Edmunds, West Suffolk General Hospital.—Resident Medical Officer, unmarried. Salary £120 per annum, with board, lodging, and laundry.

Canning Town Women's Settlement Hospital, Balaam-street, Plaistow, E.—Female Senior Resident Medical Officer. Salary £120 per annum, with board and laundry.

Cardiff, King Edward VII.'s Hospital.—Two House Surgeons for six months. Salary at rate of £100 per annum, with board, residence, and laundry.

Cardiff and County Public Health Laboratory.—Bacteriologist. Salary £300 per annum.

City of London Hospital for Diseases of the Chest, Victoria Park, E.—House Physician for six months. Salary at rate of £75 per annum, with board, residence, and washing.

City of Westminster Union Infirmary, Fulham-road, S.W.—Third Assistant Medical Officer. Salary £140 per annum, with board, residence, and washing.

Colchester, Essex County Hospital.—House Surgeon and House Physician. Salary £100 per annum, with board, residence, and washing in each case.

Derby, Derbyshire Royal Infirmary.—Honorary Assistant Physician.

Devonport, Royal Albert Hospital.—House Surgeon, unmarried. Salary £150 per annum, with board and laundry. Also Locum Tenen as House Surgeon. Salary £5 5s. per week, with board and residence.

Evelina Hospital for Sick Children, Southwark, S.E.—House Physician. Salary at rate of £75 per annum, with board, residence, and washing.

Falkland Islands.—Assistant Colonial Surgeon, unmarried. Salary £400 per annum.

Fareham, Hants County Asylum.—Third Assistant Medical Officer, unmarried. Salary £250 per annum, with apartments, board, washing, and attendance.

Glasgow University.—Lecturer in Pharmacology. Salary £350 to £400 per annum. Also Assistant in Department of Physiology. Salary £150 per annum.

Greenwich Union Infirmary and Workhouse.—First Assistant Medical Officer, unmarried. Salary £175 per annum, with apartments, rations, and washing.

Grimsby and District Hospital.—Senior House Surgeon. Also Junior House Surgeon. Salaries £100 and £80 per annum respectively, with board, lodging, attendance, and washing.

Halifax Royal Infirmary.—Third House Surgeon, unmarried. Salary £100 per annum, with residence, board, and washing.

Herefordshire County Council.—Assistant to Medical Officer of Health. Salary £300 per annum.

Hospital for Consumption and Diseases of the Chest, Brompton, S.W.—House Physician for six months. Salary 30 guineas.

Huddersfield, County Borough Education Authority.—Assistant School Medical Officer. Salary £300 per annum.

Hull Royal Infirmary.—Senior House Surgeon, unmarried. Salary £150 per annum, with board and apartments. Also Assistant House Surgeon. Salary at rate of £100 per annum, with board and lodging.

Hull, Victoria Children's Hospital, Park-street.—Female Assistant House Surgeon. Salary £45 per annum, with board and laundry.

Infectious Hospitals Service of Metropolitan Asylums Board.—Assistant Medical Officers, unmarried. Salary £250 per annum, with board, lodging, and washing.

King's College Hospital, Denmark-hill, S.E.—Assistant Obstetric Physician.

Kirkmabreck Parish, Creetown, Kirkcudbrightshire.—Medical Officer. Salary £40 per annum.

Leamington Spa, Warneford, Leamington, and South Warwickshire General Hospital.—House Surgeon and House Physician. Salary £100 and £85 respectively, with board, residence, and laundry.

Leeds Public Dispensary.—Junior Resident Medical Officer. Salary £130 per annum, with board, residence, and laundry.

Leicester, North Evington Poor-law Infirmary. — Senior Assistant Medical Officer and Junior Assistant Medical Officer. Salaries £200 and £150 per annum respectively, with apartments, rations, laundry, and attendance.

Liverpool Dispensaries.—Assistant Surgeon, unmarried. Salary £110 per annum, with board and apartments.

Liverpool School of Tropical Medicine.—Research Assistant at Runcorn Research Laboratory. Salary £150 per annum.

Liverpool Stanley Hospital.—Two House Physicians and Two House Surgeons. Salary £80 per annum each, with board, residence, and laundry.

Liverpool University, Faculty of Medicine.—Johnston Chair of Bio-Chemistry. Salary £600 per annum.

Lowestoft and North Suffolk Hospital.—House Surgeon, unmarried. Salary at rate of £150 per annum, with board, residence, and laundry.

Maidstone, Kent County Asylum.—Fourth Assistant Medical Officer, unmarried. Salary £250 per annum, with quarters, board, attendance, washing, &c.

Maidstone, West Kent General Hospital. — Assistant House Surgeon, unmarried. Salary £80 per annum, with board, lodging, and washing.

Manchester Hospital for Consumption and Diseases of the Throat and Chest.—Assistant Medical Officer and Pathologist. Salary £60 per annum.

Manchester, Hulme Dispensary, Dale-street, Stretford-road.—House Surgeon. Salary £180 per annum, with apartments, attendance, coal, and gas.

Manchester Northern Hospital for Women and Children, Park-place, Cheetham Hill-road.—House Surgeon. Salary £120 per annum, with apartments and board.

Manchester Royal Eye Hospital.—Junior House Surgeon. Salary £80 per annum, with residence, board, and washing.

Manchester Royal Infirmary.—Medical Officer for Out-Patients and Accidents for six months. Salary at rate of £100 per annum, with board and residence.

Natal, Province of.—Medical Officer for Medical Inspection of Schools. Salary £700 per annum.

National Hospital for Diseases of the Heart, Westmoreland-street, W.—Resident Medical Officer for three or nine months. Salary at rate of £80 per annum, with board, residence, and washing.

Newark-upon-Trent Hospital.—Female Resident Medical Officer, unmarried. Salary £100 per annum, with board, lodging, and laundry.

New Hospital for Women, Euston-road.—Female Obstetric Assistant. Board, lodging, and laundry.

Northampton General Hospital.—House Surgeon. Salary £120 per annum, with apartments, board, washing, attendance, &c.

Nottingham, Bagthorpe Institution and Infirmary.—Resident Assistant Medical Officer, unmarried, for six months. Salary at rate of £165 per annum, with apartments, &c.

Nottingham General Dispensary.—Assistant Resident Surgeon, unmarried. Salary £180 per annum, with apartments (not board), attendance, light, and fuel.

Park Hospital for Children, Hither Green, London, S.E.—Temporary Assistant Medical Officer.

Peterborough Infirmary and Dispensary.—House Surgeon, unmarried. Salary at rate of £120 per annum, with residence, board, and laundry.

Preston, County Asylum, Whittingham, Lancs.—Assistant Medical Officer, unmarried. Salary commencing £250, rising to £300 per annum, with board, apartments, &c.

Putney Hospital, Putney Common, S.W.—Resident Medical Officer. Salary £100 per annum, with rooms, board, and laundry.

Queen's Hospital for Children, Hackney-road, Bethnal Green, E.—House Surgeon for six months. Salary £80 per annum, with board, residence, and washing.

Rochdale Infirmary and Dispensary.—Senior House Surgeon, unmarried. Salary £120 per annum, with board, residence, and laundry.

Royal Ear Hospital, Soho.—House Surgeon. Salary £40 per annum.

Royal Hospital for Diseases of the Chest, City-road, E.C.—Resident Medical Officer. Also House Physician. Both for six months. Salaries at rate of £120 and £60 per annum respectively, with board, lodging, and washing.

Royal Naval Medical Service.—Twenty-five Appointments.

Royal Waterloo Hospital for Children and Women, S.E.—Junior Resident Medical Officer for six months. Salary at rate of £70 per annum, with board and washing.

St. Mary's Hospital for Women and Children, Plaistow, E.—Assistant Resident Medical Officer. Salary at rate of £100 per annum, with board, residence, and laundry.

St. Paul's Hospital for Skin and Genito-Urinary Diseases, Red Lion-square, Holborn, W.C.—Assistant Surgeon.

Salford Royal Hospital.—House Surgeon, Junior House Surgeon, and Casualty House Surgeon. Salary at rate of £100 per annum each, with board and residence.

Salford Union Infirmary.—Resident Assistant Medical Officer, unmarried. Salary £150 per annum, with apartments, attendance, and rations.

Scarborough Hospital and Dispensary.—Senior and Junior House Surgeons. Salaries £100 and £80 per annum respectively, with board, residence, &c.

Sheffield, East End Branch of the Children's Hospital (Out-patient Department).—House Surgeon. Salary £120 per annum, with board and residence.

Shrewsbury, Salop Infirmary.—House Physician. Salary at rate of £110 per annum, with board and apartments.

South Shields, Ingham Infirmary and South Shields and Westoe Dispensary.—Junior House Surgeon. Salary £115 per annum, with residence, board, and washing.

Sunderland Royal Infirmary.—House Physician. Salary £120 per annum, with board, residence, and laundry.

Swansea General and Eye Hospital.—Two House Surgeons. Salary £125 per annum, with board, washing, and attendance.

Throat Hospital, Golden-square, W.—Two Resident House Surgeons. Salary £75 per annum, with board, residence, &c.

Truro, Royal Cornwall Infirmary.—House Surgeon, unmarried. Salary £100 per annum, with rooms, board, and washing.

Victoria Hospital for Children, Tite-street, Chelsea, S.W.—House Physician for six months. Salary £40, with board and lodging.

Walsall and District Hospital.—Assistant House Surgeon. Salary £110 per annum, with board, residence, and laundry.

West Bromwich and District Hospital.—Assistant Resident House Surgeon and Anæsthetist, unmarried. Salary £100 per annum, with board, residence, and washing.

West Ham, County Borough of.—Assistant School Medical Officer. Salary £250 per annum.

West Ham and Eastern General Hospital, Stratford.—Senior House Physician and Senior House Surgeon. Salary at rate of £100 per annum, with board, residence, and washing. Also Junior House Physician and Junior House Surgeon. Salary at rate of £75 per annum, with board, residence, and washing.

Winchester, Royal Hampshire County Hospital.—House Physician. Salary £80 per annum.

Wrexham Infirmary.—Resident House Surgeon. Salary £120 per annum, with board, lodging, and washing.

York County Hospital.—House Physician for six months. Salary at rate of £100 per annum, with board, residence, &c.

The Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies for Certifying Surgeons under the Factory and Workshop Acts at East Newcastle, in the county of Northumberland; at Maiden Newton, in the county of Dorset; and at West Newcastle, in the county of Northumberland.

Births, Marriages, and Deaths.

BIRTHS.

Page.—On July 10th, at Old Market-street, Bristol, the wife of Lionel Page, M.R.C.S. Eng., L.R.C.P. Eng., of a son.

Williams.—On July 7th, at Lansdowne-road, Clapham, the wife of Cyril Williams, M.R.C.S., L.R.C.P., of a daughter.

MARRIAGES.

Cole—Bridgman.—On July 4th, at St. Olave's, Finsbury Park, N., John William Edward Cole, M.B., to Caroline Fanny Bridgman, widow of the late Herbert Bridgman, Esq., L.S.A.

De Brent—Daws.—On July 7th, at St. George's Church, Catford, Harold John de Brent., M.R.C.S, L.R.C.P., to Elsie, third daughter of J. E. Daws, Esq., of Bournemouth.

Hicks—James.—On July 8th, at Holy Trinity, South Hampstead, by Rev. Arthur Griffiths, John Athelstan Braxton Hicks, M.D., M.R.C.P., only son of the late A. Braxton Hicks, Barrister-at-law, H.M. Coroner, and Mrs. A. Braxton Hicks, 3A, Perham-road, W., to Adeleine Stephanie, daughter of the late Wm. Lamprey James, Esq., of Exeter, and Mrs. Hall, of Westcliff-on-Sea.

DEATHS.

Ashworth.—On July 14th, at Vigne House, Cliftonville, Margate, Kate, wife of J. Henry Ashworth, M.D. St. And., M.R.C.P. Edin.

Pitt.—On July 10th, at Great Somerford, Chippenham, Charles Wightwick Pitt, M.R.C.S., L.S.A., aged 71.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

HEALTH OF BARBADOS.

A report on the Barbados Blue-book for the year 1912–13, prepared by the Acting Colonial Secretary, Mr. W. L. C. Phillips, has just been issued. It gives the estimated population of the colony as 172,203—71,641 males and 100,562 females. The birth-rate was 36·8 per 1000 as compared with 35·2 the previous year, and the death-rate 41 per 1000 as against 26·3. There was an increase of 2505 in the number of burials, and as there was no outbreak of quarantinable disease, that increase is attributed to the privation consequent on the drought experienced throughout 1912. Illegitimate births numbered 3799, or 59·6 per cent., of the total births. The number of burials of children under one year of age was 2642, a rate of 416 per 1000, as against 263 in 1911 and 268 in 1910. The average maximum temperature for the year 1912 was 84·3° F. and the average minimum 75·7°. The average rainfall for the island for the year from 145 stations was 41·49 inches, as compared with 59·28 inches from 154 stations for the previous year, and with 61·51 inches from an average of 120 stations for the 66 years ended 1912. The rainfall in Barbados is extremely localised as regards distribution over the island. In England it is possible to describe several counties in the daily returns of rainfall. In Barbados, however, there would be notable inaccuracy even if the description was limited to parishes, because the clouds are so capricious that while one planter is looking at a rapidly filling rain gauge with chuckling contentment, a neighbour may be alluding—with a planter's emphasis—to the rainless sunshine which threatens to make his pocket absolutely empty. This characteristic applies as well to those parishes which are flat and without hills as to those which are of an entirely hilly character and to those which contain both flat lands and hills. Cases frequently occur where, in adjoining plantations of a few hundred acres each in the same parish and with the same natural features, one will be abundantly watered and the other remain dry. A recent case may be cited where in three adjoining plantations in St. Peter's parish the precipitation of rain on one was four inches, while in each of the adjoining properties the precipitation was only four-hundreths of one inch. There are no woods or forests in the island which in other places may account for differences occurring in the rainfall, and no explanation of the peculiarity can be found in natural causes. Mention has been made of the drought of 1912. It caused a decrease in the revenue and a decrease in the trade of the colony, as well as a practical failure of the provision crops, with resulting high prices for imported foodstuffs, increasing the cost of living for all classes. It diminished the wage-earnings of the people and swelled the ranks of the recipients of poor relief; it increased the number of criminals, brought many to the verge of starvation, and, most serious of all, it was the undoubted cause of the very high increase in the death-rate. The subject cannot be discussed without referring to the admirable spirit of fortitude and patience displayed by the people in their sufferings.

"ADVT."

To the Editor of THE LANCET

SIR,—A few weeks ago I drew your attention to a medical man's announcement in the Court Circular of a daily newspaper. Here is another example from to-day's paper:—

> Dr. H——, on his return to practice, desires to thank his many friends who kindly inquired after him during his recent illness.

I suggest that the letters "Advt." ought to be added in such cases.

I am, Sir, yours faithfully,
P. R. N.
July 13th, 1914.

FAITH-HEALING COMBINED WITH DRUGS.

An inquest recently held by Mr. R. Kemp at Hounslow on the body of Miss Kate Addison Scott showed, as the coroner observed at its conclusion, the extraordinarily easy way in which members of the public are "taken in by quasi-religious faith-healers." The deceased, who had long suffered from a nervous complaint and was paralysed, had entered the house kept by a man named Orlando Edgar Miller, a person without medical qualifications, who described himself at the inquest as a "teacher, lecturer, and healer." There she paid 5 guineas a week, and received treatment which combined "the laying on of hands and giving the right heart," injections, cascara, and scopolamine.

Dr. H. L. Wilson, who had before attended the deceased, was eventually called in and found her moribund. His evidence was supplemented by that of Dr. L. B. Christian and Dr. W. H. Willcox, but neither of these gentlemen was able to say that death was due to, or had been accelerated by the use of, scopolamine. A verdict was returned ascribing it to natural causes, with a request from the jury to the coroner that he should severely censure Miller for administering a dangerous drug which might have accelerated death.

HEALTH AND SANITATION IN SOUTHERN NIGERIA.

A report on the Blue-book for the Colony and Protectorate of Southern Nigeria (which is now in course of amalgamation with Northern Nigeria under the governorship of Sir F. Lugard) has been received at the Colonial Office and ordered by His Majesty to be presented to both Houses of Parliament. It states, *inter alia*, that the native population is estimated at approximately 7,856,000, divided in the three provinces as follows: Western Province, 2,151,000; Central Province, 2,408,000; Eastern Province, 3,297,000. The European population consists of 760 Government officials and 1080 non-officials. During the year 1912 there were 26 deaths and 32 cases of invaliding among European non-officials, and 9 deaths and 57 invalidings among Government officials. At Lagos Hospital (Western Province) the out-patient department was attended by 5236 persons, (Europeans and natives), whilst the in-patient department treated 2218. Minor and major operations were performed to the number of 353. In the Yaba leper asylum 23 cases were treated and there was one death. In the Central Province the out-patients at Onitshal Hospital numbered 5291 and at Warri Hospital 5489; the in-patients at the former totalled 1090 and at the latter 72. 372 in-patients (of whom 24 died) were treated in the native hospital. In the Eastern Province 2 cases received treatment at the Opobo European Hospital, whilst at the Calabar Hospital 8056 out-patients sought treatment, and there were 132 in-patients (with 5 deaths) treated in the European wards and 1194 (with 70 deaths) in the native wards. An outbreak of dysentery and an epidemic of chicken-pox occurred in Calabar Prison. During the year 1912, owing to the increased interest in the work by all concerned, and more especially to the frequent and thorough visits to most of the European stations and large native towns by sanitary officers, the sanitation of the Colony and Protectorate showed a decided change for the better. The matters of water-supply, disposal of refuse and night-soil, prison ventilation and accommodation, the housing of Europeans, and the mosquito-proofing of houses received special attention. The progress of sanitation has been greatly facilitated by (*a*) the employment of European sanitary inspectors, who have been posted in the more important centres, and an increase in the number of native inspectors; (*b*) the framing or alteration of Ordinances and Orders in Council with regard to public health matters; (*c*) the prosecution of an active anti-mosquito campaign; (*d*) the adoption of sanitary schemes suited to various large centres; (*e*) the erection of new infectious diseases hospitals; (*f*) better provision for fumigation and disinfection of buildings, &c.; (*g*) a more thorough and systematic inspection of the railway; and (*h*) the reclamation of swamps.

URINE-COLLECTING BOTTLES.

U.C.B. writes: I think I remember seeing some description in one of the medical journals of urine-collecting bottles a little time ago. I think a part of the surface of the bottle was ground rough for writing on with pencil. I should be much obliged if any of your readers could give me a reference.

DRAWINGS OF ST. BARTHOLOMEW'S HOSPITAL.

Old St. Bartholomew's men in all parts of the world will be pleased to learn that Mr. Hauslip Fletcher, whose sketches of Guy's and King's College Hospitals have been widely appreciated, has now published through Messrs. W. H. Beynon and Co., St. Alban's Lodge, Cheltenham, a series of plates illustrating their hospital. This consists of eight replicas of wash drawings made recently at St. Bartholomew's Hospital, and the subjects are as follows: King Henry VIII. gateway; bird's-eye view of the Smithfield entrance; the square; the fountain; the medical school buildings; the staircase to the great hall; the Church of St. Bartholomew the Less; and the Church of St. Bartholomew the Great. The last-named, which is an interior view, showing the tomb of Rahere, is charmingly reproduced in colour; the remainder are in monochrome. The size of the plates, including margin, is 17 inches by 13 inches, and the subscription price for artist's signed proofs on Japanese paper is 2 guineas the set. Those specimens which we have seen are very well designed and reproduced, and give a good idea of scenes which are familiar to all who have worked in the hospital. Mr. Hanslip Fletcher is particularly happy in his treatment of such architectural subjects.

THE PORT OF LONDON.

The Port of London Authority, 109, Leadenhall-street, London, E.C., has issued an interesting volume dealing with the past and present history of the Thames and its docks. The letterpress is by Douglas Owen and the illustrations are by Charles J. De Lacy. The book briefly traces the rise of the Port of London from its earliest days, and relates the circumstances which eventually led up to the creation of the Port of London Authority, while it deals fully with the great scheme of improvements now in course of execution.

RARE MEDICAL BOOKS.

We have received from Messrs. Funk and Wagnalls Company, of Salisbury-square, London, E.C., an illustrated catalogue containing many interesting medical items. This firm offers to send a copy gratis to any of our readers who make application for it.

Communications not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

Monday.—4 p.m., Dr. H. C. Semon: Clinique (Skin). 5.15 p.m., Lecture:—Dr. W. C. Topley: Laboratory Aids to Diagnosis in Obscure Febrile Cases.

Tuesday.—4 p.m., Dr. E. B. Smith: Clinique (Medical). 5.15 p.m., Lecture:—Mr. A. Edmunds: Abdominal Pain.

Wednesday.—4 p.m., Mr. E. C. Hughes: Clinique (Surgical). 5.15 p.m., Lecture:—Sir W. Arbuthnot Lane, Bart.: Fractures.

Thursday.—4 p.m., Dr. C. O. Hawthorne: Clinique (Medical). 5.15 p.m., Lecture:—Dr. E. Wynter: Herpes.

Friday.—4 p.m., Mr. E. D. Davis: Clinique (Ear, Nose, and Throat). 5.15 p.m., Lecture:—Dr. W. Wingrave: The Pathology of Warts.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

Monday.—10 a.m., Dr. Simson: Diseases of Women. 10.30 a.m., Medical Registrar: Demonstration of Cases in Wards. 12 noon, Dr. Bernstein: Pathological Demonstration. 2 p.m., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Dr. Pritchard: Bacterial Therapy Department. Mr. B. Harman and Mr. Gibb: Diseases of the Eye. 5 p.m., Lecture:—Dr. Owen: Glycosuria.

Tuesday.—10 a.m., Dr. Robinson: Gynæcological Operations. Dr. Owen: Demonstration of Cases in Wards. 12 noon, Mr. T. Gray: Demonstration of Fractures, &c. 2 p.m., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin. 5 p.m., Lecture:—Dr. Owen: Glycosuria.

Wednesday.—10 a.m., Dr. Saunders: Diseases of Children. Dr Davis: Operations of the Throat, Nose, and Ear. 2 p.m., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations. Dr. Simson: Diseases of Women. Mr. Gibb: Diseases of the Eye. 5 p.m., Lecture:—Dr. Owen: Addison's Disease.

Thursday.—9 a.m., Dr. Bernstein: Bacterial Therapy Department. 2 p.m., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Mr. B. Harmau: Diseases of the Eye.

Friday.—10 a.m., Dr. Simson: Gynæcological Operations. 2 p.m., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

Saturday.—10 a.m., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Eye Operations. 2 p.m., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

Monday.—Clinics:—10.30 a.m., Surgical Out-patient (Mr. E. Gillespie). 2.30 p.m., Medical Out-patient (Dr. T. R. Whipham); Gynæcological (Dr. Banister). 3 p.m., Medical In-patients (Dr. R. M. Leslie).

Tuesday.—2.30 p.m., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. Howell Evans); Nose, Throat, and Ear (Mr. H. D. Gillies). X Ray and Electrical Methods (Dr. Metcalfe). 3.30 p.m., Medical In-patient (Dr. A. J. Whiting).

Wednesday.—Clinics:—2 p.m., Throat Operations (Mr. Gillies). 2.30 p.m., Children's Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. Dorell).

Thursday.—2.30 p.m., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson); X Rays and Electrical Methods (Dr. Metcalfe).

Friday.—2.30 p.m., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld): Surgical (Mr. E. Gillespie); Eye (Mr. R. P. Brooks). 3 p.m., Medical In-patient (Dr. G. P. Chappel).

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, Medical School, City-road, E.C.

Monday.—1.30 p.m., Department for the Prevention of Consumption. 2 p.m., Cardiac Department, Dr. Stott; Out-patient Department, Dr. Phear, Dr. S. Thompson. 3 p.m., Wards, Dr. Phear.

Tuesday.—9 a.m., Laryngological Department, Mr. Mant. 1.30 p.m., Department for the Prevention of Consumption. 2 p.m., Out-patient Department, Dr. M. Leslie, Dr. B. King; Operations, Mr. A. Evans. 3 p.m., Wards, Dr. White. 4 p.m., Wards, Dr. M. Leslie.

WEDNESDAY.—2 P.M , Wards, Dr. A. Davies; Out-patient Department, Dr. Drysdale, Dr. Kellie. 4 P.M., Wards, Dr. Drysdale. 4.30 P.M., Roentgen Ray Department, Dr. Jordan.

THURSDAY.—9.30 A.M., Dental Department, Mr. G. Thomson. 10 A.M., Cardiac Department, Dr. Stott. 1.30 P.M., Department for the Prevention of Consumption. 2 P.M., Out-patient Department, Dr. Phear, Dr. S. Thompson. 4.30 P.M. Laryngological Department, Mr. Mant.

FRIDAY.—1.30 P.M., Department for the Prevention of Consumption. 2 P.M., Wards, Dr. Calvert; Out-patient Department, Dr. M. Leslie, Dr. B. King.

SATURDAY.—10 A.M., Out-patient Department, Dr. Drysdale, Dr. Kellie. 11.30 A.M., Roentgen Ray Department, Dr. Jordan.

TY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.

Course of Demonstrations for Post-Graduates:—

THURSDAY.—4 P.M., Dr. D. Firth: Fibroid Lung.

IE THROAT HOSPITAL, Golden-square, W.

MONDAY.—5.15 P.M., Special Demonstration of Selected Cases.

THURSDAY.—5.15 P.M., Clinical Lecture.

For further particulars of the above Lectures, &c., see Advertisement Pages.

A DIARY OF CONGRESSES.

IE following Congresses, Conferences, and Exhibitions are announced. In 1914:—

May 1st–Nov. 1st (Lyons).—International Town Hygiene Exhibition.
,, 15th–Oct. 15th (Berne).—Swiss National Exhibition.
May–October (London, Shepherd's Bush).—Anglo-American Exposition.
June–July (Groningen).—University of Groningen 300th Anniversary Celebration.
July 15th–20th (Edinburgh).—Congress of the Royal Institute of Public Health.
,, 21st–23rd (Chester).—British Pharmaceutical Conference.
,, 27th–31st (London).—Fifth Annual Session of the Clinical Congress of Surgeons of North America.
,, 28th–31st (Aberdeen).—Eighty-second Annual Meeting of the British Medical Association.
July–September (Australia).—Eighty-fourth Annual Meeting of the British Association for the Advancement of Science. (July 28th to August 3rd at Perth, August 8th to 12th at Adelaide, August 13th to 19th at Melbourne, August 20th to 26th at Sydney, August 27th to Sept. 1st at Brisbane).
Aug. 2nd–10th (Paris).—Tenth Congress of Esperantists.
,, 3rd–8th (London).—Sixth International Dental Congress.
,, 10th–15th (St. Petersburg).—Twelfth International Congress of Ophthalmology.
,, 29th–Sept. 14th (Toronto).—Canadian National Exhibition.
Sept. 7th–12th (Berne).—International Congress for Neurology, Psychiatry, and Psychology.
,, 10th–12th (Fort William and Port Arthur, Ontario).—Fourth Annual Congress of the Canadian Public Health Association.
,, 21st–26th (Victoria, B.C.).—Dominion Exhibition.
,, 21st–26th (Vienna).—Third International Congress on Diseases of Occupation.
,, 30th–Oct. 4th (Brussels). Fourteenth French (de langue française) Congress of Medicine.
Oct. 31st–Nov. 2nd (Berlin).—First Congress of the International Society for Sexual Research.

EDITORIAL NOTICES.

IT is most important that communications relating to the litorial business of THE LANCET should be addressed *clusively* "TO THE EDITOR," and not in any case to any ntleman who may be supposed to be connected with the litorial staff. It is urgently necessary that attention should given to this notice.

is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

ctures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

tters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

e cannot prescribe or recommend practitioners.

cal papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

tters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

e cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. I. of 1914, which was completed with the issue of June 27th, were given in THE LANCET of July 4th.

VOLUMES AND CASES.

VOLUMES for the first half of the year 1914 are now ready. Bound in cloth, gilt lettered, price 16*s.* carriage extra.

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METEOROLOGICAL READINGS.

(*Taken daily at 8.30 a.m. by Steward's Instruments.*)

THE LANCET Office, July 15th, 1914.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
July 9	30·17	S.W.	...	121	75	60	57	62	Cloudy
,, 10	30·20	S.E.	...	123	79	61	62	67	Fine
,, 11	30·09	E.	...	126	83	61	63	64	Overcast
,, 12	30·01	S.W.	0·19	108	75	63	64	65	Cloudy
,, 13	30·10	W.	...	127	79	62	63	64	Overcast
,, 14	30·02	S.W.	...	131	81	64	64	71	Fine
,, 15	29·90	W.	...	113	69	61	59	62	Cloudy

The following magazines, journals, &c., have been received:—Journal of Anatomy and Physiology, Clinical Medicine, Philippine Journal of Science, Child, l'Hygiène de la Viande et du Lait, Quarterly Journal of Experimental Physiology, Archives of Pediatrics, Bristol Medico-Chirurgical Journal, Bulletin of the Johns Hopkins Hospital, American Journal of Medical Sciences, Man, Surgery, Gynecology and Obstetrics, Bio-Chemical Journal, South African Medical Review, St. Paul Medical Journal, Revue de Chirurgie, Revue de Médecine, Journal of Surgery, Indian Medical Record, British Journal of Surgery, Illuminating Engineer, Journal of Obstetrics and Gynæcology of the British Empire.

Communications, Letters, &c., have been received from—

A.—Messrs. Allen and Hanburys, Lond.; A, Lea Bridge-road; Messrs. Armour and Co., Lond.; Dr. J. H. Ashworth, Cliftonville; Dr. F. S. Arnold, Bovingdon; Dr. E. Ash, Lond.; Mr. R. Andrews, Sidmouth; Mr. P. H. Adams, Oxford.

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A Lecture

ON

LOCALISATION OF MOTOR AND SPEECH CENTRES IN DEFINITE AREAS OF THE CORTEX OF THE BRAIN.

Delivered in the Physiological Laboratory of the University of London on June 8th, 1914,

BY EUGENE DUPUY, M.D. PARIS, &c.

GENTLEMEN,—The oldest localisation established is Flourens's "nœud vital," the seat of the principle of life in his language. He showed that a mere prick, and much more the removal of the nib of the calamus scriptorius, induces immediate death by sudden arrest of both respiration and circulation. But many years after Brown-Séquard showed by experiment that the nib of the calamus could be destroyed without inducing cessation of life, and I have collected a number of pathological observations, amongst others one published by Thiroloix and another by Professor Marinesco, which are most interesting, showing also that destruction of the "nœud vital" does not destroy life in man.

Later, in 1861, another localisation established was that of the faculty of articulate speech by Broca in the foot of the left third frontal convolution; he had had precursors, amongst others Bouillaud and Dax, father and son. This localisation was founded on pathological observations, and the three brains which Broca showed are at present —where they have been preserved from the beginning—in the Museum of Pathological Anatomy in Paris; they are to be seen every day. They show that they never have been *opened*—i.e., cut into sections—so that it is impossible to say what other lesions exist, if any, beside those seen on the surface of those brains.

It was in the early "seventies" that Fritszch and Hitzig showed by experiment that there exist in the convolutions of the brains of dogs certain spots which when irritated by means of galvanic currents give rise to definite movements of the limbs in a cross manner—that is, irritation on the right hemisphere provoked movements in the left limbs and *vice versâ*. Hitzig later brought forward some observations of lesions of those parts in man corroborating these experimental results; but it does not appear that much interest was raised on those facts until three years later, when came the first researches of my eminent colleague, Sir David Ferrier, who soon after, in his epoch-making work on the "Functions of the Brain," established both from experimental and pathological data the "doctrine"—for such it has been christened by Charcot—of the localisation of the functions of the brain. Hughlings Jackson, as is well known, had already shown in his studies—which must be recalled as models of clinical observations—the sequence of events from lesions of certain areas of the brain in the hemiplegia and epilepsy following.

CRITICISM OF THE DOCTRINE OF LOCALISATION.

Ever since one may say that the universal teaching has been that every convolution of the brain, and even every definite area of them, contain motor or sensory centres from which start the influence which animates, not only whole limbs on the opposite side of the body, but their different segments, and even the smaller organs, the thumb, for instance. The doctrine comprises the pyramidal tracts with their decussation, through which is effected the crossed action of the hemispheres on the spinal cord; since Mistichelli's time it has been universally adopted by all physicians and physiologists. With regard to loss of articulate speech, the doctrine is that destruction of Broca's convolution alone—it being the seat of the faculty of articulate speech in the left hemisphere for right-handed persons and in the right for left-handed—is the cause of aphasia; and later on Wernicke established that other form or so-called sensory aphasia, having its seat in the left temporal-parietal lobe of the brain also like Broca's aphasia.

I was struck at the very beginning of my medical studies and experimental work with certain facts which did not allow acceptance of the teaching prevalent. I had seen when attending in the post-mortem room—on some rare occasions it is true—Broca's convolution destroyed, and yet the patient had shown no signs of aphasia. I had seen rarely also hemiplegia happening on the same side as the lesion in the brain. Brown-Séquard, with whom I became acquainted at that time, had already been, much to my surprise and gratification, busy for some 15 years before collecting such cases and trying to explain their non-conformity with the accepted teaching by denying the theory of continuous conduction from certain areas of the hemispheres down through the crossed pathways of the pyramids to the spinal cord. He was teaching at that time that lesions of the brain, besides the one we saw, exerted an influence in distant parts which caused the paralysis observed—if I am not mistaken, the same theory which is now introduced by von Monakow under the name of diachisis.

I hold, however, that a doctrine is only true if it comprises in its scope all the facts, and that if one only well-observed fact is found to be contrary then the truth of the doctrine is reversed, to say the least. There are such facts which I believe absolutely vouched for; and, as I will show, the explanations given to make them enter into the classical "frame" are not by any means acceptable. Let me, for instance, state the case of hemiplegia on the same side as the lesion in the brain. There are many on record; one of the earliest, of which the publication seems to have been prompted by Brown-Séquard's teaching, is recorded by Dickinson, of Liverpool.

HEMIPLEGIA WITH BRAIN LESION ON SAME SIDE.

It is the case of a woman who was found on admission into the hospital to be in a state of coma; as there was a smell of alcohol in the expired air the stomach was pumped out. At the first return of consciousness there were vigorous efforts to put aside the instrument, and it was then noticed that in such efforts the *right hand*[1] only was used; on further pinching or pricking the surface of the body the whole of the *right side* responded pretty freely, but the *left* little if at all, only the slightest motion of the finger ends being perceptible. On the following morning, when the doctor saw the patient, she could move the *left arm* and *leg* slightly, though there seemed great reluctance and tardiness in doing so. There was evidently considerable loss of power, with somewhat diminished sensibility and reflex action on that side of the body. The functions of the *right side* seemed apparently perfect. There was complete ptosis of the *left eyelid* with external strabismus, distinctly marked paralysis of the *left* third nerve; the tongue was protruded straight. The patient was rational and able to articulate freely, and could even give some little account of herself when roused and pressed for a reply to questions. Later on the patient was able to walk across the ward, though she dragged the *left leg* a little and the *left arm* hung at her side. She made some more progress towards recovery to the point of being able to change her linen by herself and insisted upon going home. Then she suddenly became stupid and had to be lifted in bed, and soon became comatose. There still remained some slight reflex action and muscular response to pricking or pinching on the surface of the body except on the *left side*, the sensibility of which limbs seemed incomplete, or at any rate there was total loss of motor power in the limbs.

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[1] No italics in Dr. Dickinson's text.

At the necropsy no fracture, contusion, or other evidence of external injury was found. On removal of the calvarium and opening the dura mater, which was healthy and entire, a considerable quantity of extravasated blood, amounting perhaps altogether to about three ounces, was found spread out in a layer on part of the lateral surface of the *left* hemisphere and lying in the cavity of the arachnoid. The excavation was entirely *confined to the left side*, and extended downwards along the Sylvian fissure to the base of the brain, where a small clot the size of an ordinary horse bean was seen pressing upon the trunk of the left third nerve. The blood effused was for the most part dark, clotted, and firm, and presented a somewhat shrunken and honey-combed appearance as if it had existed for a good many days. About the centre, however, of the *left* parietal lobe there was quite a fresh-looking and semi-fluid clot of about an ounce in bulk, but lying more superficially upon what appeared to be the older extravasation and gradually tailing off in quantity down the fissure of Sylvius. No rupture of the arachnoid could at first sight be discovered, nor any special focus from which the hæmorrhage might have sprung. Prolonged search showed that the origin of the hæmorrhage was evidently from the rupture of a small branch of the middle cerebral artery, situated in the *left parietal* fissure. The lateral parietal convolutions of the *left hemisphere* were slightly flattened and their surface deeply stained with blood, where the clot had pressed upon them. Nowhere, however, was there any irruption into the substance nor disturbance of the pia mater and arachnoid except at the bleeding point above indicated. The ventricles opened showed in the right one only a little fluid amounting to about 1½ drachms of clear serum. The whole of the *right hemisphere*, both in its superficial and internal structure, was most minutely and accurately examined and portions of it microscopically, but with the exception of the small quantity of serum in the ventricle no lesion or abnormality whatever was discernible, nor had the effused blood come in contact at the base, or at any point, with the surface of this side of the brain. The crura cerebri, pons Varolii, cerebellum, medulla oblongata, and upper portion of the spinal cord were also very carefully examined, but without revealing anything of an unusual character. It is to be specially noticed that the decussation of the anterior pyramids of the medulla was very well marked in the fresh state, and the parts having been hardened and afterwards examined microscopically exhibited no appreciable deviation in the crossing and arrangements of the fibres from the appearances universally recognised as normal.

CONCLUSIONS FROM ABOVE AND OTHER CASES.

I have given this case in such length with details because of its importance. It does not seem necessary to enlarge on the fact that we have here a case of which the features are absolutely contrary to the teaching universally adopted; and I have chosen that one case out of many others published since on account of the extreme care with which it has been studied by the author, it being the first in which microscopic examination was ever done. Similar observations regarding the importance of the pyramid decussation only have been made by Vulpian, who showed that the destruction of these strands of fibres *does not* prevent the conduction of motor impulses from the brain to the spinal cord.

Other cases have been observed in great number in which it has been often found that the tumour or hæmorrhage had caused œdema in the opposite hemisphere, much stress has therefore been laid on this fact to prove that motor symptoms observed were to be attributed to that œdematous hemisphere only. Not only does this œdematous condition not exist in all the cases observed, but if such were the rational interpretation it would follow that the hemisphere on the same side as the motor symptoms had no function at all, since it is found destroyed without motor symptoms occurring on the opposite side. In the case of Dr. Dickinson, however, it is specially noticed that no such œdematous condition existed, nor can the little serum found in the ventricle be considered sufficient to account for the motor phenomena; there are so many cases on record to the contrary. Therefore the elements of the localisation doctrine as regards the effects of motor impulses from the centres in the hemispheres along continuous strands of fibres crossing in the medulla pyramids are not in accordance with well-ascertained facts, and must be accordingly rejected.

RESULTS OF EXPERIMENTS AND PATHOLOGICAL OBSERVATIONS.

Let me now come to the convolutions of the cortex and report some results of experiments and observations of pathological facts.

First, it is not irrelevant to state that lesions of both hemispheres in almost the same ratio cause paralysis in the opposite side of the body. In the first 600 cases of hemiplegia which I have collected 260 show lesions in the right hemisphere, from which fact we may conclude that there is no difference in the functions of the two halves of the brain. Now it occurs, as is universally known, that in the Rolandic areas centres exist the irritation of which causes definite movements in the limbs on the opposite side, while destruction of that particular area brings about a paresis, or at all events awkwardness in that limb; but after some time this paresis or awkwardness disappears. It is said then that the corresponding or homologous area in the other hemisphere has taken up the lost function because it had been ascertained that such "suppléance" could not be found to exist in the surrounding parts of the destroyed "centre," a fact which went a long way to show the well-defined localisation in a given centre. But other experiments have been done which do not allow such a theory, for Carville and Duret, as I had also shown, found that, say, the right foreleg of the dog had recovered from the paresis or awkwardness following the destruction of its so-called centre, then if the corresponding or homologous centre in the right hemisphere is destroyed no paresis or awkwardness returns in the right foreleg, but in the left foreleg only. Therefore the explanation is not acceptable.

It is not possible to perform such experiments in man, but there are at present a great number of pathological cases which point the same way; for instance, the numerous operations performed by surgeons to remove the cause of convulsions or contractures—cases which show that the so-called motor centres for the arm, for instance, or the hand having been removed, not only the convulsion or contracture disappeared but no paralysis ensued. I have collected 47 well-studied cases of this sort, and the one which is recorded in Sir Victor Horsley's Linacre lecture is certainly most interesting. As the mind is so fashioned that it does not seem ever willing readily to abandon adopted theories, it is supposed only automatic movements are retained after those operations, since those movements are said to have their seat in other or lower centres than the cortex, but that willed or newly acquired movements would always be lost. This instance shows once more how dangerous it is to predict, because I have shown as far back as 1873 that in dogs when the "centres" for the movements of the foreleg and paw have been removed, not only do the leg and paw recover, but tricks can be performed, either tricks learnt before or after the operation. I am happy to find that my distinguished colleague Professor C. S. Sherrington has very lately been able to show that in the chimpanzee the same results are obtained.

It is but reasonable, therefore, to admit that the so-called motor centres are not necessary for the normal functional activity of the parts which they are said to govern, and yet it is not possible to deny that irritation, produced by experimental methods in animals and by disease in man, is followed by movements or paresis in the limbs. It is to an explanation of the mode of production of those that I shall devote the time you are patiently according me. I have collected several more or less well-studied cases in which a very large portion of one hemisphere had been destroyed by disease without paralysis having been noticed in the patient.

LOCALISATION IN REGARD TO LOSS OF SPEECH.

Allow me now to speak of localisation in regard to loss of speech. Up to six years ago I may say that all were in agreement that speech depends upon Broca's convolution in the left hemisphere only for right-handed persons, and in the right hemisphere for left-handed persons. The other form of aphasia, so-called sensory or Wernicke's (Bastian had before called attention to that species), also conforms to this rule, and its seat is placed in the temporo-parietal cortex. It is true that some writers have not altogether from the beginning taken for proved this theory of aphasia, and that even so early as two or three years after Broca's publications Bateman and Charcot, among others, published observations contrary to absolute acceptance of the rule; and let those who wish to learn more on the matter or refresh their learning read Trousseau's immortal lectures not only for a knowledge of the whole subject at the time, but also because Trousseau is the first who clearly saw and taught that aphasia is a disorder of the motor as well as of the intellectual activity of the brain. I have, as I said before, even during my student days found cases that did not confirm Broca's so-called law. In the course of succeeding years I found other cases also contrary, to which I called attention in the lectures that I delivered in different American colleges and societies. In 1891 I read a paper before the Neurological Society in London in which I particularly laid stress on the fact that pathological observations conclusively proved that Broca's convolution had nothing to do with aphasia.

It was only seven years ago, when Professor Pierre Marie, covering the same ground, wrote his paper that created such a sensation among neurologists, that the subject attracted universal attention, presumably because the hour had come. He did not only confine himself to denying or disproving Broca's localisation in the foot of the third left frontal convolution, but he also tried to show that what we call aphasia is composed of different conditions—one the loss of power of pronouncing words, and the other the loss of comprehension and understanding, or sensory aphasia so-called. He endeavoured to establish the seat of the real lesion of aphasia in that part of the temporo-parietal lobe which he defined in a quadrilateral space including Wernicke's convolution and deeper parts. I go with him in denying the function, so-called, of Broca's convolution, since, as I have already said, a great number of cases in which this had been destroyed with no aphasia had been recorded, but I also must disbelieve that the quadrilateral space he mapped out contains the centre of the speech faculty for the same reason: that this has been found destroyed when no aphasia existed. I have collected several such cases. And there are other arguments.

Karl Mendel has lately recorded the case of a woman aged 42 who was certainly right-handed and of whose relatives none were ever left-handed. She became paralysed on the whole of the left side as the result of an embolus from cardiac disease and had complete motor so-called aphasia. The lesion was found at the necropsy to be embolic softening of the right inferior frontal convolution, the right island of Reil, and the right superior temporal convolution. A microscopical examination was made of both hemispheres, and the lesions above described were the only ones found; the left hemisphere was intact, and the pyramidal tracts were normally crossed in the lower part of the medulla. The author concludes that this is a case in which the motor (Broca's) speech centre is placed in the right hemisphere in a right-handed person; but as there had been neither sensory (Wernicke) aphasia nor non-agraphia, the sensory speech centre must be localised in the left hemisphere, seeing that the right superior temporal gyrus was destroyed. If ever there was an example of begging the question I believe this is one. Since the superior temporal convolution in the right side was destroyed and no symptom observed, then that portion of the brain had no function, and why should one be asked to accept this saying after it has been so well recorded that motor aphasia, Broca's, was produced by destruction of the third frontal in this same hemisphere?

I have seen with Luys, who published the record of the case, a very remarkable instance of the immense difficulty, not to say impossibility, of establishing the fact that loss of speech is due to destruction of those so-called centres. In this case there was softening destroying the posterior portion of the third frontal convolution, all the insula convolutions had disappeared, the ascending frontal and parietal at their junction were destroyed; the first temporal was broken down, all the cortex of the insula group and marginal convolutions around were destroyed; the grey substance of the corpus striatum extraventricular nucleus was destroyed, and only vestiges of the intraventricular nucleus probably existed. There was complete motor aphasia, and please mark, 18 months after the stroke the patient all at once, without preparation, began suddenly to speak.

MECHANISM OF SYMPTOMS IN BRAIN LESIONS.

I have made this observation in this place as its lesson will lead me naturally to offer the explanation which I believe is the rational one of the mechanism of symptoms in brain lesions. I do not wish to be understood to say that the cortex has no function, but I wish to state clearly that the area of the seat of definite function, as the doctrine universally adopted will have it, is erroneous. In the light of the examples which I have reported it appears that there are no supplemental centres, but that all the cortex is endowed with the faculty of acting in specific and differentiated manner, and that at most disease or destruction of a given area brings on, say, motor paralysis or aphasia by an inhibitory influence, acting both on other parts of the cortex as well as on the ultimate processes, to the nucleus of the nerves which through the muscles manifest the functions externally. This inhibition would naturally imply alterations of the muscular sense. Brown-Séquard for the last 20 years of his life endeavoured to introduce that theory in science, and I do not know that many followed him. I cannot see any other hypothesis that will account more satisfactorily for all the different manifestations of lesions of the brain; and now let me give a last instance.

A man was found to have in a very short time become amaurotic in one eye. This condition lasted 13 months, and no morbid symptom existed anywhere except a discharging abscess from one tooth in the upper jaw, which, having become a real infirmity, was drawn out. It was found that in its root canal lay a sharp thin spindle of wood from a toothpick which the patient had used in order to cure the tooth which was decayed and which was evidently the cause of the recurrent abscesses. But in a very short time, three days in all after the withdrawal of the tooth, sight had returned completely in the amaurotic eye. Here it is no exaggeration to state that the lesion of the nerve of the tooth induced by inhibition the amaurosis.

Inhibition is not a process of a mysterious nature. It does not consist either, as Claude Bernard taught, in a phenomenon of interference familiar to physicists, nor do I believe it to consist in the action of a synapse, for that implies an organ with a special function, whereas inhibition is a property of the whole nervous system, and one cannot imagine an organ generated by an irritation. But it is most presumably, as Brown-Séquard taught, "une transformation de forces." As I have never seen a lesion made in the brain cortex in any special area not followed by distant and appreciable alteration of tissue elsewhere, it appears to me that by such a process the activity of parts may be altered or inhibited, and one proof thereof consists in the fact that there always elapses a certain length of time before the manifestation of inhibition after irritation and before the restoration of the activity in the part inhibited after the removal of irritation. I do assure you that I have no pretention to have settled for ever the question of the functions of the cortex, but I beg you who have so patiently listened to me to consider, if even with the critical eye, the facts and arguments I have laid before you.

A REDUCTION IN THE VIRULENCE OF TUBERCLE BACILLI STORED IN NORMAL SALINE.

BY LEONARD S. DUDGEON, F.R.C.P. LOND.

(*From the Department of Pathology, St. Thomas's Hospital.*)

IN this preliminary communication certain experiments will be cited which show the effect of storage on the pathogenicity of the tubercle bacillus. It is important at the outset to emphasise that the different results produced refer to the effect of the inoculation of definitely known quantities of the tubercle bacillus. Four strains were employed of the untreated bacillus, while the organism which was used in the experiments included in Group 4 had been previously treated with immune tuberculous serum in the manner about to be indicated. In each instance the cultures of the tubercle bacillus isolated from a human source were obtained from the sputum of cases at the Brompton Hospital Sanatorium at Frimley, for which I am indebted to the kindness of Dr. W. O. Meek, the superintendent. Further observations on this subject will be published at a later date in conjunction with Dr. Meek.

The sputa were passed through guinea-pigs, and the viscera of the infected animals were sown on Dorset's egg medium. When an abundant growth was obtained, which was usually in about three to four weeks, it was carefully scraped off the surface of the medium, partially dried to remove surplus water which had condensed on the bacilli from the medium, and carefully weighed on sterile platinum foil. The masses of bacilli were then shaken with a definite quantity of sterile saline[1] and some glass beads until a uniform emulsion was obtained, which was finally stored in dark brown bottles and kept in a dark cupboard at room temperature so that each sample was kept under identical conditions. Definite quantities were removed at various times, inoculated into animals and the results carefully noted.

The method employed in the preparation of the treated tubercle bacilli has been referred to elsewhere,[2] but it may be mentioned here for convenience that after the bacilli had been scraped off the surface of Dorset's egg medium they were partially dried, weighed, and then shaken in sterile saline to break up the clumps. The saline was pipetted off, and the solid residue was thoroughly mixed in 2 c.c. of sterile saline so that a very turbid suspension of bacilli was obtained to which 2 c.c. of immune rabbit serum were added and the total mixture was incubated at 37° C. for 20 hours and kept at room temperature for 4 hours. The bacilli were then thoroughly washed in sterile saline and finally suspended in that medium and stored in brown bottles as already indicated.

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[1] 0·9 per cent. pure sodium chloride in tap water.

[2] A Contribution to the Study of the Complement-Fixation Reaction in Tuberculous Animals, by L. S. Dudgeon, Journal of Hygiene, vol. xiv., No. 1, 1914.

SERIES I.

Culture of the human bacillus obtained from the tissues of a guinea-pig which developed generalised disease within a period of three weeks from the inoculation of human sputum. When this bacillus was injected intravenously into two rabbits in doses of 3 mgm. and 1·5 mgm. respectively, it was found to have the usual pathogenic properties common to the human bacillus for the rabbit. At the same period two guinea-pigs were infected with similar quantities of the bacillus and developed generalised tuberculosis of an advanced type within a period of four weeks.

Effect of 3½ months' storage.—Two guinea-pigs were inoculated subcutaneously as follows: one animal received 3 mgm. and the other 1·5 mgm. The guinea-pig which received the smaller dose was killed three weeks later, but no lesion of any kind was found at the post-mortem examination, and no tubercle bacilli could be demonstrated in film preparations of the spleen. The second animal, which had received 3 mgm., was killed at the end of five weeks and was found to have developed a local fibro-caseous lesion, caseous inguinal and lumbar glands, and very few tubercles in the spleen, but no tuberculosis elsewhere. Beaded tubercle bacilli were present in every lesion.

Effect of 5 months' storage.—One guinea-pig was injected subcutaneously with 3 mgm. and the other with 1·5 mgm. of the same emulsion of tubercle bacilli. Three weeks later the animal which had received the smaller dose was killed, but there was no lesion of any kind at the post-mortem examination. The spleen of this guinea-pig was emulsified in saline and injected into two others, but without result. The second guinea-pig, which had received 3 mgm., was killed at the end of six weeks, but no lesion of any kind was found. The spleen of this animal was also emulsified in saline and injected into two guinea-pigs, but without result.

Summary.—In the preceding experiments we have investigated the effect of storage on a bacillus isolated from the sputum of a patient who was suffering from pulmonary tuberculosis. It reacted like the human bacillus as regards its pathogenicity for the rabbit, while at the same time it was highly pathogenic for the guinea-pig, but after 3½ months' storage the virulence of this organism for the guinea-pig was considerably reduced, while in 5 months it failed to produce any effect when inoculated *in the doses cited* into such a highly susceptible animal as the guinea-pig. Still further, the spleen of these inoculated animals was proved to be sterile. This point is of importance, as it has already been shown[3] in the case of birds which had been fed daily for periods varying from 6 to 36 weeks with human sputum that, although they did not develop any positive evidence of tuberculosis, yet, in 1 instance out of 8, the spleen of a pigeon which had been fed with sputum for 19 weeks and showed no macroscopical evidence of disease when emulsified in sterile saline and inoculated into a guinea-pig produced typical tuberculosis.

SERIES II.

In this case the tubercle bacillus was obtained from a patient suffering from pulmonary tuberculosis. The only special feature of the organism was its beaded appearance in film preparations. This bacillus was cultivated from the spleen of an infected guinea-pig on Dorset's egg medium, and when 2 mgm. were inoculated intravenously into two rabbits it set up an extreme degree of generalised tuberculosis which terminated fatally within a period of five weeks. At the same period two guinea-pigs were inoculated subcutaneously with 6 mgm. of this bacillus. One animal was killed three weeks later. There was a local abscess, large caseating inguinal and abdominal glands, and tubercles were present in the spleen and liver. The other animal, which was much wasted, was killed six weeks later and showed advanced general tuberculosis. Two guinea-pigs were injected also with 3 mgm. of the bacillus. One animal was killed three weeks later. There was a local abscess and a large caseating inguinal gland. The other animal which was killed within six weeks showed advanced general tuberculosis, with an extreme degree of infection of the liver.

Effect of 1 month's storage.—Two guinea-pigs were inoculated subcutaneously with 6 mgm. of this bacillus. One animal which was killed at the end of three weeks had developed a local fibro-caseous lesion and caseous inguinal glands, but no other lesion was discovered. The second guinea-pig was killed at the end of six weeks. This animal had a local abscess, and the inguinal and iliac glands were found to be caseous, but no tubercles were present in the spleen and liver and the animal was not much wasted.

Effect of 10 weeks' storage.—Two guinea-pigs were inoculated subcutaneously with this bacillus. One animal received 6 mgm. and the other 3 mgm. The animal which received the larger dose was killed at the end of three weeks, but there was no abscess—only a hard mass in the muscles at the seat of inoculation—no glandular enlargement, and no infection of spleen or liver. Tubercle bacilli were present in the local lesion, but *none* were found in the *spleen.* The spleen of this guinea-pig was used for inoculation purposes, as will be mentioned later. The second animal, which was killed at the end of six weeks, had developed a local abscess and tuberculosis of a limited type in the spleen and glands, and a few tubercles were present in the liver. Two guinea-pigs were inoculated with the entire splenic extract of the first animal of the preceding experiment. One pig was killed 17 days later and was found to be normal. The second animal, which was killed in 5½ weeks, showed a local abscess, caseous lumbar and iliac glands, and tubercles in the spleen, but no tubercles in the liver. Films were made from the ground-up liver tissue, but no tubercle bacilli were seen.

Effect of 3 months' and 3 weeks' storage.—One guinea-pig was inoculated subcutaneously with 3 mgm. of the bacillary emulsion and was killed at the end of five weeks. There was no local lesion, but the deep inguinal glands were enlarged and slightly caseous, and tubercle bacilli were demonstrated in the caseous tissue. The iliac glands were enlarged, but not caseous. The spleen was normal, and no other changes of any kind were detected.

Summary.—In these experiments we have been studying a bacillus isolated from human sputum which was highly pathogenic for rabbits in doses of 2 mgm. and was also equally virulent for guinea-pigs. The effect of storage was studied up to a period of 15 weeks, by which time the material was exhausted. If we compare two of the experiments which were made at the beginning of the series and at the end respectively in which guinea-pigs were inoculated with a similar dose of 3 mgm. we find advanced tuberculosis on the one hand as compared with a very limited lesion confined to tuberculosis of the inguinal and iliac glands. Such results compare favourably with the loss of pathogenicity at the end of five months' storage, which has been referred to in detail in the first series of experiments. Another point which may be discussed is the altered type of local change which is produced by the "stored" bacilli. If guinea-pigs are inoculated with bacilli which have been stored for a certain period and are examined within the first three weeks they may show only an inflammatory nodule[4] without caseation, or even no lesion whatever at the site of injection, while the animals killed in the fifth or sixth week after inoculation with the stored bacilli may show a local abscess. It would appear that the local resistance is such that for a certain time a more or less conservative process is established against the bacilli of reduced virulence, but later this is insufficient to withstand the action of the bacillus, and caseation results.

SERIES III.

In this series the culture of the tubercle bacillus was obtained from a case of pulmonary tuberculosis, and the characteristic feature of this organism was its beaded appearance. It set up rapid tuberculosis in guinea-pigs, and was recovered in pure culture on Dorset's egg medium from the spleen of the infected animals. When 2 mgm. were inoculated intravenously into two rabbits it gave rise to generalised tuberculosis and death of the animals within one month from the time of inoculation. At the same period 6 mgm. of this bacillus were injected into two guinea-pigs. One animal was killed two weeks later; it showed a local abscess, caseating inguinal and iliac glands, and tubercles in the spleen, but none elsewhere. The second animal, which was killed six weeks later, had developed advanced general tuberculosis. Two guinea-pigs were inoculated, also subcutaneously, with 3 mgm. of the same bacillus. One animal, which was killed in three weeks, showed a local abscess, caseous inguinal and abdominal glands, and tubercles in the spleen and liver. The second animal, killed in six weeks, had developed general tuberculosis.

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[3] A Contribution to the Study of the Relationship between Avian and Human Tuberculosis, by S. G. Shattock, C. G. Seligmann, L. S. Dudgeon, and P. N. Panton, Proceedings of the Royal Society of Medicine, December, 1907.

[4] In such areas a very high degree of phagocytosis occurs, similar to the lesions found in avian tuberculosis.

Effect of 4 *weeks' storage.*—Two guinea-pigs were inoculated subcutaneously with the stored bacillus. One animal received 6 mgm. and the other 3 mgm. The pig which had received the larger dose was killed at the end of three weeks; a local abscess, caseous iliac glands, and small tubercles in the spleen had developed. The second animal, which had received 3 mgm., was killed in 5½ weeks, and showed genera tuberculosis of a moderate type.

Effect of 2½ *months' storage.*—Two guinea-pigs were inoculated subcutaneously with this bacillus. The animal which received 6 mgm. was killed at the end of three weeks and showed a local area of necrosis and a local caseating gland, but the spleen was normal and there were no lesions elsewhere. The apparently normal spleen from this pig was used for inoculation into other guinea-pigs (see below). The other animal, which had received 3 mgm., was killed at the end of six weeks; a local abscess, caseous inguinal glands, tuberculosis of the spleen of a limited type, and a few small tubercles in the liver were found to be present. Two guinea-pigs were inoculated with the emulsified spleen of the first animal of this experiment. One guinea-pig, which was killed in 17 days, had developed a large local abscess showing abundant tubercle bacilli, and also caseous inguinal and lumbar glands. The spleen was normal and no tubercle bacilli were seen in film preparations of the splenic tissue. The second animal, which was killed at the end of five weeks, showed a local abscess, caseous inguinal and lumbar glands, and the spleen was enlarged and caseous.

Effect of 3½ *months' storage.*—Two guinea-pigs were inoculated subcutaneously with 6 mgm. of the stored bacillus. One animal was killed in 19 days. There was no local lesion, the inguinal and iliac glands showed some slight enlargement, but no caseation was detected. Film preparations made from these glands revealed the presence of tubercle bacilli. The second guinea-pig, which was killed at the end of five weeks, had developed a local abscess showing numerous tubercle bacilli, caseous inguinal and iliac glands, tuberculosis of the spleen, but no tuberculosis elsewhere.

Summary.—In these experiments bacilli stored for 3½ months were still found to be actively pathogenic, although a very distinct reduction in the extent of the lesions incited in the infected guinea-pigs was observed. This fact can be appreciated by referring to the details of the experiments as shown by the inoculation of 6 mgm. of the fresh bacillus and the bacillus which had been stored for 3½ months, when the effect of the altered virulence is at once obvious, more especially in the case of the guinea-pigs which were killed within a period of 14 to 19 days.

SERIES IV.

Treated Bacilli.

Two guinea-pigs were injected subcutaneously with the treated bacilli. One guinea-pig, which received 9 mgm., was killed two weeks later. There was a large local caseous abscess showing abundance of tubercle bacilli, caseous inguinal and iliac glands, and a very large caseous spleen. The other animal, which received 1·85 mgm., was killed at the end of one month. There was a large local abscess containing numerous tubercle bacilli and advanced general tuberculosis.

Effect of 3 *months' storage.*—Two guinea-pigs were inoculated with 9 mgm. of the same treated bacillus. The first animal, which had been injected intraperitoneally, was killed two weeks later, but no macroscopic changes were detected. The omentum appeared to be quite normal, but when examined microscopically patches of fibrous tissue, including numerous endothelial cells and small giant cells, were found. There was no caseation, but tubercle bacilli were present in large numbers and almost entirely intracellular. The other guinea-pig died at the end of one month. There were a local lesion with numerous tubercle bacilli, early tuberculosis of the spleen, and caseous inguinal glands. Two guinea-pigs were inoculated with 3·7 mgm. of the same treated bacillus. The first animal, which had been injected intraperitoneally, was killed two weeks later, but no change was detected. The omentum taken for microscopy, however, showed fibrosed cellular patches containing both small and large giant cells, but no caseation. Bacilli were numerous, but almost entirely within the giant cells. The second guinea-pig, which had been inoculated subcutaneously, was killed at the end of one month. There were a local abscess showing tubercle bacilli, caseous inguinal and lumbar glands, and limited tuberculosis of the spleen. One guinea-pig was inoculated with 9 mgm. of the same treated bacillus subcutaneously, and was killed two weeks later. The post-mortem examination revealed encapsulated nodules in the muscles of the leg, but no glandular enlargement, and no other lesion was detected. A film of the muscle lesion showed massesof tubercle bacilli inside giant cells and endothelial cells.

Effect of 4½ *months' storage.*—One guinea-pig received 1·5 mgm. subcutaneously, but no lesion of any kind was detected 14 days later, while another pig, which had been injected subcutaneously with 3 mgm., when killed at the end of one month was found to have a local abscess, caseous inguinal and lumbar glands, and some small tubercles in the spleen, but none elsewhere.

Effect of 5½ *months' storage.*—One guinea-pig was inoculated with 1·5 mgm. of the stored bacillus, and was killed seven weeks later. It was not wasted. There were a local fibro-caseous abscess, caseous inguinal and lumbar glands, and some large tubercles in the spleen and a few small tubercles in the liver. The spleen and local lesions obtained from this guinea-pig were inoculated separately into four guinea-pigs; in each case rapid and generalised tuberculosis was produced.

Summary.—It may be stated at the outset that treating the bacillus with immune tuberculous serum had no effect on its pathogenicity, while storage cannot be said to have reduced the virulence to the same extent as occurred with the other cultures of the tubercle bacillus employed. The difference, however, between general tuberculosis such as occurs with recently cultivated bacilli and that which is induced by means of stored bacilli has only to be seen to be appreciated. Further, it has been shown that bacilli present in a local lesion and in the spleen of a guinea-pig which had been inoculated with bacilli stored for five and a half months were capable of inducing fully active tuberculosis if planted in fresh animal soil.

Attention also must be drawn to the limited tuberculosis of the peritoneum in guinea-pigs inoculated with such samples of stored bacilli. In fact, the contents of the peritoneal cavity appeared to be normal, but microscopical examination of the omentum revealed a condition almost akin to leprosy. These observations agree with those of Stanley Griffith[5] recently published on the strains of tubercle bacilli isolated from cases of human lupus. In this valuable contribution to the study of tuberculosis the author's own words may be quoted: "Cultures were obtained from no fewer than ten guinea-pigs without macroscopic lesions of tuberculosis. ...... The absence of macroscopic tuberculosis in a guinea-pig inoculated with lupus material and examined within five weeks does not therefore necessarily signify that there were no tubercle bacilli in the material inoculated." The observations made by Griffith on the effect of inoculating guinea-pigs with certain samples of lupus material agree with the experiments recorded here on the effect of intraperitoneal inoculation of guinea-pigs with a certain strain of stored tubercle bacilli.

SERIES V.

Bovine Tubercle Bacillus.

This bacillus, which was supplied to me through the kindness of Professor S. Delépine, was cultivated for three weeks on egg medium, and when inoculated into rabbits and guinea-pigs gave rise to rapidly fatal tuberculosis in doses of 1 mgm. and 0·5 mgm.

Effect of 7 *months' storage.*—Two guinea-pigs were inoculated with 1 mgm. and 0·5 mgm. respectively of the bacillus which had been stored in saline. Neither pig showed any evidence of tuberculosis at the end of six weeks, and no tubercle bacilli were detected in antiformanised residues of the respective spleens.

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[5] Further Investigations on the Strains of Tubercle Bacilli Isolated from Cases of Lupus, by A. Stanley Griffith, Journal of Pathology and Bacteriology, vol. xviii., No. 4, April, 1914.

Effect of 8 *months' storage.*—Two guinea-pigs received subcutaneously 57 mgm. of the stored bovine bacillus, but without result at the end of six weeks, and the spleens of these guinea-pigs when inoculated into further guinea-pigs failed to excite tuberculosis.

Summary.—In this experiment we have the full effect of storage on the bovine tubercle bacillus. An actively virulent bovine bacillus was rendered non-virulent as far as the guinea-pig tests serve to show by this means, and further, such an enormous dose as 57 mgm. failed to incite any macroscopical lesion, and, moreover, the spleens of these animals were shown to be sterile.

Film preparations of the various samples of the tubercle bacillus were made before inoculation of the animals, so that any question as to whether the inoculated material contained bacilli need not be considered.

These results are of sufficient interest to record even at this stage of the investigations, but a large amount of work will have to be done to show the periods at which such alterations of pathogenicity occur. It is well known that when bacteria are kept in an unsuitable medium they may lose their virulence, but the interest in these experiments rests in the gradual reduction of the pathogenicity of the bacillus stored in normal saline and also because these observations are based on the effect of the inoculation of known quantities of the bacillus at various intervals.

It must be mentioned, however, that all my experiments refer entirely to the alteration of the pathogenicity of the tubercle bacillus for such a susceptible animal as the guinea-pig, and no attempt has been made to study the rate of growth of the stored bacillus on artificial media, but cultivations were made from the infected tissues of the guinea-pigs on numerous occasions and compared with the originals. No attempts were made, however, to subcultivate the stored bacillus direct from the saline-bacillary mixture, as such observations are associated with certain fallacies which do not exist in experiments on pathogenicity, and after all this is the most important characteristic of a micro-organism.

OBSERVATIONS ON 120 CASES OF LEAD ABSORPTION FROM DRINKING-WATER.

By W. W. STAINTHORPE, M.D., B.S. Durh.

The occurrence of plumbism, due to a contaminated water-supply affecting a considerable number of the consumers, is so rare in the present day that I feel that a detailed report of some of those cases that came under my observation during a recent epidemic at Guisborough will be of interest to the medical profession.

The outbreak was the subject of a Local Government Board inquiry last autumn and was clearly traceable to the water-supply, which at intervals had been found to contain lead in solution, due to the fact that the water supplied to the houses in the town passed through lead service pipes, and that the water itself had at times a distinctly plumbo-solvent action, especially after heavy rains. Plumbism from this cause differs largely from that arising in lead factories because of the small amount of the poison taken into the system in a given time, and as the poison is a cumulative one some time may elapse before the onset of any symptoms, however slight, which may afford assistance towards the elucidation of the actual causation; also severe intoxication may have taken place prior to any symptoms pointing to plumbism having made themselves manifest, by which time grave structural changes may have occurred in the kidney, liver, or nervous tissues, leading to premature old age or to a fatal termination from Bright's disease, cirrhosis, paralysis, &c. I attended a large number of patients suffering from the intoxication and I had the misfortune to contract the disease myself. The following observations are, however, confined to 120 serious and typical cases, about each of which I made careful notes. The age and sex of these patients and the number affected at the different age-periods are set forth in the following table, together with the number of fatal cases:—

Ages.	Male.	Female.	Total.	Died.
Birth—6 weeks	1	2	3	0
1 year — 20 years	3	4	7	1
20 years—30 ,,	8	15	23	0
30 ,, —40 ,,	19	26	45	1
40 ,, —50 ,,	10	10	20	1
50 ,, —60 ,,	6	8	14	0
60 ,, —70 ,,	3	5	8	1
Totals	50	70	120	4

In this series of cases all stages of the intoxication were seen, from the commencing general languor and debility, attended by anæmia, to the paralytic stage, ending in convulsions and death. Amongst the number are three infants under the age of six weeks who from birth had been nourished solely upon the breast. Lead was found in the mother's milk in each instance, and in the urine in two instances. Children are supposed to be ready victims to the disease, and I am at a loss, therefore, to account for the small number affected. That some persons are more susceptible to the poison than others is clearly shown in the case of two individuals who developed symptoms after only six weeks' residence in the locality.

As will be seen by the above table, 4 deaths occurred directly traceable to lead intoxication, 1 from convulsions and 3 from chronic Bright's disease accompanied by cirrhosis of the liver. A chemical examination of the liver, kidneys, and spleen from one of these cases showed the presence of lead, the largest amount being found in the spleen. The signs and symptoms of the disease were very varied, and may best be described separately under the following headings. The figures show the number affected by particular symptoms:—

Premonitory symptoms	120	Menstrual disorders	55
Abdominal	102	Abortions	5
Headache	91	Blue line on gums	15
Anæmia	96	Constipation	40
Nervous and muscular disorders	89	Convulsions	2
		Albuminuria	20

Premonitory Symptoms.

Careful inquiry into the previous history of these cases of plumbism revealed that they had all passed through a period of ill-defined indisposition, in some cases of a few weeks' duration, in others for a longer time, during which their subjective feelings were so indefinite and irregular as hardly to merit much notice being taken of them by the patients themselves. The following symptoms were usually observed: General lassitude; weariness; languor; tiredness, at first after slight exertion, afterwards even after sleep; restlessness of mind and body; incapacity for work; occasional fits of mental depression; irritability of temper; alteration of disposition; desire to sleep at any moment, sleep being heavy, fitful, and unrefreshing; and sudden craving for food, especially soon after meals (in a few cases), although usually loss of appetite, nausea, and anorexia, accompanied by a peculiar, sour, rancid, clammy taste in the mouth in the early morning, prevailed.

Abdominal Symptoms.

These symptoms were grouped under the following five varieties: (1) Abdominal distension; (2) abdominal heaviness; (3) burning sensation in the epigastrium; (4) gnawing sensation; and (5) colic. Each variety was distinct and independent of the other; they were rarely associated together, and eventually, after becoming more constant and severe in intensity, culminated in definite attacks of colic.

1. *Abdominal distension.*—During meals the patient suddenly experienced a sensation of fulness and distension all over the abdomen, together with nausea and desire to eructate, lasting from a few minutes to several hours, and passing off quickly with possibly no recurrence for several days.

2. *Abdominal heaviness.*—In this variety a cold, weighty feeling was experienced in the lower abdomen, setting in soon after meals, causing a "bearing down" sensation and a desire to pass urine and flatus, both of which gave temporary relief.

3. *Burning sensation in the epigastrium.*—This symptom commenced as a raw burning sensation at the back of the throat, particularly in the early morning after drinking fluids, passing down behind the sternum, where it was frequently very acute, to the epigastrium, and through to the back between the shoulder blades; at times the diaphragm felt raw and tender, so that deep inspiration and coughing became painful. Loss of appetite, nausea, anorexia, with a sour clammy taste in the mouth, were usually present, as well as a desire to vomit and retch, which frequently resulted in the vomiting of glairy mucus having a very bitter, sour taste; rarely did the vomit contain food previously taken.

4. *Gnawing sensation.*—This commenced as a vague uncomfortable feeling all over the abdomen, occurring at irregular intervals, and frequently associated with general weariness and languor, seldom of sufficient severity for the patient to seek medical advice until the symptom became merged into a dragging, gnawing sensation, which usually became localised to the epigastrium or hypogastrium as the severity increased; it was usually likened to a tearing sensation, as if the bowels were being torn out or grasped by an unseen hand. This symptom was always worst from two to three hours after meals, and was accompanied by an intense craving for food or drink, which usually afforded instant relief for the time being. Exercise and exertion considerably aggravated the condition. A constant desire to pass flatus, to eructate, and to micturate attended this symptom, the least effort to do so being usually strained and very painful.

5. *Colic.*—The preceding symptom was the most frequent forerunner to definite attacks of acute colicky pain in the abdomen, which varied in character from a sharp stabbing, cutting pain to one of an acute twisting variety, as if the bowels were being nipped. The attacks usually came on quite suddenly and with such severity that the patient would roll about in considerable agony; the duration varied from a few minutes to several hours. The point of maximum intensity usually altered at each attack, the most frequent localities being around the umbilicus, the left iliac region, immediately above the pubes, and to the right of the epigastrium. During the attack the patient would break out into a cold, clammy perspiration, and present an anxious appearance, the temperature being usually subnormal and the pulse-rate slightly increased; a few cases only were observed in which the pulse-rate was under normal. When the pain was distinctly unilateral the pupil of the eye of the affected side was frequently noted to be contracted when compared with its fellow, and marked vagal tenderness upon the same side of the body was usually observed. The colic was often accompanied by vomiting, the vomit being bilious and containing a quantity of mucus. A constant desire to micturate, resulting in the voiding of a small quantity of urine, attended by considerable pain, was always present during an attack of colic. After the passing of the spasm the patient would fall into a sound sleep, and upon awaking the abdomen would be very tender to the touch, the pulse-rate usually above 100 per minute, and the temperature averaging 99° to 100° F.

Headache.

This was a frequent and troublesome symptom and in many instances the first and only subjective one for a considerable time. It was always attended by a sensation of lassitude, languor, and fatigue in the early stage; later general restlessness, irritability of temper, partial temporary loss of memory, attacks of dizziness occurring quite suddenly, slight dimness of vision, periods of insomnia, and hallucinations of sight and hearing were noticed. The pain usually remained localised to one of the following regions—viz., occipital, frontal, temporal, or vertex, and frequently depended in character upon its situation. The occipital variety was most intense over the occipital protuberance, radiating down into the muscles of the neck, and was of a dull aching character, often so intense as completely to invalid the sufferer. The frontal variety commenced as a slight feeling of heaviness behind the eyes, followed later by a sensation of constriction over the forehead. The temporal variety was more throbbing in character, usually accompanied by sharp, shooting, darting paroxysms, as if some instrument were being forced through the head from one side to the other. The vertex variety commenced with a feeling of heaviness, as if some heavy weight were resting upon the head, followed later by a "bursting open" sensation. The headache was usually very severe in the mornings, improving as the day went on, only to recur with a maximum intensity during the evening, vomiting frequently being present at the same time.

Anæmia.

This condition varied from a slight pallor of the conjunctiva and mucous membrane of the mouth—usually attended by a yellowish appearance of the conjunctiva and of the skin of the face—to an intense anæmia suggestive of malignancy. In the early stage microscopic examination of the blood did not show any marked change; in the later stages the erythrocytes were considerably diminished in number, and there was a corresponding diminution in the amount of hæmoglobin. Poikilocytosis was rarely seen, and in some instances there was a diminution in the polymorphonuclears and an increase in the lymphocytes. Thirty cases were carefully examined for the presence of basophile-staining granules in the red cells, with negative result. Sir Thomas Oliver was unable to find these cells in blood films taken from 10 of the cases presenting symptoms of all stages of lead intoxication. Dr. Kenneth W. Goadby, who also very kindly examined films from four of the patients, wrote me saying that he was unable to detect their presence. These observations tend to prove that basophilia as a sign of plumbism cannot be relied upon.

Nervous and Muscular Disorders.

While symptoms indicative of irritation of the nerve and muscle tissue were present in many of the cases only a few showed symptoms indicative of destruction of these tissues. The disorders of tactile sensibility were usually described by the patient as numbness and tingling, or "pins and needles" in the fingers and toes. The vaso-motor disorders consisted of cold hands and feet, and sometimes of hot, burning sensations in the extremities, especially after getting up in the early morning. At times the skin of the fingers and toes became quite white, or warm, livid, and moist. Profuse perspiration upon slight exertion was often noticed by the patient.

Muscular spasms.—These were often noticed, either in the form of tremors and twitchings of the extremities, or active cramps, most severe and persistent in the calves of the legs. These cramps were usually worst at night, preventing sleep, or in the early morning.

Sensory disorders.—These consisted of aching, burning, twisting or shooting pains in the limbs, with occasional paroxysms of excruciating lancinating pains, principally in the legs and feet. At one time the darting pains would be in the fingers, at another in the arms, at another in the legs; in other cases, again, the sensory branches of the intercostal nerves were implicated. In some cases the superficially situated nerve trunks, such as the ulnar, the musculo-spiral, or the popliteal nerves were unduly sensitive. A few cases showed slight cutaneous anæsthesia. In one patient who had complete ankle-drop and partial wrist-drop of both hands the anæsthesia was complete in the lower limbs as high as the knees, and in the upper limbs as high as the elbows. Muscular hyperæsthesia was frequently localised to the muscles of the legs.

Motor disorders.—Impairment of the muscular power of the muscles of the upper limbs was frequently noticed, the finer movements of the fingers and thumb being feebly performed, followed later by distinct weakness of the extensors of the wrist, patients often complaining that the grasping power had considerably diminished, and that they were afraid to carry any breakable object in case it suddenly fell from their hands. Two cases presented complete paralysis of the extensor muscles of the wrist and fingers of the right hand; in each case the paralysis became complete within three weeks of the patient first complaining of any symptom of plumbism. Although many suffered from weakness of the muscles of the legs, associated with exaggeration of the knee-jerk and of the plantar reflex, only one case of ankle-drop came under observation. Impairment of the muscles of the face was frequently noticed, as shown (1) by tremor of the lips, or on protrusion of the tongue; (2) by loss of expression, the lines which give character to the face being less marked or even obliterated. Two patients suffered from ptosis, one from nystagmus, and two from partial incontinence of urine and fæces.

Menstrual Disorders.

Dysmenorrhœa was very pronounced in many cases, frequently lasting a week, accompanied by a scanty flow. Other patients had intervals of amenorrhœa for several months, then one or two normal periods. The majority of the female patients suffered from profuse menorrhagia lasting in some instances for a period of three weeks.

Abortions.

Careful investigation failed to reveal an excessive number. In this series there were only five patients in whose urine lead had been found to be present who had suffered from abortions, one of whom had previously aborted three times in five years, another twice in three years.

Blue Line on Gums.

This sign depends largely upon the care devoted to the toilet of the mouth. Only two out of the 15 patients seen presenting a blue line were in the habit of brushing their teeth daily. The intensity of the sign bears no relationship to the severity of the symptoms. I have seen it very pronounced in persons suffering from quite trivial symptoms of plumbism, and I have even known of its existence previous to symptoms appearing. As only 15 patients in this series of 120 showed a blue line upon the gums, the absence of such sign is of little diagnostic value.

Constipation.

Although not a constant feature, many complained that their usual evacuation of the bowels was attended by more than the usual effort, and that they frequently had recourse to aperients. Those who suffered from costiveness in a marked degree frequently had attacks of spasmodic diarrhœa followed by obstinate constipation. Many cases were observed in which acute attacks of colic occurred after the exhibition of aperients amongst patients who had not previously suffered from abdominal trouble.

Convulsions.

Two cases of convulsions came under my notice, the patients being 65 and 18 years of age respectively. The former had 20 convulsive seizures extending over a period of 18 months; the latter six attacks in four months. They occurred quite suddenly without any previous warning, usually whilst the patient was walking about. Complete loss of consciousness was quickly followed by spasmodic twitching of the muscles of the face and limbs, usually unilateral. Respiration was at first quiet and sighing, later loud and stertorous, and at times intermittent; as the convulsive spasm passed off the breathing resumed the slow, shallow, sighing type. The pulse, which at the onset was fast and bounding, quickly became slow, intermittent, and at times hardly perceptible. The pupils of the eyes were usually dilated, fixed, and frequently unequal. Incontinence of the bladder and rectum usually took place during the attack. After the convulsion the patient would fall into a heavy sleep lasting several hours.

Albuminuria.

This sign was present in 20 cases, varying in amount from a mean trace up to 4 grammes per litre, estimated by Esbach's method.

The recognition of plumbism resulting from the absorption of lead gaining access into the system from the drinking of water which at times possesses plumbo-active properties may be one of considerable difficulty for the following reasons. 1. The amount of lead present in the water drawn from the household tap is usually small. 2. The poison being a cumulative one will necessarily cause the onset of symptoms to be slow and insidious. 3. Many of the symptoms of plumbism, especially in the early stages, are prone to simulate other diseases. 4. The absence of any conclusive sign or symptom, whereby incipient cases can be correctly diagnosed, excepting by the more or less costly clinical analysis of the urine or fæces. 5. Individuals suffering from plumbism do not necessarily excrete lead in the urine or fæces regularly. 6. The symptoms may continue for a long time after any lead can be detected in the excreta.

In each instance in the above series of 120 cases I based my diagnosis upon the presence of lead in the urine after submitting the urine to the following clinical examination.

100 c.c. urine and 10 c.c. pure redistilled nitric acid are evaporated in a porcelain basin to dryness; then ignited over a Bunsen burner until all organic matter is completely destroyed. The residue is dissolved in distilled water 3 c.c. + 2 c.c. HCl dil. pure, filtered into a test-tube, and an equal bulk of sulphuretted hydrogen is added. If no lead is present no change in colour will occur, and in its presence a brown colouration will be seen, varying in depth according to its amount.

Control examinations of 30 of the above cases were made for me by Messrs. Brady and Martin, of Newcastle-on-Tyne, confirming my results. The following two tests are worthy of note.

1. Paint the palm of the hand with a fresh solution of ammonium sulphide; in many cases the skin becomes black from the conversion of the lead excreted by the skin into lead sulphide, best seen upon the thenar eminence.

2. The saliva of a patient suffering from acute lead colic rarely contains any potassium sulphocyanate. On the addition of a few drops of liquor ferri perchloridi to the saliva of a healthy person a brownish-red ring appears where the two fluids meet. This is absent in the saliva in lead colic, but the sulphocyanate returns on the subsidence of the abdominal pain.

Guisborough.

London Hospital.—At an informal gathering of students in the college library on July 13th the prizes and certificates gained during the past session were distributed by Mr. E. Hurry Fenwick, consulting surgeon to the hospital. Price entrance scholarship in science, £100, C. S. Cloake. Price entrance scholarship in anatomy and physiology, £52 10*s.*, L. G. Jacob. Entrance scholarship in science, £50, G. Adler. Anatomy and physiology prize, £25, G. P. B. Huddy and A. G. Harsant (equal, prize divided). Letheby prizes: Organic chemistry, £10, G. Adler; honorary certificates, R. Theron and C. S. Cloake; inorganic chemistry, £15, M. Aronsohn; honorary certificates, — Seniyzky, I. H. Zortman, K. C. Beatty, and A. Eidinow. Prize in clinical medicine, £20, A. C. Perry; honorary certificates, F. H. Bray and C. P. Allingham. Prize in clinical surgery, £20, S. Batchelor. Prize in clinical obstetrics, £20, L. M. Ingle; honorary certificates, F. H. Bray and A. C. Perry. Hutchinson prize, £40, W. S. Perrin. Sutton prize in pathology, £20, F. H. Bray; honorary certificate, E. E. Herga. Andrew Clark prize, £26, A. C. Perry; honorary certificates, R. J. M. Love and E. E. Herga. Anderson prizes (three at £3), £9, E. Forrester Paton, G. P. B. Huddy, and D. C. Norris; honorary certificates, R. K. Ford and K. M. Ross. Dressers' prizes, £40: in-patients (four at £5), R. G. Sterling, H. W. Taylor, A. H. Morley, and H. W. L. Molesworth; out-patients (four at £5), E. B. Woolf, S. H. de G. Pritchard, H. P. Warren, and S. C. Woodhouse; honorary certificates, H. H. Bailey and D. F. Wilson. Practical anatomy prizes, £10, J. J. Murphy (£4), G. Adler (£2), G. Gluckman (£2), and H. B. Tronp (£2). Douro Hoare prize, £5, H. H. Bailey; honorary certificates, F. G. L. Dawson and A. R. Crane. Wynne Baxter prize, £5 5*s.*, E. E. Herga, J. Fanstone.

FURTHER NOTE ON THE USE OF

CELLULOID SPLINTS IN THE TREATMENT OF ACUTE CASES OF POLIOMYELITIS.[1]

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SOME three years have passed since I first made use of celluloid splints (which had been introduced into this country by Mr. H. J. Gauvain in the treatment of tuberculous disease of bones and joints) for the treatment of acute cases of poliomyelitis. Two years have elapsed since the publication of a note on this subject in THE LANCET, and it seems well to review the work of these two years. During this period ample opportunity has been afforded for testing the use and watching the effect of this mode of treatment.

From January, 1912, to December, 1913—i.e., two years—58 cases of poliomyelitis were admitted to the wards under my care. Of these, 32 were admitted within three months of the onset, and it is with these 32 cases that I wish to deal, for it is the early application of celluloid splints I consider important. Of these 32 cases 24 were splinted; the remaining 8 were either too extensively affected (both legs, arms, and trunk), or were cases of arm paralysis only, or had a distribution of paralysis which needed no splint or recovered so quickly that no splint was needed. Of the 24 splinted cases, in 3 recovery is now so far complete that no splint is needed. In the remainder splints are still required, but all are able to get about, either alone or with the aid of a push-cart. In several cases in which splints were at first required on both legs they now only require a single one below the knee to prevent foot-drop. In not one of all the cases recently seen or heard from has deformity arisen, but 3 have not been seen recently.

The more I see of this method the more convinced I am that it is a good one. I am perfectly aware that there is nothing new in splinting acute cases of poliomyelitis; it has been done in a variety of methods by various medical men for years. Some have advocated immobilisation in plaster-of-Paris, others have insisted on the immobilisation of the limb with complete relaxation of the paralysed muscles. All such immobilisation of the limb immobilises the patient, which in many cases is not only unnecessary, but gives no chance for physiological exercise of the muscles which are not paralysed. It is in the really acute cases—i.e., those seen within three months of the onset of the disease—that these splints have been of the greatest service, for they have kept the muscles at rest in a position of relaxation; they have prevented deformity and have enabled the patient to walk at an earlier period than would otherwise have been possible. The advantages of this form of splint are: (1) it fits the limb perfectly; (2) it is easily applied and removed; (3) it is light; (4) it is rigid; (5) it will not break easily; (6) any form of slipper, shoe, boot, or clog can be worn over it; (7) it is cheap; and (8) its manufacture is so simple that any one gifted with a little manual dexterity can make it. Many of the splints have been made by the sister in my ward and by my former house physicians, Dr. Cairns Terry and Dr. John Inkster, to all of whom I would tender my thanks not only for their work, but also for many improvements suggested by them. The splints are now made in separate departments of the hospitals. The process involved in making them is as follows: (1) the taking of the "negative" cast of the limb; (2) the making of the "positive"; and (3) the moulding of the splint on to the positive. It is the first of these points of procedure which it is essential for the medical man to perform, for unless the limb is in the right position the splint will be useless.

1. Certain articles are necessary for taking the cast of the limb—a strip of lead, 2–3 ft. long and 1 in. wide, some oil, some beeswax, a strong knife with a sharp point, and some plaster-of-Paris bandages. It is essential that the bandages should be properly made of book muslin, 4½ in. wide, 6 ft. long, loosely wound, and not too heavily loaded with plaster. The limb of which the cast is required is oiled, and if it be the leg a thin layer of beeswax is placed over the malleoli. The strip of lead is adjusted to the front of the leg. The leg is now held in position; *this is the most important detail in the whole process.* There should always be slight flexion at the knee-joint, and the foot should be carefully held at right angles to the tibia. It is most important that there should be no hyperextension of the knee or any dorsiflexion of the foot. Unless these two points are carefully attended to the patient will not only be uncomfortable, but will be unable to walk. The plaster-of-Paris bandages are now placed in warm water and after being squeezed out are wound round the limb, starting from the foot and working up the leg and thigh. It is best to take each bandage continuously up from the foot to the thigh, a few extra turns being needed over the knee and ankle. When the plaster has sufficiently set, which usually takes about 3–5 minutes after the last bandage has been applied, a cut is made down the anterior surface on to the lead. The incision must be complete and all fine threads divided, as otherwise the cast is liable to be spoilt by portions of the bandage being dragged out of place. The cut edges of the plaster are now separated and the lead and leg removed through the incision. The cut edges of the plaster are now brought together and a single layer of plaster-of-Paris bandage wound round the cast.

2. The "positive" cast is easily made from the "negative" in the ordinary manner by pouring in plaster-of-Paris, a stick being placed down the centre in order to make it easy to manipulate. After the plaster has firmly set, an incision is made down the anterior surface, the negative peeled off, and the positive removed.

3. *The moulding of the splint on the "positive."*—For making the splint the following articles are required: stockinette (made in the form of a tube, two or more inches wide), book muslin, solution of celluloid in acetone (Gauvain's[2] solution is as follows—11 oz. of celluloid, 160 oz. of acetone, to which is added while still hot 3 oz. of calcium chloride dissolved in 2 oz. of boiling water), celluloid varnish (cellulose triacetate 1 part, acetone 5 parts)—some braid for binding the splints, and some boot-hooks. The "positive" is well dusted with French chalk.

Method.—Three layers of stockinette are pulled on over the cast and on the third layer is painted a coat of the solution of celluloid; this is allowed to dry and then another layer of stockinette is pulled on; this in turn is painted with the solution of celluloid. In order, however, not to get the splint too thick on its anterior surface where it has to open to allow the leg being placed inside, and in order to make the splint sufficiently rigid to stand the weight of the body, layers of book muslin are placed down the back of the splint and painted on. It must be so arranged that in the anterior part of the splint there are some 5–6 layers, whilst at the back and sides there are 12–14 or more, depending on the size of the limb and the required strength of the splint. After the final layer of stockinette and celluloid solution has been applied a layer of celluloid varnish is painted on and the splint allowed to dry. Two incisions of about a quarter to half an inch apart are now made down the front of the splint and a strip about half an inch in breadth is removed. This allows the "positive" on which the splint has been made to be taken out and the inner layer of stockinette, which has not become impregnated with solution, is removed. The inner surface of the splint is now painted with the celluloid solution. The splint is now ready for fitting on to the patient. If the cast has been well made it usually fits perfectly, and only some small amount may need to be cut away about the knee and ankle so as to allow easy application and removal. The splint is now bound round with leather or braid, the latter being painted over with celluloid varnish and some boot hooks inserted.

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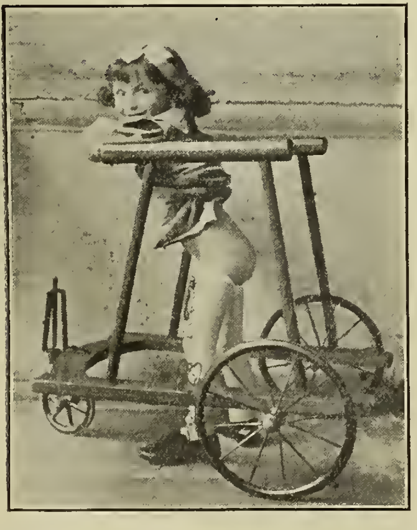
[1] The previous article on this subject was published in THE LANCET of July 13th, 1912, p. 80.

[2] Brit. Med. Jour., 1913, vol. i., p. 1200.

Method of application and use.—It is necessary to say a few words about the application, for unless this splint is rightly applied it will be uncomfortable, will cause pressure sores, and will therefore be said to be useless. The skin of the limb is dusted with powder and a thin stocking or stockinette put on. The splint is now opened in front and the limb dropped into place. It is essential to see that the heel is down and the malleoli are in their right situation. In early and acute cases—i.e., in cases within the first four weeks of onset—the splint should be worn day and night and only removed for washing and for such methods of treatment as may be considered desirable. After the end of the first month it is usually possible for the patient gradually to get into the erect position and make the early attempts to walk. (This is greatly assisted by a walking apparatus (Fig. 1). For this purpose a stocking is drawn over the splint and an ordinary shoe, rubber sand shoe, or boot worn. In the country children can wear clogs, and these serve the purpose of protecting the splint and keeping the feet dry. If clogs are used a fairly thick stocking should be worn between the clog and the splint.

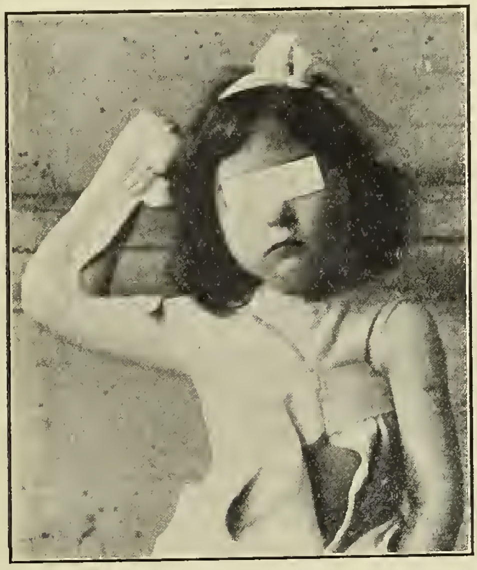
FIG. 1.



Child with flaccid paralysis of both legs and weakness of the muscles of the back in celluloid splints in walking apparatus.

Cases suitable for splinting.—Almost any case of paralysis of the lower limbs is suitable for this form of splinting, but those with weakness of the lower dorsal, lumbar, and pelvic muscles are difficult to deal with. In cases of paralysis of the shoulder muscles the arm can be placed in the position shown in Fig. 2, which serves to keep the deltoid and biceps relaxed. Thoracic and abdominal cases can be splinted in this manner, but it has little advantage over other methods of giving support to the back and trunk muscles.

FIG. 2.



Child with flaccid paralysis of deltoid, biceps, and muscles of the right arm. The arm is placed in a celluloid splint, which keeps it in an abducted and flexed position.

Conclusions.—The object of this note is to show that early splinting of cases of acute poliomyelitis with celluloid splints is attended with good results, in that it has aided the recovery of the paralysed muscles by keeping them at rest, that it has prevented deformity, and has enabled the patient to walk.

Of the 24 cases of acute poliomyelitis seen and treated within three months of the onset, in 21 it is known that no malposition has arisen; three cases have not been seen recently, so no positive statement can be made in regard to them. In one severe case, after wearing splints for a year, recovery was so far complete that splints were no longer required, and a year later it was difficult to say that there was any residual paralysis. It is fully recognised that this is fortuitous, and under other forms of treatment the boy might have made an equally good recovery, but it seems certain that his recovery was greatly assisted by the prevention of deformity in the early stage of the disease. Of the remaining cases, all have still varying degrees of weakness, but are all able to get about and have no malposition of the limb.

EPIDEMIC CATARRHAL JAUNDICE.

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IN September, 1913, after seeing no cases of catarrhal jaundice since the early spring, I began to meet with them amongst my out-patients, and they were fairly numerous until the middle of March, 1914, but for the last three months I have seen none. By making inquiries about the possibility of contact with other cases I found that in two instances they had occurred in connexion with definite epidemics.

In 1912 I published a paper on this subject in the *Quarterly Journal of Medicine* in which I tried to prove that catarrhal jaundice should be classed with measles and mumps as one of the specific infectious diseases due to an unknown organism, and that it should be regarded as an infective hepatitis. I am convinced more than ever that this is a correct view, and have been supported by Dr. Leonard Guthrie in a paper read before the Section for the Study of Disease in Children of the Royal Society of Medicine. I will not repeat all the arguments there brought forward, but will content myself by giving a few of the most striking.

The disease has an almost worldwide distribution, a definite seasonal and age incidence, and is commoner in some seasons than others. The fact that one attack confers immunity for life also points to its specific nature. Fewer than 40 epidemics have been described in this country, but when the view that the disease is not an incident in a non-specific gastro-enteritis is less widely held, small epidemics will probably be found to be fairly common, and small groups of two or three cases will be noticed still more frequently. I pointed out that though the clinical features of sporadic cases vary to some extent, none are met with which are not also seen in the epidemics and *vice versa;* the ages and seasonal incidence show a very close parallel, and the geographical distribution of epidemics closely follows that of sporadic catarrhal jaundice, though it is not quite so extensive. No doubt the gaps will soon be filled when greater interest is aroused; for instance, though the sporadic form is met with, no epidemics have been recorded from Canada, but Dr. C. H. Reason told me a few months ago that he met with one affecting about 20 children near Toronto.

It is still an open question whether the disease is a local one of the bile-ducts and liver or a general blood infection. With growing knowledge many diseases formerly regarded amongst the former class are now placed in the latter, and several considerations suggest that this should be one of them. Such are the prodromal period of malaise with pains in the head and limbs, the enlargement of the spleen, and the albuminuria, which are frequent in some epidemics, and also occur in isolated cases. The rare fatal cases met with in epidemics are inseparable on clinical and pathological grounds from acute yellow atrophy of the liver, and the seasonal incidence of this disease appears to be the same. It is noteworthy that three cases have occurred in London at the end of 1913 and the beginning of 1914, during the time catarrhal jaundice has been unusually common, one in a child recorded by Dr. J. Porter Parkinson, and two in adults by Dr. W. Brander and Mr. G. L. Keynes.

Recently collected evidence seems to prove that the disease is contracted by breathing in air containing the organism, and close contact is necessary. In a few cases I have noticed a definite pharyngitis, and I published some instances in 1912. In 1913 I met with another example in a girl aged 5½ years. She had pharyngitis and slight malaise on Nov. 4th, and on the 15th urticaria began, such that the mother said "she could not bear herself." On the 18th she vomited twice, and jaundice appeared on the 19th and lasted until the 26th. Sore-throat with marked redness of the pharynx was noticed in one of the epidemic cases (Table II., Case 4). Ralph Poignard noticed slight pharyngitis in every case in a small epidemic in children between the ages of 6 and 12 years. Dr. Cameron Gibson, who has recently published a paper, noticed sore-throat with symptoms of a "cold" in one case, and says that there were an unusual number of cases of pharyngitis in children during epidemics of jaundice at Lymm and Bickerton. This suggests that the tonsils and pharynx are the portals of entry of the infecting organisms, as in so many specific fevers, though they do not necessarily cause a recognisable inflammation of the tissues during their passage.

Several interesting points are brought out in the two epidemics which I have just seen. The first occurred at the Algernon-road School, Hendon. In this 10 children were attacked, 4 boys and 6 girls. The first case occurred in one of the older children; all the rest in the children attending the infants' department. Boys and girls are taught together, but the buildings for the older children and infants are in separate blocks at opposite ends of the playground.

The district is a somewhat isolated one and the children attending the school have clean and comfortable homes. West Hendon is supplied by two water companies, the Colne Valley and the West Middlesex, and about half the children affected come from houses supplied by the one and about half from those supplied by the other. Nor did the children have milk from a common source. Water is supplied at the school, but while the epidemic was in progress the weather was cold and most of the children live very near the school, so that little water was being drunk. Inquiry also showed that some of the affected children had not been using it at all. This disposes of the possibility that water or milk could have conveyed the infection. Many of the children attacked were members of the same class and, after the first case, all were infants.

TABLE I.—*Giving Particulars of 10 Cases of Catarrhal Jaundice occurring in the Algernon-road School, Hendon.*

No.	Sex and age.	Date of absence from school.	No.	Sex and age.	Date of absence from school.
1	F., 9	Dec. 1 to Dec. 25.	6	M., 5	Jan. 7 to Jan. 19.
2	F., 6	,, 11 ,, Jan. 7.	7	F., 6	,, 9 ,, ,, 19.
3	M., 5	,, 17 ,, ,, 7.	8	M., 5	,, 16
4	F., 6	,, 31 ,, ,, 19.	9	M., 6	Feb. 11 ,, Feb. 27.
5	F., 6	Jan. 7 ,, ,, 19.	10	F., 7	Mar. 2 ,, Mar. 31.

There is little doubt that the disease was conveyed from child to child by the air, while they were in school, or in the room in which hats and coats were hung. There was no influenza, typhoid, or other kind of illness affecting the school or neighbourhood at the time, and there were no cases of catarrhal jaundice in the other schools of the district or amongst the general population round about.

Dr. M. I. Baker, who attended all the cases except two, which I saw myself, says they were mild with one exception. In this case there was severe initial vomiting, and pyrexia, 101° F. for four days. The urine contained a trace of albumin, which disappeared after a fortnight. There was a good deal of pain in the hepatic region and the liver was enlarged. In the two cases which I treated the temperatures were 98·4° and 98·8° F., and the pulse-rates 102 and 104 respectively, though bile salts as well as bile pigment were present in the urine. I have several times found a quickened pulse during the time bile salts were present in the urine, and in common with all other observers have failed to find slowing of the pulse in catarrhal jaundice in children. The liver was enlarged in both cases, but the spleen was not palpable. As the jaundice was disappearing the girl patient complained of itching when warm in bed, an unusual symptom in a child in the absence of urticaria.

There were no prodromal symptoms in any of the cases; there were nausea, vomiting, and anorexia about two days before the jaundice was evident, but at this stage the liver is presumably already inflamed.

One child complained spontaneously of xanthopsia, an interesting symptom and one whose occurrence has been denied by some authors.

The second epidemic, which differed considerably from the first, was at the Bridge School, Wealdstone, about five miles away from the Hendon school. Twelve school children were affected, and three mothers and four younger children caught the infection from children attending the school. There were no cases in other schools of the district, nor any isolated cases, so far as could be discovered, nor could any connexion between the two outbreaks be established.

Table II. gives the age, sex, and class of each child and the clinical details which were procurable. Great interest attaches to the rapidity with which the epidemic spread. All the 12 children were attacked within a period of 12 days, and the incubation period must have been very short (1, 2, and 3 days); whereas in the Hendon epidemic between the first and second cases there was an interval of 10 days, and between the cases of the brother and sister attacked (the latter probably infected by the former) 14 days; between the eighth and ninth and ninth and tenth cases, 26 and 19 days respectively elapsed. The longer incubation period may have been correlated with the lesser virulence. When I had the disease myself the incubation period cannot have been longer than three or four days. Cameron Gibson gives 3–14 days, but noticed intervals of 27 and 47 days in two instances. The very long intervals sometimes noticed may be explained by abortive cases being overlooked, or by the virus remaining active in a room and infecting a child indirectly.

In the Wealdstone school the girls have the upper floor, a central hall with class-rooms round it, and the boys the lower, to which a separate staircase gives access. There are no mixed classes. The first four cases occurred in one class-room, and affected children sitting at desks placed next to one another. Fringuet noticed a parallel phenomenon in a school epidemic, in which three boys and two girls, who sat at neighbouring desks, were attacked in turn.

Here again the general water-supply cannot be incriminated, and at the school little water was being drunk, and in any case the boys seldom use the cup provided, usually drinking it from their hands. With one exception the homes of the children attacked were good ones.

In this epidemic the first, sixth, eighth, and tenth, and possibly the twelfth, cases must have been abortive ones—namely, cases in which no jaundice developed. In one of these it was proved that the child had the disease, for he gave it to his mother and brother at home, and they developed the typical jaundice. On the analogy of other epidemic diseases such cases would be expected to occur, but they are either unusual or more probably overlooked.

TABLE II.—*Giving Particulars of 12 Cases of Catarrhal Jaundice occurring in Bridge School, Wealdstone.*

Case.	Sex and age.	No. of form.	Date of onset.	Other cases in same house.	Character of illness.
1	F., 8	2A	Feb. 25	—	Vomited for several hours, bringing up green mucus. Headache an dizziness; no jaundice.
2	F., 8	2A	Feb. 26	Mother and 3 younger children.	Sudden onset with severe vomiting of yellow mucus, rigors and pyrexia Pain in hepatic region. Furred tongue and sordes on lips; deep jaundice. Loss of weight, prolonged convalescence. Mother also had severe attack.
3	F., 7	2A	,, 27	—	Feb. 27: Malaise. Feb. 28: Jaundice of conjunctivæ. March 1: Deep jaundice for 3 weeks. March 4: Much bile pigment; trace of bile salts in urine; albuminuria. Liver two fingers' breadth below costal margin. Spleen not felt. Hereditary ichthyosis of skin; on appearance of jaundice some itching. Six weeks after onset still easily tired.
4	F., 8	2A	Mar. 2	—	Nausea, no vomiting; sore-throat; furred tongue. Jaundice lasted about a fortnight.
5	M., 11	2	,, 2	Mother.	Vomiting, dizziness, and headache. Sordes on lips. Slight jaundice of conjunctivæ. Mother had slight attack some days later.
6	M., 9		,, 2	—	Headache; some pain in hepatic region; no jaundice.
7	M., 8	5	,, 3	—	Vomiting of green mucus; headache; slight jaundice of conjunctivæ.
8	M., 9	4	,, 4	—	Vomiting of green mucus; headache; no jaundice.
9	M., 10	4	,, 4	Mother and brother.	Giddiness; headache; no vomiting; no jaundice. Mother and brother developed slight jaundice.
10	F., 7	2A	,, 4	—	Headache; dizziness; vomited yellow mucus; slight pyrexia; no jaundice.
11	F., 9	3A	,, 6	—	Vomited mucus and bile; slight pyrexia; slight jaundice of conjunctivæ and skin.
12	M., 9	4	,, 9	—	Nausea; no headache; no vomiting; jaundice doubtful.

The rather numerous cases of gastro-enteritis noticed during the Bloemfontein epidemic were probably abortive cases; the cases of pharyngitis noticed by Cameron Gibson may have been, though this is less probable. One case was noted by Falkner at Toowomba. Apart from these I can find no record of any in the various epidemics at home or abroad. The Wealdstone epidemic establishes their occurrence on a firmer basis than before.

The disease appears to be most infectious in the prodromal period and in the early stages, but the virus may remain active and be transported to a distance. Instances of spread by this means have occurred several times, and a good example was published recently by Prosper Merklen under the title of "emotional jaundice." A girl was run into by a bicycle on Dec. 3rd, 1910. On the 5th she had headache, nausea, and a temperature of 38·4° C., and on the 6th jaundice. The jaundice only lasted seven or eight days, and on the 27th she went to stay with an uncle in the country in a household where there were four children. Two of these contracted the disease in a more severe form, one becoming ill on Jan. 8th and one on Jan. 17th, 1911. Another example of the virus remaining active was one I met with in 1912. In a family of 18 members the youngest child, aged 3 years, had catarrhal jaundice on March 6th, and six weeks later, on April 17th, the next youngest, a girl, aged 5½ years, was attacked. Schneekloth records that in a family two girls fell ill at eight days' interval, and an infant three months later. Krasnobaeff states that three brothers were attacked at intervals of three or four weeks, and then it was discovered that a child with jaundice had lived for a few days in the room at which they stayed. This proves conclusively that the virus can persist outside the body, though it is not improbable that carriers may play an important part in its dissemination.

Dr. Gibson thinks that there are two specific diseases described under the name "epidemic catarrhal jaundice," one attacking children and rarely affecting adults, the other affecting adults. It seems much more probable that the disease is usually confined almost entirely to people of one age owing to its slight infectivity. It attacks one form in a day school or one house in a boarding school. For instance, several boys in the sixth form of a public school were attacked two years ago, and none in any other form. In another, adults of similar age alone may be attacked as in the French barrack epidemics, in which young recruits usually suffer and in which a few of the dormitories alone are affected, but in one of which at least only old soldiers were attacked and the outbreak was confined to their special quarters. It is only in extensive epidemics that people of all ages are attacked.

The one possible mode of spread, except by the air, which would explain these epidemics, is by means of some biting insect. Mosquitoes, flies, and midges are excluded by the fact that it is not a summer disease; bedbugs and pediculi by the fact that it is as common amongst the better classes as amongst the poor. Fleas are unlikely to be the cause for the same reason, and in some instances I have been able to exclude them so far as they can be excluded. It is also unlikely because fleas are most common in July, August, September, and October, and least common in January, February, and March, the months in which catarrhal jaundice is most prevalent.

No other infectious disease was prevalent during either of these two epidemics, and they add to the evidence, which is steadily accumulating, that the disease is quite distinct and not merely a peculiar form of influenza, paratyphoid, or typhoid fever. I have advanced reasons elsewhere for attributing its occasional association with these diseases to coincidence. In one of my cases I had Widal's reaction done a fortnight after the jaundice had disappeared and it was negative. The positive agglutination tests with the bacillus typhosus and paratyphosus are probably due to the presence of bile in the blood, and no weight should be attached to a positive result until this is no longer present.

During the discussion on Dr. Guthrie's paper, already mentioned, Dr. R. C. Jewesbury mentioned the occurrence of epidemic jaundice in dogs. This was formerly held to be a severe form of distemper comparable to the jaundice which appears in the bad cases of yellow fever and relapsing fever, but it is more probably a distinct disease. Mr. Henry Gray gives an account of it in Hoare's "Text-book of Veterinary Medicine." He tells me that it is rarely seen in London, but that it occurs rather commonly in sporting dogs, especially after they have been in damp thickets, and causes a very heavy mortality. He is inclined to think that it is allied to or identical with the malignant jaundice investigated by Nuttall and proved to be due to a protozoon, piroplasma canis, conveyed by the bite of a tick. There seems to be no likelihood that it is the same disease which attacks man, and I can find no evidence that epidemics in man and in dog have occurred together.

In conclusion, I should like to thank Dr. C. W. F. Young and his assistant, Dr. R. A. Askins, Dr. Scanlan, and Dr. Baker, and also the head masters and mistresses of the schools, for the great trouble they took in supplying me with information.

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Harley-street, W.

SOME PROBLEMS IN CARDIAC PHYSIOLOGY:

CONTRIBUTIONS TO A STUDY OF THE RELATIONS WHICH EXIST BETWEEN THE VARIOUS CHAMBERS OF THE MAMMALIAN HEART.[1]

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PROBABLY all here are familiar with the history of the subject of this lecture, and are aware that before 1892 it was impossible to explain the action of the mammalian heart on the comparatively simple lines found adequate in the case of the heart of the frog, owing to the fact that any muscular connexion between auricle and ventricle in the mammal was absolutely denied. In 1892 it was shown that this idea was erroneous and that muscular connexion between auricle and ventricle did as a fact exist. In the following years the details of the connexion were worked out by various observers, and the band of tissue is now familiar to everyone as the auriculo-ventricular bundle. As is often the case with new knowledge, it was some time before the existence of the auriculo-ventricular bundle was used in explaining symptoms presented by clinical cases. Within the last few years, however, its importance has been fully recognised, and its presence has generally been referred to in explaining certain forms of cardiac irregularity. Certain difficulties have arisen in connexion with these explanations from time to time, and some have doubted whether the case really is as simple as it appears. Clinical experience and experimental results have sometimes thrown doubt on the explanation put forward. The difficulties are of the following kind. Cases have occurred in which—if the published records are to be trusted—an interruption of the normal rhythm of the heart has been observed, although the auriculo-ventricular bundle has proved to be intact; and cases of normal rhythm have occurred in which the bundle was subsequently found to be destroyed. Many of these difficulties may be capable of solution. Some of them, however, appear to be insoluble.

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[1] A lecture delivered before the University of London at South Kensington on June 18th, 1914.

So long ago as 1892 I described the existence of additional muscular connexion between the auricle and ventricle in the right lateral wall of the heart, and although this observation excited little attention at the time, it lived in the memory of some workers in cardiac physiology, and was sometimes glanced at as likely to afford a possible explanation of puzzling experimental results. My own work on the heart was unavoidably interrupted for some time, and it is only within the last three or four years that I have been able to return to it. The position was found to be as described. The presence of the auriculo-ventricular bundle was acknowledged, and it was regarded as the one and only path of muscular conduction between auricle and ventricle. And yet it was not adequate to explain the facts found clinically and experimentally.

The problems which presented themselves for solution, therefore, were the following:—

1. Do there exist anatomical paths of muscular connexion between auricle and ventricle other than the auriculo-ventricular bundle?
2. If such additional paths exist, what are their number, situation, structure, and connexions?
3. Are such paths—provided they exist—capable of forming a physiological connexion between the auricle and ventricle?

It appeared best to carry out the histological part of an investigation of this kind upon human material, as the labour involved would in any case be very great, and the whole of the work would have required to be repeated had other material been used. Such a selection made the work more difficult, as it is always troublesome to obtain human material sufficiently fresh to make good preparations. This and other difficulties were ultimately surmounted, however, and a minute examination of the whole of the auriculo-ventricular connexion was commenced. The method adopted was as follows. The whole of the auriculo-ventricular ring of the heart was divided up into blocks, and each block in turn was cut into sections. The sections were floated on to glass, stained, mounted, and examined. The stains found most generally useful were the connective tissue stain of Mallory, Heidenhain's iron hæmatoxylin, hæmatoxylin and safranin, and various modifications of the silver impregnation method. Stress should be laid on the fact that in the systematic examination of the ring every section in the series was stained and examined. In some researches it has appeared that not every section, but every alternate section, or even every third or fourth, has been examined. If it is desired to exclude once for all the possibility of the existence of any extra connexion it is obviously necessary that every section shall be examined. Many of the original series of sections have been repeated, sometimes again and again, for the purpose of confirming or of correcting the earlier results. Some of the more important conclusions are the following:—

1. *Neuro-muscular structures.*—There exist in the heart in the neighbourhood of the auriculo-ventricular groove on the left side of the organ neuro-muscular structures whose constituents are partly nervous and partly muscular, and which have connexions with the nervous structures of the groove and with the muscular tissue of auricle and of ventricle.

2. *Nodal tissue.*—There exists in the right lateral wall of the heart a mass of hitherto undescribed nodal tissue.

3. *Muscular connexions.*—In association with the second conclusion there exists at least one muscular path between auricle and ventricle along which impulses can pass, and which is able to keep the chambers in physiological association, even when the auriculo-ventricular bundle has been cut.

4. *Paths of physiological conduction.*—Experimental results have been obtained which completely bear out the anatomical fact of the existence of an additional muscular path between auricle and ventricle.

1. *Neuro-muscular Structures.*

The neuro-muscular structures can be described best by referring to the appearances which are found successively when a series of sections is examined. The structures lie in the connective tissue at the base of the auricle or ventricle. The first indication of their presence is the appearance of a few nerve fibres of small size amongst the connective tissue bundles. A few sections further on it is seen that the number of fibres has increased, and soon connective tissue is seen to be arranged round the group and to be forming a sheath for it. As the series of sections is followed the group of fibres becomes larger, and may attain a diameter of 170 mu. It now appears as a well-developed bundle of fibres surrounded by a well-formed capsule of connective tissue, inside which a definite and large lymph space can often be distinguished. If the bundle be followed further it will be seen that its constituents are changing. Instead of the nervous fibres forming the only kind of tissue present there are now more darkly staining fibres which can be recognised as muscle, very similar to the fibres of the neighbouring auricle or ventricle. Some, however, have different characters, appear at first sight to be tubular, and prove on closer examination to be composed of more or less structureless protoplasm in the centre, with striation and indication of sarcostyles at the periphery. These fibres bear some resemblance to the fibres of Purkinje found elsewhere in the heart.

The amount of muscle in the bundle gradually increases and may become large, whilst at some part of its course muscle fibres are given off from the bundle and become connected with the neighbouring auricular tissue. In other situations some of the nerve fibres may be seen to leave the bundle, and apparently to become connected with nervous structures lying in the connective tissue of the groove. Throughout their course these bundles are provided with a rich supply of blood-vessels. The complete organ then presents itself as a spindle-shaped mass commencing with a few nerve fibres of small size, increasing to a bundle of perhaps 170 mu. in diameter and somewhat resembling a nerve trunk, and richly supplied with blood. Soon muscle appears amongst the nerve fibres, assumes considerable proportions, and ultimately becomes connected with neighbouring muscular masses. The nerve fibres also appear to become connected with neighbouring nervous masses. The bundle is contained in a connective sheath in which lymph spaces may be seen.

2. *Nodal Tissue.*

This—the second structure to be described—is found in a different part of the heart wall. It is found in the auricular wall at a point almost on the extreme right lateral aspect of the heart, slightly towards the posterior surface. Amongst the bundles of auricular muscle in this situation will be observed a more circumscribed mass, partly surrounded by fibrous connective tissue, and in free communication with the rest of the auricular muscle. The mass may be nearly circular in outline, or it may be distinctly olive-shaped. In either case it is seen to consist of an outer part which is similar to normal muscle, and a central portion which shows modifications of the kind usually associated with nodal tissue. The tissue stains differently, its fibres are often exceedingly fine and show rich branching, and the cross striation is not very easily seen. The blood-supply is rich.

3. *Muscular Connexion.*

Associated with the presence of this nodal tissue is the existence of a muscular path leading from the auricle to the ventricle and forming a channel along which impulses are able to travel. This path is found at the lower part of the mass of nodal tissue, and is formed by the passage of strands of ventricular fibres derived from two or three different layers of the ventricular wall upwards and outwards until they come into association with the tissue of the node. Thus the node is, as it were, interposed in the course of the muscular path between auricle and ventricle, and any impulse passing from auricle to ventricle would necessarily pass through the tissue of the node. The need for such an arrangement is apparent when the physiological conditions are considered. For, as suggested in 1892, the interposition of the fine fibres of the node with their altered character results in a slowing of the rate at which the impulse travels, and thus the pause between the auricular and the ventricular contraction is brought about.

4. *Experimental Results.*

That the existence of such a channel of communication between the auricle and the ventricle will render necessary important alterations in our ideas of the mechanism of the coördination of the action of these chambers is obvious. For if, contrary to preconceived ideas, the auriculo-ventricular bundle is not as a matter of fact the sole muscular path along which impulses may pass from auricle to ventricle, its destruction does not necessarily involve the interruption of such passage, and clinical cases and experimental results—hitherto difficult of interpretation—become intelligible. Direct experimental results are, therefore, of especial interest.

The following experiments, amongst others, have been carried out. In the exposed heart of the mammal the bundle has been cut and electrocardiograms have been taken subsequently. These showed that the rhythm between auricle and ventricle persisted.

The experiments performed by Flack and Leonard Hill showed that there existed at the right lateral region of the heart a mechanism which under certain circumstances was capable of affecting the auriculo-ventricular rhythm.

More recently I have carried out the following experiments directed especially to the clearing up of the question. The method adopted was simple. In the beating heart of the mammal a thin knife was passed through the right ventricle near the groove, and brought out in such a way as to sever completely the auricles from the ventricles with the exception of a strip of tissue at the right side of the heart. Under these conditions it is found that beats arising spontaneously in the right auricle pass through to the ventricle and evoke ventricular beats, and, after the heart has ceased to beat spontaneously, beats excited artificially in the auricle still pass through to the ventricle and give rise to ventricular beats.

Since under these conditions the only tissue connecting the auricle to the ventricle is the strip at the right side of the heart, and the histological part of the inquiry has already shown that an anatomical connexion exists in this situation, it is impossible to avoid the conclusion that in this right lateral auriculo-ventricular junction there exists a muscular path capable of transmitting impulses and of coördinating the action of the chambers of the heart.

Further, since, as has been shown, the muscular path is completed by the interposition of a mass of nodal tissue through which the impulses must pass, it is clear that the conditions here are similar to those found in the case of the auriculo-ventricular bundle, and that the auriculo-ventricular pause may be explained on similar lines—i.e., as being due to the passage of the impulse over tissue modified histologically and physiologically with a resulting delay in conduction.

It is clear that the above considerations must exercise a considerable influence upon the nature of our explanation of cardiac action.

[The lecture was illustrated by numerous lantern slides, drawings, photographs, and preparations.]

Bristol.

A CASE OF

TUBERCULOUS DISEASE OF VERTEBRÆ

COMPLICATED BY AN EXTENSIVE ACUTE SUPPURATIVE MENINGITIS.

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AND
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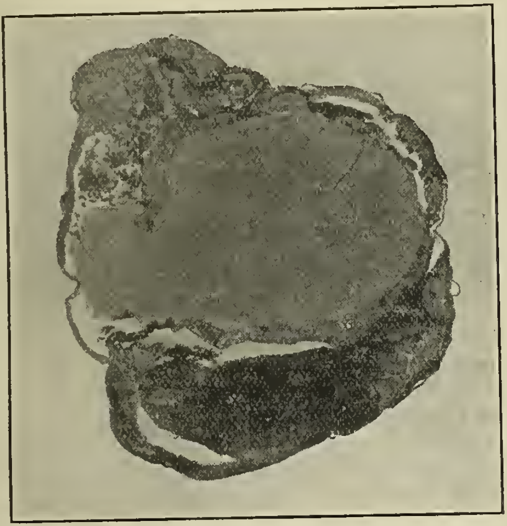
THE following case, which we are enabled to report through the kindness of Dr. Harry Rainy and Dr. Theodore Shennan, shows certain features of clinical and pathological interest.

Clinical history.—The patient, 22 years of age, was seen by one of us after he had developed symptoms of acute meningitis. We were able to elicit the following history from his relatives. In June, 1912, the patient had complained of vague pains in his back, and in consequence had consulted his private medical attendant, who examined him most carefully. Nothing definite could be made out, and he was advised to return if any further symptoms developed. This he did not do. At the end of September, 1912, he is reported to have strained his back, and at the same time an abscess burst posteriorly and developed into a running sore. He was living in the country at the time and was sent to the Edinburgh Royal Infirmary, where he was seen by one of the charge surgeons who diagnosed the condition to be a typical case of Pott's disease accompanied by a ruptured cold abscess. He was treated along the usual lines and he improved vastly, the ulcer almost completely healing up. After this he tried unsuccessfully to find work. On Dec. 3rd, 1912, he retired to bed complaining of feeling giddy and sick, with some headache. He made no complaint of pain in his back. About 3 o'clock next morning he vomited and became very restless. He appeared to be insensible to what was said to him. Three hours later he vomited several times and complained in a vague way about pain in his forehead. General irritability was very pronounced. He was sent to the Edinburgh Royal Infirmary forthwith.

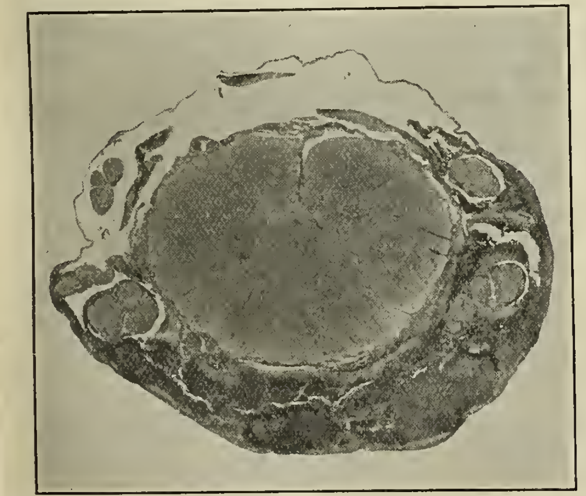
FIG. 1.



Section of spinal cord and meninges in cervical region.

Physical examination on admission.—The patient showed signs of cerebral irritation. At times he lay on his side, and then would roll from side to side. The lower limbs were drawn up. The arms were at times folded across the chest, and then he made purposeless movements in the air. His eyes were half closed and he mumbled inarticulate words. The abdomen showed no retraction and tache cérébrale was absent. Temperature, 100·5° F.; pulse, 96. He was in a semi-conscious state, but was able to swallow milk and other fluids. As far as one could test the function of the cranial nerves, there seemed to be no definite impairment of function. Motor power was impaired all over. He was extremely sensitive to stimuli of all kinds. Considerable photophobia was present. Reflexes: abdominal and epigastric absent on both sides; plantar, flexion on both sides. Achilles and knee-jerks were slightly increased. The latter were difficult to elicit because of the tightening of the hamstrings. Kernig's sign was markedly positive. No rash on the skin was visible. The heart was slightly dilated; the sounds were closed but soft. He flushed frequently, and his vaso-motor control was much impaired. Lungs: some apical impairment on both sides with harsh breath sounds. The rest of the lungs appeared normal. The tongue was dirty. Anterior abdominal muscles were rather tense, but no definite boarding could be made out. The bowels were constipated. The stomach, the liver, and the spleen were not enlarged. The urine was high coloured with urates. There was no albumin or sugar. A discharging wound was situated on the back, just below the level of the crest of the ilium, about one and a half inches from the middle line on the left side. The sinus ran in an upward and inward direction.

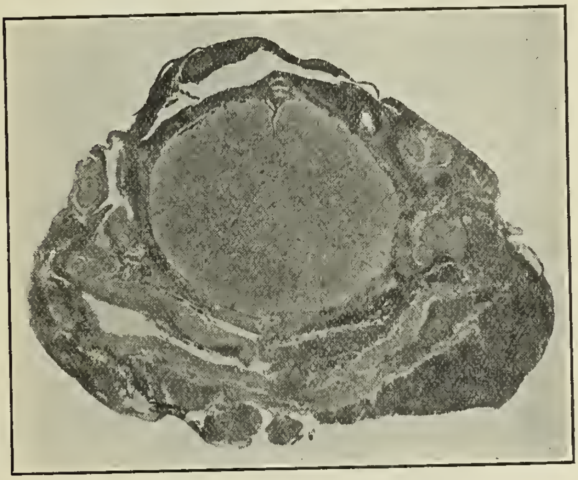
FIG. 2.



Section in lumbar region.

Treatment and progress.—The patient was placed on a water bed and given milk every four hours. Lumbar puncture was performed and thinly purulent cerebro-spinal fluid came out under tension. This was found to contain capsulated streptococci in short chains. They retained Gram stain. The patient was given urotropine gr. xv. every four hours and an analgesic powder. Dec. 5th: The patient was very restless all night and did not react to large doses of bromide and chloral. The bowels were freely moved which gave some relief. 6th: Much more pus came from the wound in the back, and along with it a good deal of clearer fluid like cerebro-spinal fluid. 7th: The patient was distinctly weaker. The pulse and temperature rose as the evening advanced. Lumbar puncture was again performed, but no fluid came away. 8th: He was much worse. There was some retraction of the abdomen Paralysis of the seventh and third nerves on the left side was noticed, and pus appeared in the conjunctival sac. The optic discs were examined frequently, and with the fleeting glance one got of them no optic neuritis could be made out.

FIG. 3.

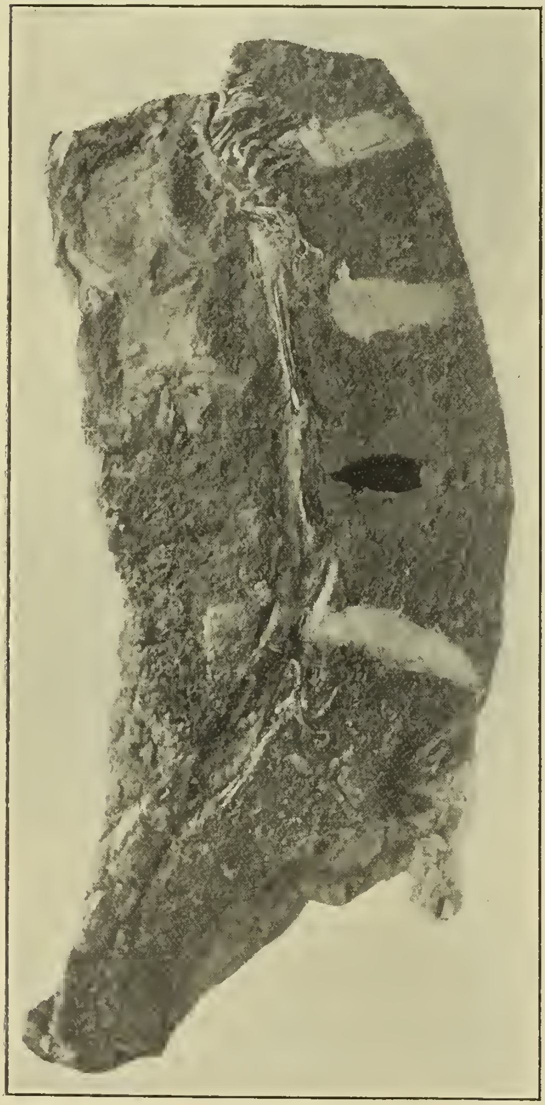


Section in dorsal region. Note the acute inflammation and very extensive exudation all around the cord in Figs. 1, 2, and 3.

Abstract from the Post-mortem Report.

The body was that of a young man poorly nourished. An ulcer measuring 3 in. by 4 in. was present over the upper part of the sacrum on the left side. Extensive adhesions were present in the abdominal cavity. Adhesions were present at both apices and at the base of the right lung. Brain: The vessels were uniformly congested and the convolutions were flattened. At the base of the brain, in the interpeduncular space and in patches over the inferior surface of the cerebellum and the temporo-sphenoidal lobes there was a thick creamy exudate. This thick yellow exudate also covered the pons, medulla, and the whole of the spinal cord. The exudate was of extraordinary thickness in the lumbar region. (See Figs. 1, 2, and 3.) In the sacral region, on either side of the spinous processes, the muscles were infiltrated with purulent material. The lower portion of the spinal column was removed and an antero-posterior section was made through the bodies of the vertebræ. A small cavity containing purulent material was found in the disc between the fourth and fifth lumbar vertebræ. This cavity communicated with the spinal canal. The bodies of the vertebræ above and below were infiltrated with yellow purulent material. Films made from the exudate in the cerebral and spinal meninges, also from the pus in the cavity in the spine, showed long chains of a capsulated diplococcus. Cultures were made from the exudate and the following organisms were isolated: (1) a Gram-positive streptococcus in comparatively long chains and showing a well-marked capsule; (2) a Gram-positive bacillus; and (3) a yeast.

FIG. 4.



Section through lower lumbar vertebræ and sacrum. Note abscess cavity and sequestrum above it in the body of the vertebræ.

Microscopic section of the brain and spinal cord showed an extensive fibrinous exudate on the surface of the pia arachnoid, in the meshes of which numerous polymorphonuclear leucocytes could be seen. Here and there masses of cocci were visible in suitably stained preparations. Sections of the affected vertebræ showed marked infiltration of the spaces between the bony trabeculæ, with fibrin and polymorphonuclear leucocytes. These showed in places a tendency to degenerate and undergo necrosis. Masses of cocci could be seen. After examining a number of preparations a small focus of undoubted tuberculous nature was found.

The pathological findings indicate that the case was originally one of tuberculosis of the vertebræ, although the disease had not advanced far. A terminal infection with streptococcus mucosus occurred. The appearances indicate that this originated in one of the affected vertebræ or in the intervertebral disc, the source of infection being probably the ulcer on the back. The organism isolated corresponded to that described by Schottmüller, Neumann, and Lingelsheim, and called "streptococcus mucosus." The exudate in the meninges was unusual from its extraordinary thickness.

THE SURGICAL TREATMENT OF STREPTOCOCCIC ARTHRITIS.

BY JOHN O'CONOR, M.A., M.D. T.C.D.,
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SOME seventeen years ago I first invited attention to the utility of surgical intervention in many cases which present all the characteristic clinical symptoms of "rheumatic fever," but which do not respond to treatment by salicylic acid or its derivatives.[1] Five years later I amplified my views on the subject and published a series of cases showing the value of incision with irrigation and drainage of infected joints.[2]

During the past ten years I have performed 214 arthrotomies, the majority being for recalcitrant cases of acute "rheumatic" arthritis. As it would be superfluous to occupy space with notes of scores of individual cases, I will merely state that the mortality has been *nil*, that there has not been a case of septic infection, that in not a single instance has a valvular lesion developed after operation, and that the treatment has afforded uniformly good results. It may be of some interest if I restate the creed on which I based my treatment.

Acute rheumatism is primarily a joint affection, due to some pathogenic germ (streptococcus) conveyed by the blood from an infected tonsil, decayed teeth, or some lesion in the intestinal mucous membrane. The joint invasion is promptly followed by a form of acute arthritis with general toxæmia, and the infected joints serve as incubators, where the poison is elaborated and poured into the circulation and thus conveyed to other articulations and to the cardiac valves. In some cases the joints retain the virus in a latent condition until some chill or other cause rouses it into activity. Holding such views as to causation, it naturally followed that I should suggest that the term acute infective arthritis be substituted for rheumatic fever, &c., and that the names gonorrhœal,[3] pyæmic, tuberculous, syphilitic, &c., be retained in order to differentiate the infection peculiar to each.

I wish once more to draw attention to a form of infective cellulitis which not infrequently appears to be the dominant manifestation of the disease about ankle-joints and wrist-joints, sometimes associated with apparent arthritis of these joints and sometimes not. Owing to the almost constant existence of this condition in cases of severe multiple infection, I considered it necessary to employ the comprehensive pathological title[4] "acute infective arthritis and cellulitis." I now think it opportune to conform with recent bacteriological teaching and adopt the simple and definite term streptococcic arthritis.

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[1] Acute Rheumatic Arthritis, Glasgow Medical Journal, October, 1897.

[2] 150 Arthrotomies, THE LANCET, April 12th, 1902, p. 1061.

[3] Surgical Treatment of Gonorrhœal Arthritis, THE LANCET, Dec. 9th, 1899, p. 1585.

As to treatment,[5] I make it a rule to operate on cases which do not promptly yield to medical treatment (sod. salicyl. ʒss., sod. bicarb. ʒi., three hourly; salines, milk diet, woollen clothing, &c.). All infected joints are opened, flaky turbid lymph is evacuated, free irrigation with warm oxygen water, drainage-tubes inserted and retained *in situ* for three days. Multiple incisions are made into areas of periarticular cellulitis and hot mercurial fomentations applied. Splints are employed for immobilisation purposes for from seven to ten days, at the end of which the patient is requested to commence graduated active moment. When wounds are healed gentle massage is prescribed.

: Buenos Aires.

THE TECHNIQUE OF ABDERHALDEN'S SERUM REACTION.

By W. E. BULLOCK, M.D. EDIN., B.Sc. LOND.,
ASSISTANT, IMPERIAL CANCER RESEARCH FUND.

IN November of last year a series of experiments were commenced with the object of determining the value of Abderhalden's serum reaction—dialysis method—in the diagnosis of cancer. The results obtained by following exactly Abderhalden's technique were inconclusive, as the examples given later show. The principles of the reaction have been stated and the chief details of the dialysis method described so often that it is unnecessary here to do more than emphasise certain points in so far as they bear upon the modifications in the method to be suggested in this paper.

Ninhydrin, the reagent used to test for the decomposition products of proteins, reacts with numerous other substances, as was shown by Neuberg.[1] Dextrose is the most important of these substances owing to its presence in blood serum. When 0·2 c.c. of a 1 per cent. solution of ninhydrin is boiled for a minute with a dilute solution of glucose in distilled water a transitory red colour is obtained. If normal saline be substituted for the distilled water the colour obtained is more or less permanent. The same reaction takes place with other sugars—e.g., galactose, maltose, &c. This formation of colour with sugars probably explains the various reddish shades of purple often obtained in testing dialysates in experiments with blood serum. Abderhalden's explanation[2] of these colours is that either the experiment has been carelessly carried out or the blood contained acids or alkalies.

In carrying out a test 0·2 c.c. of ninhydrin solution is added to 10 c.c. of a solution of albumin, peptone, or amino-acids, and the mixture boiled for one minute. In order to secure regular boiling and to prevent "bumping" Abderhalden recommends "boiling sticks" made of wood and specially prepared; the small pieces of unglazed porcelain or broken glass ordinarily used by chemists are equally efficient. An extraordinary stress has been laid on "boiling for exactly one minute." Whilst it is obviously necessary to boil the tubes an equal length of time—and experience has shown that one minute's boiling is sufficient—the importance attached to this rule naturally suggests that a method by which the tubes are heated together would be preferable to that of boiling each tube separately in the Bunsen flame. Such a method has been adopted in the apparatus devised for the purpose by Abderhalden,[3] who nevertheless uses it only for testing tubes in preliminary experiments with dialysing sacs and not for actual serum experiments. A simple and satisfactory method for solutions of leucin is to place the test-tubes containing the dialysates to be tested in boiling water and to remove them again in nine minutes. In order to reduce the amount of evaporation the tubes may be lightly corked after they have been two minutes in the bath.

In comparing the results of the ninhydrin tests it is sometimes difficult to judge small differences of tint when the colours are compared in ordinary test-tubes. This difficulty has been overcome by the use of tubes 23 cm. long by 9 mm. bore, made of colourless glass. The boiling with ninhydrin is carried out in a test-tube, and the liquid is then poured through a small funnel into one of the long narrow tubes. A comparison of colour is made by holding the tubes on a sheet of white paper in a good light and looking directly on the column of liquid. Small differences are easily detected in this way. These tubes are also well adapted for a comparatively rough but very useful method of obtaining an idea of the quantitative differences in colour. 1 c.c. of the liquid with the weakest reaction to ninhydrin is placed in one of the long tubes and distilled water added until only the faintest violet colour is visible when the column of fluid is looked at through the open end of the tube. As a rule—at least when 0·5 c.c. of blood serum is used as the minimum dose in an experiment—it is not necessary to add any water at all. This tube is now the standard colour and volume. A cubic centimetre of liquid is taken from each of the ninhydrin tests and diluted until a standard volume is of a standard colour. The amount of water added is a measure of the depth of colour.

Examples of Results obtained by using Abderhalden's Technique.

1. Sera from rats bearing a tumour (rat tumour 9) and from normal rats were obtained after starving the animals for 18 hours. The sera were clear and free of hæmoglobin and were used immediately.

Serum.	Substrate.	Ninhydrin test.	Biuret test.
1·5 c.c. normal.	1 g. (approximately) rat tumour 9.	+	–
1·5 c.c. tumour.	,, ,,	+	–

2. The experiment was repeated.

Serum.	Substrate.	Ninhydrin test.	Biuret test.
1·5 c.c. tumour.	Rat tumour 9.	++	–
1·5 c.c. ,,	,,	+++	–
1·5 c.c. normal.	,,	++	–
1·5 c.c. tumour.	Nil.	–	–
1·5 c.c. normal.	,,	+	–

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[4] Annals of Surgery, April, 1899.

[5] Surgical Treatment of Rheumatic Fever, THE LANCET, Jan. 24th, 1903, p. 223.

[1] Biochemische Zeitschrift, 56, 500, 1913.

[2] Abwehrfermente, fourth edition, p. 275.

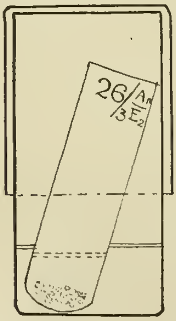
[3] Münchener Medizinische Wochenschrift, No. 5, p. 233, 1914; and Abwehrfermente, fourth edition, p. 232.

3. Rabbit placenta was prepared as substrate; a pregnant rabbit and a buck were starved for 18 hours and then bled from the ear vein. The sera obtained were clear and free of hæmoglobin.

Serum.	Substrate.	Ninhydrin test.	Sulpho-salicylic acid test.
0·5 c.c from doe.	Rabbit placenta.	–	–
1·0 c.c. ,,	,,	–	–
1·5 c.c. ,,	,,	++	–
2·0 c.c. ,,	,,	(+)	–
0·5 c.c. ,,	Nil.	–	–
1·0 c.c. ,,	,,	(+)	–
1·5 c.c. ,,	,,	+	–
2·0 c.c. ,,	,,	+	–
0·5 c.c. from buck.	Rabbit placenta.	–	–
1·0 c.c. ,,	,,	–	–
1·5 c.c. ,,	,,	++	–
2·0 c.c. ,,	,,	+++	–

There was not sufficient serum from the buck to set up the control of serum alone.

It is obviously impossible to draw any conclusion from such results. The most striking point is the irregularity of the depth of the ninhydrin test of the dialysates. In the last experiment quoted, for example, the dialysate from the test, 2 c.c. of serum from pregnant rabbit plus rabbit placenta, contains less ninhydrin-reacting substances than the dialysate of the preceding test with 1·5 c.c. of serum. Abderhalden's explanation of such results[4] is that the digestion of the substrate has proceeded further (more amino-acids produced) in the test in which 1·5 c.c. of serum was employed than in the other case. The explanation is not satisfactory, however, since the conditions under which the tests were made were similar. The following experiment shows that the dialysing tubes were the source of error. Forty of Schleicher and Schüll's dialysis tubes, No. 579 A, 16 mm. by 50 mm., were well soaked in water and then tested with 2·5 c.c. of a 5 per cent. solution of egg-white. The tubes which permitted egg-white to pass were discarded; the remaining impermeable tubes were well washed with water, sterilised in the autoclave, and then tested with 2·5 c.c. of a 5 per cent. solution of Witte's peptone. The sacs were separated into groups according to the depth of the ninhydrin reaction. In my experience with about 100 of these sacs the largest group of equal permeability out of 40 consists of 5 or 6. The largest group of sacs thus obtained were well washed and sterilised in the autoclave and again tested with peptone; the ninhydrin reactions were strikingly unequal.



Elongated Petri dish with dialysing sac *in situ*.

This alteration in the permeability with sterilisation renders the sacs practically useless, and it was therefore decided to attempt to prepare dialysing tubes of collodion. At the same time the Erlenmeyer flasks recommended by Abderhalden were replaced by elongated Petri dishes of suitable size. (See Figure.) For the dialysing sacs described below the inner cylinder measures 4 cm. by 8 cm., the outer 4·5 cm. by 5 cm. These cylinders are washed separately, put together, and wrapped in paper, and then sterilised in hot air.

Preparation of dialysing sacs.—By numerous experiments with solutions of varying concentrations of pyroxylinum in alcohol and ether of varying proportions it was found that sacs of almost any degree of permeability could be prepared. For the purposes of the Abderhalden reaction the following concentration of collodion is required: gun cotton, 2·6; absolute alcohol, 33 c.c.: and ether, 67 c.c. The gun cotton is dried to constant weight by exposure to air; the alcohol is poured over it, contained in a stoppered bottle. After 24 hours the ether is added, and the clear solution obtained is ready for use.

Schleicher and Schüll's extraction thimbles, No. 603, 22 mm. by 80 mm., are taken and shortened by a centimetre. A number and the number of times the thimble is to be immersed in collodion and the relative proportions of ether and alcohol are written with India ink on each tube, thus, for sac No. 26:— $26/_{3}\frac{A_{1}.}{E_{2}}$ By this means a record of the behaviour of each sac is easily kept.

The sacs are now boiled in a mixture of equal parts of alcohol and ether in order to displace and disperse the air from the interstices of the paper. They are then filled and covered with collodion of the composition given above. After the lapse of an hour the tubes are taken out of the collodion, allowed to become almost dry, and then replaced for ten minutes. This is repeated, and the tubes when almost dry are placed in distilled water. By these processes the paper of each thimble becomes impregnated with collodion, and six layers (three inside and three outside) of the same material are formed.

It is important to remember that the concentration of the collodion is rapidly altered by evaporation of ether, and to a less extent of alcohol. The collodion should therefore be freshly prepared and a fair number of sacs (say 16) made at one and the same time. This is easily done if sufficient collodion is prepared to make 25. The thimbles are boiled in the alcohol-ether mixture contained in a saucepan; the fluid is poured off, and the thimbles are then covered with the collodion. The lid of the saucepan is fixed tightly to reduce evaporation.

The freshly made sacs are quite impermeable to solutions of egg-white, and are easily permeable to a 2 per cent. solution of Witte's peptone or to silk-peptone of a much lower concentration. After being used several times—and consequently sterilised several times—the collodion tubes become more permeable. It is now possible to distinguish between minute amounts of Witte's peptone, as the following experiment illustrates, and at the same time the sacs are impermeable to albumin.

The delicacy of ninhydrin as a reagent for Witte's peptone is rather better than 1 in 1000—i.e., 0·01 grm. in 10 c.c. To 20 c.c. of water 0·22 grm. of Witte's peptone was added and 2 c.c. of the solution placed in each of half a dozen collodion sacs and the sacs dialysed for 18 hours against 20 c.c. of distilled water; the dialysates give a faint and equal reaction with ninhydrin. 0·26 grm. of Witte's peptone was dissolved in 20 c.c. of water, and in each of six collodion sacs 2 c.c. of the solution was placed and dialysed for 18 hours against 20 c.c. of water. The dialysates were tested with ninhydrin and gave an equal result of a distinctly deeper tint than the dialysates from the first set of tubes. It is thus possible to distinguish between 0·2 grm. and 0·24 grm.

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[4] Abwehrfermente, English translation, pp. 200–201.

(approximately) each contained in 2 c.c. of water. In other words, the degree of permeability of the collodion sacs to peptone corresponds at least to the delicacy of the ninhydrin reaction with the same substance. And since the substances to be detected in an actual experiment with blood serum are in my experience invariably amino-acids, the delicacy of these sacs is even greater than the experiments above indicate.

When the sacs have been in use for some time (six to eight weeks) and have been sterilised in the autoclave about 20 times they become permeable to albumin, and are then useless for the purposes of serum tests. There is thus a gradual increase in permeability, and it is only during the middle part of the "life" of a sac that the requirements of the Abderhalden reaction are complied with ideally—viz., (*a*) impermeability to serum albumin and globulin; (*b*) easy permeability to Witte's peptone; and (*c*) unalterability with sterilisation. Since, however, in an actual experiment amino-acids are always tested for—peptones in my experience being never found in the dialysate—the early life of a sac is perfectly satisfactory. But it is obvious that in any given experiment the sacs employed should have been made together at the same time, and should have been autoclaved an equal number of times.

The results obtained with such tubes will be published in a subsequent paper, but it may be pointed out here that by the use of graduated doses of serum and by invariably testing the dialysate with sulpho-salicylic acid a constant record of the permeability of the sacs is kept. Since sulpho-salicylic acid detects 1 part of albumin in 40,000 of water, it is clear that any alteration in the behaviour of the sac towards albumin is indicated at the earliest possible moment and before quantities recognisable with ninhydrin can pass. And, further, by the use of graduated doses of serum any alteration in the permeability of the sacs to amino-acids would be indicated by discordancy in the results of the ninhydrin tests.

THE GEOGRAPHICAL DISTRIBUTION OF APPENDICITIS.[1]

BY R. W. MURRAY, F.R.C.S. ENG.,

HONORARY SURGEON, DAVID LEWIS NORTHERN HOSPITAL, LIVERPOOL.

THERE can be no doubt that inflammation of the vermiform appendix is met with far more frequently now than was the case 20 years ago. Not only so, but from my own experience I am convinced that the type of the disease has altered. When treating appendicitis 20 years ago my general practice was to apply fomentations and attend to the bowels. I very seldom had occasion to operate, and when I did it was merely with the view of opening an abscess. The immediate and after results of this treatment were satisfactory. To-day, owing to the more virulent type of the disease, such treatment would surely end in disaster, and in common with most surgeons (I wish I could say all surgeons) I arrange for an operation as soon as the diagnosis has been established. This line of action has been forced upon surgeons owing to the rapidity with which gangrene of the appendix occurs, and the frequency with which concretions are found within its lumen.

The Etiology of Appendicitis.

Why is it that appendicitis has increased in frequency and altered in type? A very natural and interesting question, but by no means an easy one to give a satisfactory answer to. This communication is an endeavour to find an answer, and I have accumulated certain evidence which I believe may help in solving the riddle. However, before adducing my evidence I wish to draw particular attention to a paper which appeared in the *Liverpool Medico-Chirurgical Journal* in 1910. This paper, entitled "The Etiology of Appendicitis," was written by that brilliant young physician, the late Dr. O. T. Williams, and to my mind is by far the most important pronouncement on this subject which has appeared in recent years. In a previous communication Dr. Williams had shown that intestinal sand, appendix concretions, and the large bodies resembling gall-stones sometimes found in the intestines are allied in chemical constitution and formed of fat compounds. In the paper to which I refer he says:—

> This contribution records further observations on the relation of abnormal fat processes to the etiology of appendicitis, and shows that similar changes occur *in the wall of the appendix itself*. ...... Concretions do not occur in all cases of appendicitis, but the following investigation into the nature of the changes taking place in the appendix shows that the process by which they are formed may go on in the wall of the appendix and give rise to morbid conditions which allow of early invasion by micro-organisms, and thus to the acute and chronic forms of appendicitis. These changes are the formation of calcium soaps in the mucosa and submucosa of the appendix. These soaps, normally expelled into the lumen of the appendix and then into the cæcum, in cases of appendicitis block up the lumen of the glands or (as in many of the specimens obtained) form almost a complete ring in the submucosa. ...... The changes cannot be due to involution, as they are seen in specimens obtained from cases occurring in children. ...... The important question consequently arises whether this change is the cause of the disease, or whether there is some underlying cause which produces these changes and the disease. From what we know of the formation of these calcium soaps it is a very slow process, and therefore must have commenced long before the attack of acute disease. It may therefore be presumed that these fat changes go on, produce the altered condition of the mucous membrane, or in some instances form an impermeable barrier in the submucosa, cutting off the nutritive supply to the already altered mucous membrane. The invasion by organisms is thus rendered much easier. ...... Sections of appendices stained by the methods used by Koltz and Lorrain Smith show the colour reactions from which the nature of the chemical changes in the wall has been deduced. The specimens were obtained from appendices removed by operation and placed immediately in formol. ...... The nature of the fats in the food determines to some extent the nature of the fats in the tissues. It would therefore seem that as these abnormal processes are set up by saturated fatty compounds (palmitic and stearic) and not by unsaturated fatty compounds (oleic), the nature of the fat in the diet might have some influence in their production. This is made still more likely when we recognise that the absorbability of these two forms of fat is so different.

In order to ascertain whether an excess of saturated fat (as in beef or mutton) in the diet is more liable to produce the disease than unsaturated fat (as in olive oil) Dr. Williams wrote to His Majesty's representatives in all countries having a population of over 2,000,000, and "the statistics showed an increasing incidence in appendicitis in those countries where much saturated fat is consumed." I have quoted at some length from the paper of Dr. Williams, not merely on account of the interest and importance of his remarks, but also because they lead up to the clinical facts I have gathered together, which are complementary to his views.

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[1] A paper read before the Liverpool Medical Institution.

Results of Inquiry into its Geographical Distribution.

So far as the geographical distribution of appendicitis is concerned the information obtained by Dr. Williams referred, for the most part, to the inhabitants of large towns. I thought it would be interesting to extend the inquiry, so a few months ago I wrote to medical men practising in more remote parts of the world, asking whether they commonly met with cases of appendicitis, and if it occurred among the natives in that district. One weak point regarding evidence so obtained is that practitioners in these distant regions may not have sufficient clinical knowledge to make their diagnosis of appendicitis sufficiently reliable. In order, as far as possible, to obviate this error I made a careful selection of the men I wrote to, most of whom hold hospital appointments and have been in practice in that district for some years. Although I have already acknowledged their letters, I must take this opportunity of once again thanking these gentlemen for so kindly furnishing me with most interesting and useful information.

I now propose to take you for an appendicular trip round the world. The following are the chief points contained in the letters I have received:—

Nyassaland, Central Africa.

1. I have never seen appendicitis amongst the natives.
2. I asked Dr. Caverhill, of the Blantyre Mission, who has charge of the native hospitals and has been in this country ten years, and he authorises me to state that in 5000 in-patients he has never seen a case of appendicitis in a native.
3. I have met with four cases here in Europeans: two yielded to palliative treatment, two were operated upon.

A. H. Barclay.

Fez, Morocco.

Among the natives in Morocco appendicitis is a very rare disease. During my 16 years in the interior I can recall only two cases. I have seen several cases among Europeans, but my work lay chiefly among the natives.

E. S. Verdon.

English Mission Hospital, Jerusalem.

Amongst the Jews here we see appendicitis less frequently than at home. I have only attended 12 cases since 1909. A medical man here of my acquaintance has during the past four years seen only one case of appendicitis among the natives proper. Jewish living is rather more civilised than the native living.

C. H. Corbett.

The Victoria Hospital, Damascus.

Appendicitis is fairly common in these regions. As you can readily understand, many such cases are overlooked or misunderstood. The medical men in these outlying districts are not always capable of diagnosing them. During the past nine months I have operated upon half-a-dozen cases.

Frank J. Mackinnon.

I regret that Dr. Mackinnon, who has been resident in Damascus for over 20 years, did not state whether this disease is more commonly met with now than when he first came to the city, and whether it was more prevalent in one nationality than another in this ancient and cosmopolitan city, for Sir Frederick Treves tells us that here are to be seen customs and details of living which appear to the traveller now just as they did four centuries ago when the Caliphs reigned.

In *India* appendicitis is commonly met with in the large cities, but there is a general consensus of opinion among medical men practising in India that this disease does not occur among the natives in the outlying districts.

Membakut, British North Borneo.

In two years' residence on the West Coast of Borneo I only remember seeing one case of appendicitis, and that was in a coolie, an indentured Chinaman. As regards the occurrence of this disease among natives, my experience is of small value because native labour is very little used on estates and I rarely have a native as a patient.

R. S. Roper.

Chung King, Western China.

In all my 16 years in China—most of it spent in West China—I have only seen one case of appendicitis in a Chinese, so am forced to the conclusion that the disease is very rare and hardly exists in the Chinese.

I beg to offer the following explanation why in my opinion the disease is so rare in the Chinese. Appendicitis is a rare complaint because a Chinaman eats on an average only two meals a day, but takes a good square meal of four or more bowlfuls of beautifully cooked rice and vegetables (meat or fish very seldom), and he sits down and takes a long time over his meal. The chief meat in China is pork, and the average Chinese cannot afford to buy it. The Chinese have beautiful white teeth, so that in addition to the time he takes over his meals he always masticates his food well.

Richard Wolfendale.

Pakhoi, South China.

I have not seen a single case of appendicitis during the 10 years I have been in China. I think you will find that this applies to the whole of South China.

H. Gordon Thompson.

Moukden, Manchuria.

None of us have seen a case of appendicitis amongst the Chinese here. I am wrong—one of us saw one case which, however, was not operated upon. One of the Pekin men told me that cases do occur amongst the Chinese there, so we may hope still!

R. Howard Mole.

Territory of Papua (New Guinea).

I have been in Papua for nearly ten years, living mostly in close contact with the natives, most of the time either as medical officer or resident magistrate, and have been struck by the rarity of appendicitis. While in this country I have seen a very mild attack in a European, one rapidly fatal case in a Samoan, and one typical attack followed by recovery in a native Papuan cook boy of my own. Beyond these three I have never seen a suspicious case, and it is remarkable that the only Papuan case was one where the patient had practically taken to European food and mode of living.

W. M. Strong,
Acting Chief Medical Officer.

Yarloop, Western Australia.

In answer to your question about appendicitis, I do not often see it here. In our hospital in-patients average 120 a year, and only 2 per cent. are cases of appendicitis. I believe it is very prevalent in the large towns.

S. C. Moore.

British Solomon Islands.

During the past three years I have never met with a case of appendicitis amongst the natives or heard of one. Among the white population I heard of a man who was taken suddenly ill, shipped off to Sydney, and successfully operated upon for appendicitis.

R. H. S. Marshall.

Trinidad, B.W.I.

We have had a good many cases of appendicitis here during the last few years. They have occurred, however, chiefly among those of European birth or descent. Personally I have not met with any cases among the coloured races. The population of this island is about 330,000, and, roughly speaking, the whites would number about 4000.

William S. Cleaver.

Kingston, Jamaica.

I send you a short catalogue of the cases dealt with at the hospital here, from which you will gather that appendicitis is not common. We have formed the opinion that race is not the factor to be considered, as the condition occurs among those who conform to the standard of European life, and is very rare among the natives who live a more or less primitive life.

J. A. Allwood.

With regard to the *Southern States of America* Dr. Howard Kelly, in his work "The Vermiform Appendix," says:—

> The negro race seems to be comparatively exempt from this affection. In order to obtain some information upon this point I wrote to several surgeons practising in Southern cities having a large proportion of negro inhabitants. The replies were unanimous in regard to the rarity of the disease in this race. ...... Dr. L. L. Hill, of Montgomery, Ala. (in the "black belt") with a coloured population of 9000, could collect the histories of only four cases that had occurred among them, and found that the physician who had been consultant for a number of years at Booker Washington's school, where there are about 1400 coloured students, did not remember ever to have seen a case there; at the Alabama Polytechnic Institute, however, 20 miles distant, where there are 400 boys, there has been an annual average of eight cases. At the former school the diet is simple and the same for all, but at the latter the cadets live at different boarding houses in the town.
>
> There are 800 negro prisoners at one of the Alabama coal mines, and the physician in charge states that appendicitis is unknown among them. The explanation given for the relative exemption of the negro is that their diet is simple, they take a great deal of outdoor exercise, and they are free from digestive disturbances.

In order to learn whether prisoners in this country, living upon a simple diet and taking adequate out-of-door exercise, are subject to attacks of appendicitis, I wrote to the medical officer in charge of Portland Prison. Dr. Watson kindly furnished me with the following particulars:—

> *H.M. Prison, Portland.*
>
> During the past ten years one case of appendicitis is known to have occurred. I do not think a well-marked case of appendicitis could have escaped detection during this period. The average daily population during the year ending 31st March, 1913, was 696.
>
> W. R. K. WATSON, Medical Officer.

Appendicitis in Animals.

From the prisoners in Portland Prison I went one step lower and wrote to Mr. Plimmer, asking whether appendicitis was met with among wild animals during their captivity in the Zoological Gardens. Mr. Plimmer very kindly looked up the records of the post-mortem examinations and wrote me as follows:—

> *Zoological Society of London, Regent's Park.*
>
> I have gone through the books myself, and enclose an accurate statement of appendicitis here. It is only in the higher apes that we can speak strictly of appendicitis, the other cases are inflammations of the end of the cæcum, which is often pointed, and of similar histological structure to the appendix in apes. H. G. PLIMMER, F.R.S.

(18 cases in 5 years, 1908–1912.)

Appendicitis proper:—Chimpanzee. Agile Gibbon. Horlock Gibbon.

Inflammations of Cæcum or Cæca in Animals not possessing an Appendix:—

Guerron	1	Wallaby	1
Lemur	2	Peccary	1
Suricate	1	Phalanger...	1
Wild cat	1	Marmoset	1
Cavy	1	Hyena	1
Leopard	3	Snow leopard	1

The Influence of Diet and Other Factors.

Reviewing the facts I have collected I think it must be admitted they go a long way to prove that diet is a very important factor, probably *the* important factor, in the etiology of appendicitis. As this disease prevails amongst meat-eating nations it is further probable that the view of the late Dr. Williams is the correct one—namely, that the most important constituents in our food *predisposing* to appendicitis are the saturated fats, such as are contained in beef and mutton. Though it is true that man is an omnivorous animal, still some of us are possibly more allied to the herbivora than to the carnivora, both as regards idiosyncrasy of tissue and of temperament. However that may be, much of the evidence I have adduced, more especially the experience in appendicitis at the Booker Washington school and at the Alabama Institute, clearly indicates that a change from a simple to a more complicated diet is attended with grave dangers. What actual organism leads the attacking force I do not know, but the bacillus coli group are invariably in at the death.

Mr. Plimmer's observations at the London Zoological Gardens strike me as being a most valuable and interesting contribution to my inquiries, though it must be remembered that altogether, apart from the question of diet, these animals have their whole mode of life radically changed. It is impossible to learn whether wild animals living in their natural surroundings ever suffer from appendicitis, still it is reasonable to suppose they do not. However that may be, it is clear that animals in captivity, owing to the artificial conditions under which they live, do suffer and die from this disease. Those of us who have the privilege of living in large civilised communities, owing to the artificial conditions under which we live, are to a very great extent "animals in captivity," and we, too, suffer and die from this disease.

When we remember that modern social requirements demand that our food shall be such as may lead to an accumulation of calcium soaps in the wall of the vermiform appendix, thus seriously interfering with the circulation through its blood-vessels and impairing its glandular excretion, and further that this cæcal appendage is so placed as to have poured into it the most poisonous of the intestinal flora, the wonder is that any of us escape from attacks of appendicitis.

At the same time, there can be no doubt that, apart from the question of diet, other contributory causes have to be considered. We live in an age of luxury, and taking it all round the pace at which we live has increased greatly of recent years, and I believe the increased frequency of appendicitis and of other gastro-intestinal troubles is the consequence, for our intestinal tract is called upon to do work which is not congenial to it, and naturally rebels. Irregular meals, the "quick lunch," and imperfect teeth all play their part, and in spite of the blessings of golf the general want of physical exercise is very noticeable. For the most part we watch others play games. Nowadays a man has to be in so many different places at the same moment that he has not time to walk—he must be driven; and the motor has come to stay.

I believe the reasons I have mentioned account for the increased frequency with which appendicitis is met with, and the increased virulence of the poison is, I believe, due to the fact that our food is adulterated to an extent unheard of in days gone by. This is an age of patent foods, food preservatives, tinned meats, and frozen mutton, and from early infancy we have over-burdened our digestive tract with chemical and bacteriological poisons it is unable to cope with. All these things follow in the wake of civilisation and the geographical distribution of appendicitis can be determined with a fair degree of accuracy. With a map of the world before one, if a red cross is made in localities where appendicitis prevails it will be seen that all the crosses are placed on civilised communities.

It really would appear that our gastro-intestinal arrangements are not at all suitable for twentieth-century requirements, and a vermiform appendix altogether out of date. As it is hopeless to expect the vermiform appendix to disappear in response to its altered environment, the only way to ensure intestinal peace, so far as it is concerned, is either to remove it during infancy, which would be quite wrong, or to alter very materially our habits of life, which would be quite right. Otherwise this worm-like remnant of a greater cæcum, destined to continue as a companion of the human race, will surely make its presence felt more frequently in the future than it has done in the past. It may even do so in that far, far distant future, "when some traveller from New Zealand shall, in the midst of a vast solitude, take his stand on a broken arch of London Bridge to sketch the ruins of St. Paul's."

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

THE CAUSATION OF STRICTURE FOLLOWING SUPRAPUBIC PROSTATECTOMY.

BY H. W. MILLS, M.R.C.S. ENG., L.R.C.P. LOND.

IT has been stated[1] by one of the greatest authorities on the subject that post-operative stricture does not occur after complete suprapubic prostatectomy, or, to be more technically exact, after subtotal suprapubic prostatectomy, for it is now universally recognised that the surgical capsule of the prostate itself consists of prostatic tissue.[2] Such a statement, although doubtless generally speaking correct, is too sweeping; there are exceptions, and these notes have been written to draw attention to the most frequent cause of such exceptions.

It is a well-known fact, a recognised surgical axiom, that if the mucous membrane be removed from any of the circular orifices of the body occlusion results, and this fact has been taken advantage of to base thereon, for example, Ochsner's operation for radical cure of femoral hernia. Now occasionally—rarely, it is admitted, but still occasionally—on sweeping the finger across the apex of the prostate in the final stage of its enucleation, the mucous membrane of the urethra carries away from a half to three-quarters of an inch anterior to the said apex, with the result that a portion of the membranous urethra is denuded of mucous membrane; unless this is noticed and special measures adopted to prevent such unfortunate results, occlusion of the urethra obtains, and the mucous membrane of the bladder heals completely and smoothly over the original site of the internal meatus.

CASE 1.—The patient was a man aged 67. Operation was performed on Sept. 17th, 1911; it was easy, enucleation lasting four minutes; practically no bleeding; two calculi, one very rough and tuberculated, about the size of marbles; bladder clean; skin wound healed by first intention; about an inch of mucous membrane came away anterior to the apex of the prostate. Sept. 29th: No urine passed per urethram; digital examination of interior of bladder revealed the fact that internal meatus was closed; No. 27 steel sound forced through on to finger; immediately thereafter urine was passed per urethram, and through and through irrigation was possible; sounds were passed daily thereafter, which caused some pain and bleeding for several days; subsequently Kollman's four-bladed prostatic dilator was used regularly, screwed up to 40, and ultimately complete recovery without any stricture occurred. The cure has been permanent.

CASE 2.—The patient, a man aged 73, was sent to me for operation. He had led a catheter life for many years—15 he stated; he denied any venereal history, but admitted alcoholic excesses for 30 years; he had a copious foul purulent urethral discharge, and a tight phimosis, the prepuce being greatly swollen and indurated—so much so as to suggest malignancy; he declined preparatory treatment, and insisted on immediate operation; this was accordingly performed on July 16th, 1910. The operation was simple and rapid, but about half an inch of mucous membrane carried away anterior to the apex of the prostate; recovery, except for threatened delirium tremens, was rapid. I was compelled to leave town two days after the operation and did not return until July 28th, on which day, finding that no urine had passed per urethram, and that through and through irrigation was impossible, as also was the passage of No. 27 steel sound, I made a digital examination of the interior of the bladder, and found that the mucous membrane had healed smoothly over the base of the bladder, and that no opening existed there. A sound was forced through on to the finger, and the opening kept patent daily with the Kollman dilator screwed up to 40. Circumcision had been done at the time of the prostatectomy, but the discharge still obtaining a microscopic examination of the latter was made which revealed gonococci. The explanation which followed revealed the fact that irregular coitus had obtained for two weeks before he came in to see me. This old man had been unfortunate enough to contract his first and only attack of gonorrhœa at the age of 73. An obstinate stricture resulted, requiring constant treatment for many months.

The treatment, of course, is to keep the parts well dilated, until such time as the raw surface is completely covered with mucous membrane, and for a considerable period thereafter insist on the periodical passage of large-size metal sounds; ultimately all is well, for the pathology of stricture, other than traumatic, presupposes the gradual cicatricial contraction of a ring of previously chronically inflamed extra-urethral connective tissue, which in these cases does not obtain.

Case 1 is now quite well with no stricture at all. Case 2 has a modified stricture, though not enough to trouble him; but here the Neisserian infection introduced the factor which is the usual pathological precursor to stricture, so that the present condition must not altogether be laid at the door of the accident, for the purpose of drawing attention to which these notes were written. 2·29 per cent. represents in my personal practice the frequency of this occurrence. I have also observed one instance of stricture in a case in which the urethra was so tough that I could not tear it through with my finger but was compelled to cut it with scissors; the prostate was of the hard scirrhous type.

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[1] Freyer: Enlargement of the Prostate, third edition, p. 77. "In not a single instance has there been any contraction to interfere with the free flow of urine."

[2] Wilson and McGrath: The Prostate Gland, Journal of the American Medical Association, vol. lvii., No. 20, p. 1601, quoting Tandler and Zuckerkandl: "The surgical capsule is composed of prostatic tissue."

San Bernardino, California, U.S.A.

THE USE OF LIQUID PARAFFIN IN ENTERIC FEVER WITH CONSTIPATION.

BY LLEWELLYN P. PHILLIPS, M.A., M.D.CANTAB., F.R.C.P.LOND., F.R.C.S.ENG.,
PROFESSOR OF MEDICINE IN THE EGYPTIAN GOVERNMENT MEDICAL SCHOOL, AND SENIOR PHYSICIAN TO KASR-EL-AINI HOSPITAL, CAIRO.

IN Egypt it is the exception to see cases of typhoid fever with diarrhœa. Constipation is the rule, and this constipation is often very difficult to manage. I used to treat it by daily enemata, preceded if necessary by a preliminary injection of olive oil; in most cases this was successful, but occasionally the result was not satisfactory. (The enemata are given out of a douche can.) During convalescence I used to commence treating constipation by using cascara and maltine as an aperient. On one occasion during an attack of typhoid fever with mania I had to give olive oil and castor oil in equal parts by mouth and the patient did well. I prefer, however, to leave such aperients alone during the acute stage.

In 1912 one of my patients was so constipated during the beginning of her convalescence that I resolved to use paraffin, and I did so with excellent effect; after that I commenced to use it throughout the illness, and such now is my routine. I have found that in cases in which during former acute illnesses enemata have acted with the greatest difficulty, paraffin, if an enema is necessary, acts easily and painlessly, and both my patients and the nurses have been more than satisfied with the result. It seems absolutely free from risk and, further, it probably acts as an emollient dressing to the typhoid ulcers. The only disadvantage I have seen from its use during typhoid fever has been a little occasional leakage per anum.

I give the drug in a dose of half an ounce at night and, if this be not sufficient, in a dose of half an ounce in the morning as well; it is best taken floated on the top of a little soda-water. With such dosage enemata are often unnecessary, though I still often order the bowel to be washed out so as to remove as much toxic material as possible.

Cairo.

SOCIETY FOR RELIEF OF WIDOWS AND ORPHANS OF MEDICAL MEN.—A quarterly court of the directors of this society was held on July 8th, Dr. Rigden, senior vice-president, being in the chair. Nine gentlemen were elected members of the society. The sum of £1890 was voted for the payment of the half-yearly grants to the widows and orphans. At the present time there are 45 widows and 13 orphans in receipt of grants. The invested funds of the society now amount to £139,500. Membership is open to any registered medical practitioner, who at the time of his election is resident within a 20-mile radius of Charing Cross. The annual subscription is 2 guineas. Special terms for life membership, which vary with the age of the member. Relief is only granted to the widows and orphans of deceased members. Since the last court five letters had been received from widows of medical men asking for relief, but this had to be refused as their husbands had not been members of the society. Further particulars and application forms for membership may be obtained from the secretary at the offices of the society, 11, Chandos-street, Cavendish-square, W.

Reviews and Notices of Books.

Tropical Diseases: A Manual of the Diseases of Warm Climates.

By Sir PATRICK MANSON, G.C.M.G., M.D., LL.D. Fifth edition. With 12 coloured and 4 black and white plates, and 239 figures in the text. London: Cassell and Co. 1914. Pp. 937. Price 12*s.* 6*d.* net.

SINCE the publication of the first edition of this manual by Sir Patrick Manson in 1898 it has held a foremost place among the text-books of tropical medicine. Although in the course of time the dimensions of the work have had to be increased to keep pace with the numerous discoveries and advances in our knowledge of the diseases of warm climates, it still retains to a large extent its original characters and its claim to give adequate information on the subject in a concise and handy form, so that the volume can be carried about by the practitioner in the tropics for consultation on his long journeys or on his tours of duty. Since the previous edition (the fourth) was issued in 1907 the etiology and pathology of a number of tropical diseases have undergone rapid development, such, for example, as kala-azar, trypanosomiasis, spirochætosis, and beri-beri, so that there was urgent need for the publication of the fifth edition of this book. The author, affectionately known to his former pupils and others as "the father of tropical medicine," has now left the fighting ranks of the profession, but has continued in his retirement to keep well in touch with the progress that is going on respecting the diagnosis, treatment, and prevention of the diseases of warm climates. The text in the fifth edition has been enlarged, extended, or revised throughout, while new plates and other illustrations have been added, but the general plan of the book remains the same. The author acknowledges his indebtedness to Dr. Philip Bahr for invaluable assistance in the preparation of this new edition, for rewriting the appendix on protozoa so as to bring it into conformity with the generally accepted teaching of the subject in this country, and lastly, for revising the nomenclature of the many parasites which form so important a feature of tropical pathology.

After an introduction which is concerned with the etiology of tropical diseases, the volume is divided into seven sections, dealing respectively with fevers, general diseases of undetermined nature, abdominal diseases, infective granulomatous diseases, animal parasites and associated diseases, skin diseases, and lastly, local diseases of uncertain nature. In the appendix are described some of the commoner parasitic protozoa of vertebrates and invertebrates, the classification adopted being for the most part that followed by Professor E. A. Minchin in his "Introduction to the Protozoa." The important section on fevers occupies nearly half of the whole book and comprises 24 chapters, nine of which are devoted to malaria in its various aspects. Some persons may question, perhaps, whether pellagra and heat-stroke should be classed among fevers, and whether pellagra at least should not be relegated to the section on general diseases of undetermined nature until its etiology has been worked out. The author himself says that the duration of pellagra is variable and that it may last from two to 15 years or more; in these circumstances it might be urged that this malady can scarcely be regarded as a "fever" in the usual sense. In discussing the incidence of plague in England in recent years Sir Patrick Manson refers to the occurrence of some cases in 1910 accompanied by an epizootic among rodents in "Norfolk." He evidently intends to refer to the group of instances reported in the south-east of Suffolk in that year. In describing the mechanism of the transmission of plague by fleas reference is made to the "recent observations made by Dr. C. J. Martin," no mention being made of his collaborator Mr. A. W. Bacot, entomologist to the Lister Institute, who was responsible for a large share of the experimental work, the official report to the Plague Advisory Committee being entitled, "Observations on the Mechanism of the Transmission of Plague by Fleas, by A. W. Bacot and C. J. Martin." The claims of Dr. H. Seidelin to have discovered the specific parasite of yellow fever are rather curtly dismissed as not being supported by convincing experimental evidence. In the chapter on trypanosomiasis the statement is made that Professor M. Taute, the German sleeping sickness expert in East Africa, *infected* himself with 2 c.c. of blood from a trypanosome-infected dog, the trypanosomes being of the Rhodesian type, but there was no bad effect. We had been led to understand that Professor Taute's experiments on himself failed entirely, so it is perhaps incorrect to say that he "infected" himself. Perhaps "infected" himself should read "injected" himself.

There can be no question that this manual deserves the confidence of every student of tropical medicine and of every medical man practising his profession in the tropics. The advice given as to diagnosis and treatment has been carefully weighed beforehand, the great knowledge and ripe experience of Sir Patrick Manson enabling him to speak with undoubted authority on most of the diseases of warm climates. It gives us great pleasure to recommend this handy volume to the notice of all medical men and students interested in the subject of tropical medicine.

Principles of Surgery.

By W. A. BRYAN, A.M., M.D., Professor of Surgery and Clinical Surgery at Vanderbilt University, Nashville, Tennessee. With original illustrations. London and Philadelphia: W. B. Saunders Company. 1913. Pp. 677. Price 18*s*. net.

IN this work the author has put, in a concise and understandable form, the principles on which the practice of surgery is built. The book treats of surgical bacteriology, of the various infections, of wounds, and of hæmorrhage. It describes the general principles of fractures and dislocations and the various forms of tumours, but it does not enter into the questions connected with special fractures or the occurrence of new growths in any particular organs. This will serve to show the scope of the book, and we may say that it is evidently the work of one who has had much experience in teaching, and we can recommend it to students.

While we appreciate the excellencies of the book, there are some passages to which we must take exception. For instance, we find it stated that "the fact that the hair rapidly comes out in patches (alopecia areata) is very suspicious of syphilis," and "alopecia of the eyebrows is considered by high authority to be pathognomonic of syphilis." It is true that occasionally the loss of hair in syphilis may tend to be patchy, but it is certain that alopecia areata has absolutely nothing to do with syphilis. Alopecia of the eyebrows, also, is far more commonly seen in non-syphilitic cases than in those suffering from syphilis. Again, the author sometimes employs terms which are rarely used and therefore unknown to the average student; thus we find it stated that "enchondromata form in connexion with normal cartilage, especially in the larynx, the ribs of old people, and at the clivus Blumanbachii." We venture to say that 99 students out of 100 would not know what or where the clivus Blumanbachii is.

There are numerous illustrations, some of which are very good, but many show almost nothing, this being in part due to the use of half-tone plates. It is too often imagined that a photograph must show well the condition present, but many details are quite lost in a photograph and others disappear in the process of reproduction for printing. We may instance Fig. 23, which is described as an infected hand, but really it illustrates nothing. In Fig. 198, described as "a metastasis of carcinoma in axillary lymphnode," nothing characteristic is clearly to be seen, and we doubt if a student could learn anything from it. It would be far better if these photographs were redrawn for the purpose of reproduction.

Immunity: Methods of Diagnosis and Therapy and their Practical Application.

By Dr. JULIUS CITRON, Assistant at the University Clinic of Berlin, II. Medical Division. Translated from the German and edited by A. L. GARBAT, M.D., Assistant Pathologist and Adjunct Visiting Physician, German Hospital, New York. Second edition, revised and enlarged. London: J. and A. Churchill. 1914. Pp. 267. Price 14*s*. net.

JUST two years have elapsed since we reviewed the first edition of this American translation of Dr. Citron's work, and we are glad to see the appearance of a second with considerable additions to the subject matter. While the general scope of the work is not altered, chapters have been added on chemotherapy, on anaphylaxis, and on the serological reactions which have been described in relation with tumour formation. The first two chapters deal with the theory of immunity and with laboratory equipment. After these come two devoted to active immunisation, with a special account of aggressins; two on the use of tuberculin in diagnosis and treatment; and two on the relations of toxin and antitoxin. A few pages are devoted to the toxins derived from higher plants and from animals, such as snakes, toads, and so forth, and to ferments present in the blood. Then follow chapters on agglutination, precipitation, and bacteriolysis and hæmolysis. Complement fixation claims two chapters, while one each is devoted to phagocytosis, tumours, anaphylaxis, passive immunity, and chemotherapy. There is an adequate index of subjects and a second of the names of authors quoted, but as the references to the latter are not given the second index is not particularly useful.

The book is the work of an expert, and deals both with theory and with laboratory technique. It will not assist the practising physician in treatment of disease, but is rather designed to initiate the student and practitioner into the theories underlying the various laboratory tests to which so much importance is now assigned. For this purpose we can very highly recommend it. The translation has been considerably improved since we had occasion to point out certain peculiarities of diction in the first edition. We suggest, however, that the two first letters of the word "aërobiosis" do not form a diphthong, and can therefore not be replaced by a single *e* ("erobiosis"), even on American principles.

A Text-book of Medical Entomology.

By Captain W. S. PATTON, I.M.S., and Captain F. W. CRAGG, I.M.S. Madras: The Christian Literature Society. 1914. Pp. 764. Price £1 1*s.*, or Rs.15.12.

THE title of this book is somewhat of a misnomer, as the authors themselves admit in the preface, for they describe it—and rightly—as "a guide to the study of the relations between arthropods and disease, rather than a text-book of entomology." The actual entomology consists only of the orders Rhynchota, Diptera, Siphonaptera, and Anoplura, because these subdivisions of the insect family alone are concerned with the propagation of disease; but the contents of the volume are increased by a consideration of the mites, ticks, and linguatulidæ, all of which arthropod groups are concerned with the transmission of various "fevers," and the crustacean cyclops belongs to the category by virtue of the fact that it harbours the larva of the guinea-worm, filaria or dracunculus medinensis.

The book is intended, as the first words of the preface denote, for medical and veterinary officers in the tropics; and for their sakes it is constructed as a treatise. In out-of-the-way places in Asia and Africa it is hardly necessary to state that the literature of this subject is not as a rule accessible. Hence the voluminous character of Captain Patton and Captain Cragg's work. All that is wanted must come under two covers for the great majority of those who are occupied with this department of medicine and biology and who find themselves away from civilisation. We do not think that the mode of treatment of the various groups of animals under review in this work is too lengthy, even though the result is somewhat cumbersome. To include after each section a list of the more important publications in journals and elsewhere argues, of course, the hope on the part of the authors that their handbook will prove as useful to those surrounded by libraries as to those scattered in desert places of the earth. And in so far as there does not appear to be any similar condensation of special knowledge this hope can be encouraged. But it is mainly addressed to men who will commence the study of the subject in the "field" with a groundwork of acquaintance with the more general facts of entomology derived from lectures and laboratory work at home. The book is not at all intended to embody an introduction to zoology in general and the history of the arthropods in particular. But given this quite elementary knowledge, the way into the further intricacies of the matter is well lighted up by our authors. Nor do they, as will sometimes happen, betray any favouritism for one or more groups, awarding other groups what the Germans term a "stepmotherly" treatment. Rigid impartiality reigns throughout. The reader will learn just as much of the Rhynchota as of the Siphonaptera. The illustrations, too, are as copious in one case as in another. The actual form of the illustrations is distasteful to us, consisting as it does of so much outline figure on plates, which is better rendered in the form of cuts. But the accuracy and intelligibility are to be praised.

In examining the work we have read with special attention the sections dealing with the two groups of insects just mentioned, which are important with us at home as well as in the tropics. With regard to the fleas (Siphonaptera) we note that the authors advise that all specimens should be sent to the Hon. Charles Rothschild, who is so well known for his careful study of these insects and for his large collections of the same. Here, as in the case of other groups, a very considerable list of memoirs, some of them from Mr. Rothschild's pen, is to be found at the end of Chapter V., which is concerned with these degraded diptera, as some zoologists think them. *The* flea, Pulex irritans, is singularly enough the only species of the genus Pulex to which, according to general opinion perhaps, all fleas belong. It is not confined to man; and, *per contra*, the cat and the dog flea occasionally occur on man. This both confirms and destroys current semi-scientific opinion on the matter. The multitude of species of flea is usually pointed out in works on the subject, but the impression sometimes left is that each of them is rigidly confined to its own pet host. Pulex, think our authors, is originally an Old World genus, but it has accompanied man on his travels, and is now, like man and very few other creatures, world-wide in range. Another very pestilent flea, the "jigger," is, on the other hand, a native of the New World, but has extended its range to Africa and the East. The rat is oppressed with no less than five species of flea—a fact of importance for the medical biologist in view of the transference of the plague by rats. The actual carrier of the germ has to be recognised among its fellow fleas.

We wish that we could commend the publishers' share in this volume as heartily as we do that of the authors. But it is not to be disguised that the appearance of the book is most unattractive and unwholesomely swollen. The two authors, we need scarcely point out, are already favourably known for their investigations into the structure of disease-carrying insects, and we have had many occasions lately of noticing their work in these columns.

A Text-book of General Embryology.

By WILLIAM E. KELLICOTT, Professor of Biology in Goucher College. London: Constable and Co., Limited. New York: Henry Holt and Co. 1914. Pp. 376 Price 10*s.* 6*d.* net.

ENTERTAINING the view that general embryology should occupy an important place in the collegiate study of biology, the author has published this book, which is the direct outgrowth of his own experience as a teacher of the subject, and its substance has, in fact, been in use as a text for several years. The facts of embryology lead directly to the great problems of the science of biology, and therefore the topics considered have been approached from the standpoint of their general biological relations. For those desiring a more elementary and brief course the parts in large type suffice. The small type also will be used by those pursuing a more elaborate course. The illustrations are particularly good, clear, and well selected. Most of them have been redrawn from the original sources. At the end of each chapter is a list of references to literature. We indicate the space occupied by the important sections to show the symmetrical planning of the work.

Ontogeny is first dealt with in about 30 pages. Embryology is defined as the science of the genesis of the adult organism. The various processes of reproduction are described and illustrated by numerous figures in the text, and the fundamental character of the relation of embryology to the cell theory is emphasised. The author attempts to explain "how it all happens"—i.e., the transformations of substance, energy, and form. The Cell and Cell Division occupy about 50 pages, the cell in structure and action being the basis of modern embryology. More especially is the importance of polarity in germ cells dwelt on. The description of mitosis as it occurs in various classes of animals is particularly lucid and well worthy of perusal and study, for the mitotic figure is a mechanism effecting the equal distribution to the daughter cells of chromosomal division within the nucleus of the parent cell, so that each new cell has a complete group of chromosomes similar to those of the parent cell. Germ Cells and their Formation are the next subject, and are dealt with in over 40 pages. Lode computed that the total number of sperm formed in man may average about 340 billions, or approximately 850,000,000 sperm for each one of the 400 ova matured during the reproductive period of the female. On the other hand, the codfish is said to form 8,000,000 to 10,000,000 ova and a single species of sea urchin 20,000,000 ova in one season. The number of eggs is smallest where they develop within a brood cavity or where some parental care is exercised. Maturation is next discussed (30 pages) and then Fertilisation (54 pages). When fertilisation is internal the spermatozoa may remain alive and able to function for a very long time—e.g., in bats and snakes from autumn to the following spring, in snails for three years, and in bees for four or five years. Once within the ovum a "foreign" sperm seems to act almost as efficiently as the proper sperm in inaugurating development. The action of the spermatozoon is not specific. Human spermatozoa swim at the rate of 27 mm.—i.e., about 550 times their own length—in 7·5 minutes. At the corresponding rate of progression a man would walk a mile in 12·4 minutes. "Cleavage" (40 pages) is the second of the "grand periods" in individual history. In nearly all species the earliest cleavage planes are definitely related to the polar axis of the ovum. Differentiation, Heredity, and Sex Determination require about 60 pages, and form one of the author's most suggestive chapters, and he comes to the conclusion "that the chromosomes are to-day the determining factors in development and heredity." The final chapter (36 pages) deals with the Blastula, Gastrula, and Germ Layers.

Altogether the work is both lucid and suggestive, while it ranges over the whole sphere of general embryology in a manner which makes the study of so recondite a subject fascinating and attractive.

The Treatment of Diseases of the Digestive System.

By ROBERT SAUNDBY, M.D. Edin. Second edition. London: C. Griffin and Co. 1914. Pp. 179. Price 4*s*. net.

THE first edition of this excellent work, reviewed in THE LANCET of May 18th, 1907, was intended as a guide to the principles and practice of the treatment of diseases of the digestive organs, based on the author's personal experience. The second edition follows the same lines as the first; it has been brought up to date, revised, and enlarged by an appendix on dietetics.

Its first 50 pages consist of a general introduction to the subject, the methods of examining the patients, and general considerations about foods, drinks, and diets. Then follow five sections on diseases of the œsophagus, stomach, intestines, and rectum, and on the symptomatic disorders dependent upon gastro-intestinal troubles. In addition to the appendix already mentioned there is at the end of the book a brief list of prescriptions.

This thoroughly practical little volume may be warmly commended to the attention of all medical practitioners. It is written in a concise and straightforward style, and is clearly the fruit of a mature and extensive experience. Dr. Saundby shows great skill in his avoidance of the fads and far-fetched fancies, the *outré* diets and ultra-scientific treatments, that are sometimes imposed upon the well-to-do dyspeptic patient.

Diseases of the Rectum and Pelvic Colon.

By MARTIN L. BODKIN, M.D. New York, Rectal Surgeon, St. Mary's Hospital. Illustrations specially drawn by FRANCIS A. DECK. New York: E. B. Treat and Co. 1913. Pp. 416.

THIS is a convenient guide to the diseases of the rectum in a form likely to prove useful to the general practitioner who looks for assistance in the treatment of a rectal case. It begins with a chapter on the anatomy and physiology of the rectum and of the pelvic colon. An account of the methods of examining a patient follows, and then come chapters on diagnosis and on the symptoms usually associated with disease of the rectum. The various affections of the rectum are described in turn, special stress being laid on those rectal affections that are suited for treatment by medical men in general practice. The treatment of the more serious diseases, such as cancer, is described, but not so fully.

On the whole, we may express a very favourable opinion of this little book. It is clearly written and illustrated by plates which show what they are intended to show. It is only natural that the author should approve of those operations which he himself employs, but the terms in which he condemns the crushing operation for hæmorrhoids suggest that this is a method which he can hardly have personally used. He says "the operation is only applicable to cases one would select as favourable for the injection method." The method can be used with perfect success in any case of hæmorrhoids, as those know who employ it. The author appears to prefer the clamp and cautery operation, which is also an excellent method.

Sanitation in India.

By J. A. TURNER, M.D., D.P.H., Executive Health Officer, Bombay Municipality. With contributions by B. K. GOLDSMITH, M.B., D.P.H.; S. C. HORMUSJI, M.D., D.P.H.; K. B. SHROFF, L.M. & S., D.P.H., D.T.M.; and L. GODINHO, M.D., D.P.H. Bombay: Times of India Press. 1914. Pp. 1014.

IN this volume, dedicated to the municipal corporation of the City of Bombay, is contained the matter of the courses of lectures and demonstrations given to the students of the sanitary surveyors' class by the public health officers of the city, elaborated so as to form a handy and practical guide to sanitation in India. The first chapter deals with the administration of the Public Health Acts, which are based on the English Public Health Act of 1875, and are carried out by the executive officer (who may be municipal commissioner, chief municipal officer, or collector), taking the place of the sanitary authority in England. The public health administration of Bombay City is naturally taken as an example of the application of modern sanitary methods in India, and their practical working is described in detail, with a summary of the by-laws now in force, including also the sanitary administration of the port. This section will be of great value to all concerned with the sanitary supervision of a large city or port in a tropical climate in any part of the world.

The collection, removal, and disposal of town refuse are next dealt with; in addition to describing the procedure in London, the details of practice in Bombay, Calcutta, and Madras are furnished. The subject which follows—the collection, removal, and disposal of sewage—is of the greatest importance in a tropical city, and also one of the greatest difficulty. The system at work in Bombay is described in detail and with illustrations; there is also some account of the various dry methods of disposal in use in the country districts and cantonments, though not so fully detailed a description as might have been given. The Shone and Liernur methods of pneumatic removal are mentioned, but not fully described, though the installation of the former system at Rangoon is, we believe, the most complete and extensive in the world. Water and its supply is considered in the fourth chapter. It may be doubted whether the bacteriological details given would be of use to the readers for whom this manual has been compiled; and the arrangement of this chapter cannot be said to be satisfactory. In the next section, on food and milk, we find a description of the parasites in water, which would surely be better placed in Chapter IV. The chapter on infectious diseases and their prevention contains much valuable material, though the information is not always given in an assimilable form, and it is odd to find Bristowe referred to (p. 524) as "a recent writer," under the heading of typhus fever. J. S. Bristowe's treatise on medicine was published in 1876. On the other hand, in a book published in 1914, referring to Indian public health, we think something more should have been said about the causation of beri-beri than that "several theories have been put forward, the most favoured being that of uncured rice; possibly some micro-organism in certain forms of food producing a toxin." There is a full description of plague and the procedure necessary for its prevention; and the chapter on malaria is very complete and well illustrated.

There is a great deal of information in this volume, but the method of presentation does not always do justice to the subjects. It would have been more useful if it had been provided with an index.

LIBRARY TABLE.

The Fundamental Basis of Nutrition. By GRAHAM LUSK, Professor of Physiology, Cornell University. London: Humphrey Milford, Yale University Press. 1914. Pp. 62. Price 2*s.* 6*d.* net.—Patients and laymen often ask for simple books on the theory of diet, and to such inquirers this brochure can be entirely recommended. The position and reputation of Professor Lusk are sufficient guarantee of the scientific accuracy and value of the matter presented, though the presentation is so simple that everyone can follow it. After a short historical survey the reader is introduced to the theory of calories, and proper stress is laid upon the necessity for comprehending the measurement of heat production as a standard of the value of foods. Persons who cannot realise the importance of a knowledge of calories "must be reasoned with and persuaded to listen." They cannot do better than begin with these lectures. From the question of the need of "fuel," heat-producing foods, the author passes to the comparison of various forms of proteins, showing the unquestionable superiority of the proteins of meat, fish, eggs, and milk over those of wheat, beans, or maize; the proteins of rice and potatoes hold an intermediate position. We have given here an excellent account of the varied proteins of the commoner cereals—wheat glutinin, gliadin (the alcohol-soluble protein of wheat), edestin of hemp, and other bodies—which have been laboriously prepared by Osborne and Mendel in the United States. After a brief glance at the habits of different populations in the matter of diet, the writer passes to the important subject of vitamines, upon which much work has probably yet to be done. The initial researches into their nature arose from inquiries into the causation of beri-beri, and are excellently sketched here. The closing chapter is a very practical review of the monetary value of foods, in which a proper tribute is made to the valuable contribution to this subject afforded by Miss Dorothy Lindsay, under the direction of Dr. Noel Paton. A very wide investigation has recently been made by Dr. F. C. Gephart, of the Russell Sage Institute, who obtained his material from the ordinary meals of the "Child's Restaurants," establishments well known throughout America for the high quality of their food material and the moderate scale of their charges.

The Purpose of Education: An Examination of the Education Problem in the Light of Recent Psychological Research. By ST. GEORGE LANE FOX PITT. Cambridge: University Press. 1913. Pp. 83. Price 2*s.* 6*d.* net.—The author has written a little book on the application of certain findings of experimental psychology to the elucidation of educational problems in the hope of clearing up some prevailing confusions and difficulties. He believes that we err either on the side of making exaggerated claims for the importance of the "inner life," or on the side of assigning too much to the effect of "environment." In the pursuance of a middle path lies our best hope for the future of the race. As far as the former is concerned, the author holds that the strength and worth of our personality are determined by the quality, nobility, and coördination of the "complexes" of which it is composed. Complexes are ever in a state of flux, ever changing and developing, adapting themselves to, or assimilating themselves with, their environment. Hence the right way to awaken or develop character is by the harmonious interaction of varying complexes with chosen or accidental environments. An individual's likes and dislikes, tastes and preferences, can be cultivated, repressed, or developed, and in the subordination of the lower to the higher lies the true goal of systematic education. It is a fallacy to imagine that mental disposition and environment are mutually independent; to attain the ideal state of perfect interaction instincts must be rationalised, not ignored. To use a Freudian expression, they must be sublimated, not denied. The book commends itself to the thoughtful reader and to the teacher who wishes to be more cognisant of the psychical processes involved in the art of pedagogy.

Diabetes: Its Nature and Treatment. What Diabetics Ought to Know. By the Hon. Dr. T. M. NAIR, M.D. Madras: Higginbothams, Limited. 1914. Pp. 147. Price 6*s.* 6*d.* net.—The author, an Indian, and an M.D. of Edinburgh, in the preface expresses the hope that his small book "will be of some little use in enabling the public to understand what has already been established, and to estimate what there is yet to be disclosed." On glancing it through to appraise its fitness as an enlightener of the public in those things that a patient ought to know, the first thing that struck us was two or three pages of graphic chemical formulæ illustrative of the difference between normal katabolism and its perversion in the production of acetone. The natural inference was that this was a specimen of the quasi-learned book making an *ad captandum* appeal to the public. Extended perusal, however, showed it to be really a conscientious and careful summary of present knowledge and theories in regard to diabetes in almost all its relations. A book whose author closes by describing it as a "short account of a disease whose etiology we do not know and for which we have no effective treatment" seems hardly ascribable to unprofessional motives. The frequency of diabetes in India gives point to the statement in the introduction that "an organised research into the etiology and pathology of diabetes ought to be conducted in India very much like cancer research or the campaign against tuberculosis in England." The book is written in excellent English and shows a discriminating study of a wide field of modern medical literature. We should prefer to describe it as indicating much that the diabetic's medical attendant, rather than himself, ought to know.

Nouveau Traité de Chirurgie. Publié sous la direction de A. LE DENTU et PIERRE DELBET. *Maladies de la Mamelle*. Par AMÉDÉE BAUMGARTNER, Chirurgien des Hôpitaux de Paris. Avec 56 figures dans le texte. Paris: J. B. Baillière et Fils. Pp. 339. Price, paper, 6 francs; boards, 7.50 francs. —In this volume of Le Dentu and Delbet's elaborate treatise on surgery Dr. Baumgartner has succeeded in putting into a comparatively small volume all the essential facts connected with the breast. The difficult subject of the classification of the tumours of the breast has been treated in a very satisfactory manner. Especially good is the account of the operative treatment of cancer of the breast. The illustrations are numerous, and altogether the work is of the high standard of the other treatises contained in this excellent system of surgery.

MISCELLANEOUS VOLUMES.

IN *The Struggle for Scutari* (*Turk, Slav, and Albanian*), by M. EDITH DURHAM (Illustrated by photographs and sketches by the Author. London: Edward Arnold. 1914. Pp. 320. Price 14*s.* net), is presented a stirring account of the events of 1911–13 in Albania, as seen by one familiar with the country and people who had special opportunities for seeing and a capacity for appreciating the complexity of the problems involved. It is not a cheerful story by any means, with its recital of atrocities and duplicities, disgraceful alike to Christianity and civilisation, but practised apparently by all sides indiscriminately during the rising against Turkey, and the contests between the different subject races that shook off her yoke. The authoress herself felt that, in carrying out her work of relief to the sick and wounded and enabling them to return to the front, she was "not only prolonging the war, but aiding and abetting every kind of atrocity," and that she ought not to do so. Particular instances are given of Montenegrin and Servian barbarities which may rank with the "Turkish atrocities" that have long been considered by many English people to be characteristic of the Moslem. The author's conclusion is that no permanent solution of the Balkan question has been arrived at. "The ethnographical questions have been ignored. ...... The seeds have been sown of hatreds that will grow and bear fruit." There are many illustrations from the author's photographs and sketches.

Dr. A. R. Neligan is physician to H.M Legation at Teheran, and has resided for some years in the country, so he writes with knowledge in his *Hints for Residents and Travellers in Persia* (London: John Bale, Sons, and Danielsson, Limited. 1914. Pp. 195. Price 5*s.* net.) Persia is somewhat of a *terra incognita* to most Britons, and Dr. Neligan's little book contains much useful information as to life and how to live in a country which is of interest in many ways. Persia is mainly a great elevated plateau, a certain amount of which is desert, but most of which (if irrigated) is extremely fertile, while the climate is very pleasant. True, the winters are severe and the summers hot, but the air is so dry that the heat is quite bearable. This, however, is not the case in the Caspian provinces and in the districts around the Gulf, where heat and humidity are combined. Dr. Neligan's hints and instructions as to food, housing, hygiene, and other matters are straightforward and sound, though on one or two points other observers may differ from him. First, as to food. In some parts of Persia, surely, food is good both in quality and variety. True, there is no beef, but always excellent mutton; about 12 different kinds of *pilaf*, almost all good; and vegetables in abundance. Fruit in the Urmi Plain, at any rate, is magnificent, and the chickens, even the post-house breed, are quite worth eating. Secondly, Dr. Neligan says that in his experience Persia is singularly free from fleas. The reviewer did not find it so. He remembers camping for the night about half-way between Urmi and Khoi, at a place where there were no houses but a ruined stone hut, and the ground simply shimmered with fleas. Persia is a delightful country in which to travel or reside, and for those who can appreciate colour in landscape we can imagine no more fascinating place. Dr. Neligan supplements his writings on Persia with instructions as to how to get there, but has omitted to give the route *viâ* Vladikafkas, the Dariel Pass, and Tiflis. If more expensive than some others, the magnificence of the scenery makes it quite worth while taking. This is a very interesting book.

It is fitting that a notice of a work on *Travel and Politics in Armenia*, by NOEL BUXTON, M.P., and the Rev. HAROLD BUXTON, with an introduction by Viscount BRYCE and a contribution on Armenian History and Culture by ARAM RAFFI (London: Smith Elder and Co. 1914. Pp. 274. Price 5*s.* net), should follow that dealing with travel and residence in Persia, for Persia and Armenia touch one another both geographically and in many ways politically. The greater part of the work deals with politics, and on this part of the book we can say nothing. But we can cordially recommend the book to all those who desire to know something of an ancient people with a most interesting history, while apart from the Armenians the description given of the Kurdish tribes is sympathetic and lifelike. We are glad to see that the authors highly appreciate the Armenian Liturgy, for to our minds it is singularly beautiful and only excelled among Eastern Liturgies by that of Malabar and among Western by the Mozarabic rite.

Lourdes, by JOHANNES JÖRGENSEN, translated from the original Danish by INGEBORG LUND (London: Longmans, Green, and Co. 1914. Pp. 195. Price 2*s.* 6*d.* net). There is less disposition in these days than formerly to deny the reality of the cures at times effected under the influence of strong emotion, religious or otherwise. The tendency of others than those whose religious principles, of whatever kind, are involved is rather to explain them as being due to subjective suggestive influence. In this book a sympathetic attempt is made to present a picture of one of the pilgrimages to Lourdes. The history of the shrine is recounted and the spectacle afforded by the pilgrimage is somewhat flamboyantly described, but when we come to look for happenings we are told only of a paralytic who became able to move her hand, a blind person who insisted that she had received her sight, but concerning whom the verdict of Dr. Boissarie, director of the Bureau des Constatations Médicales, was "Quite destroyed; impossible to see with those eyes"; and two cases of gastric ulcer in which at least a symptomatic cure apparently must be admitted. For the rest, recourse is had to the case-books of the Bureau des Constatations, from which are cited several cases, one of whom, Augusta de Muynck, was present to show that a cure effected during 1908 in 24 hours of a freely discharging abdominal fistula left after three laparotomies had been maintained. The descriptions of the cases generally are too diffuse and lacking in precision and the necessary knowledge of the relative importance of medical factors to be of much assistance to the inquiring medical man. The descriptive portion of the book, particularly the story of Bernadette Soubirous, by whose "vision" the grotto was made known, is readable enough.

JOURNALS AND MAGAZINES.

The Journal of Physiology. Edited by J. N. LANGLEY, Sc.D., F.R.S. Vol. XLVIII., Nos. 2 and 3. May, 1914. Cambridge University Press. Price 7*s.* 6*d.*—Further Observations on the Constricting Action of Adrenalin on the Cerebral Vessels, by Carl J. Wiggers. Adrenalin was perfused through the brains of animals removed from the skull after the manner described by Dixon and Halliburton. In all 13 experiments were made, and in eight of these adrenalin caused constriction of the cerebral vessels.—The Influence of Carbohydrate and Fat on Protein Metabolism: III., The Effect of Sodium Selenite, by E. P. Cathcart and J. B. Orr. The toxic effects of selenium have long been known. The authors' experiments were made on an Airdale bitch, weight 12 kilos. Throughout the series of experiments the protein content of the food was little altered, but the amount of carbohydrate was varied from 33 to 204 grammes per diem, while the fat content was varied inversely to maintain an approximate constant calorie value for the diet; sodium, 2 grammes per diem, was added to each diet. The methods used for estimating the urinary constituents are given in the text. The injection subcutaneously of a sublethal dose of sodium selenite produces salivation, vomiting, anorexia, and lethargy. The total N and urea outputs are raised as a result of the injection, a result most marked in experiments with carbohydrate-poor diets. There is no marked acidosis following the injection, as estimated by the output of ammonia, acetone, and aceto-acetic acid. After injection there is an immediate rise in the output of creatinin, with possibly a subsequent fall below normal. There is also a definite rise in the creatin output which cannot be explained by the presence of aceto-acetic acid. The output of creatin varies inversely with the amount of carbohydrate in the food. Generally it may be said that the toxic effect of the selenite was most marked when the diet was poor in carbohydrate.—The Cerebro-spinal Fluid: II., Cerebro spinal Pressure (C.S.), by W. E. Dixon and W. D. Halliburton. The C.S. pressure has been frequently measured previously, and is found to vary within considerable limits (40–72–200 mm. of water). It varies with the respiratory movements, with arterial blood pressure, with ether anæsthesia, with strychnine, and with many other factors. The authors measured the C.S. pressure by connecting a cannula inserted into the subcerebellar cisterna with a manometer containing salt solution. The movements were recorded by means of a Marey's tambour. The animals experimented on were dogs anæsthetised with morphine and urethane. Cerebral venous pressures were also recorded. Experiments were also made on the dead animal (killed by chloroform, hydrocyanic acid, or asphyxia), artificial respiration being kept up after death. The cerebral venous and C.S. pressures may or may not approximate to one another according to certain conditions, and the same rule holds true during life. The effects of changes in arterial pressure—e.g., hæmorrhage compressing blood-vessels, clamping both carotid arteries, stimulation of the vagus and sympathetic nerves—were studied, as were the effects of the C.S. pressure on cerebral venous pressure and *vice versa.* Next, the effects of substances that increase the cerebro-spinal secretion—choroid extract (intravenous injection), chloroform, and carbonic acid gas (inhalation)—were studied. The authors conclude that the C.S. pressure is an independent pressure, and that the factors determining its height are dependent on the rate of secretion and the rate of absorption of the fluid—i.e., it is an independent secretory pressure, although it may be influenced passively by circulatory changes. The effects of adrenalin, amyl nitrite, and pilocarpine were also studied. It has been generally held that the brain being incompressible the total blood content is almost constant (Monro-Kellie doctrine). The authors come to the conclusion that the cranial contents cannot any longer be regarded as a fixed quantity without the power of expanding or contracting in volume. The C.S. pressure is influenced passively to a small extent by changes in the arterial and venous pressures, but such alterations are insignificant compared with the independent changes in pressure which occur as the result of secretory activity. Of all the conditions which influence the C.S. secretion the authors attach the most importance to deficiency of oxygen or excess of carbon dioxide in the blood.—Vaso-motor Nerves in the Lungs, by Enid M. Tribe. A considerable number of investigations have already been made on this subject since 1894. The method used consisted in artificial perfusion of the lung *in situ* with the defibrinated blood of the animal, the circulation being maintained by means of a small pump and glass valves, the animal itself (usually a cat) being immersed in a bath of 0·9 per cent. saline at 37° C. Various preparations of "adrenalin" were added to the blood in varying proportions. It was found that all preparations of adrenalin in amounts not less than 0·01 mgm., under normal conditions of pressure and temperature, produce constriction of the pulmonary vessels of dogs, cats, rabbits, guinea-pigs, and ferrets. The constriction is followed by a dilatation, best marked in cats. The minimum amount of adrenalin capable of producing constriction is 0·01 mgm., but dilatation is obtained with only 0·00002 mgm. The effects are due to action on the smaller arteries and arterioles, not merely on the pulmonary artery itself. Stimulation of the stellate ganglion produces slight motor effects. After ergotoxin the constrictor effect of adrenalin is lost, only dilatation being produced. It is concluded that the constriction is due to vaso-constrictor nerves of sympathetic origin.—On the Effects of Complete and Incomplete Castration upon Horn Growth, by F. H. A. Marshall and J. Hammond. The effects of removing in Hardwick sheep the testes, but retaining the epididymis, were studied. The authors' results clearly support the view that the testes elaborate one or more hormones which either directly or indirectly act as a stimulus to the tissues from which the horns develop.—The Carbon Dioxide Production of Heat Rigor in Muscle and the Theory of Intramolecular Oxygen, by W. M. Fletcher and G. M. Brown. This is a very important paper, as it practically disposes of the views of muscle physiology commonly associated with the names of L. Hermann ("inogen theory") and Pflüger ("intramolecular theory"). To grasp the importance of the question the whole paper with its critical discussions should be read. The CO_2 discharge of heat rigor—the discharge at temperatures between 40° and 100° C., and from heated muscle after survival in or without oxygen, after chloroform rigor, and after the addition of acid, were studied. The summary of the authors' conclusions occupies a page and a half. All the experiments point to the conclusion that in the muscle the respiratory oxidation process yielding CO_2 as an immediate product has its chief end in the supply of energy for replacing the lactic acid in the molecular position from which stimulation of same kind has displaced it, and there appears to be no reason at present for supposing that the material which is oxidised in the respiratory process is the same as, or related to, the material from which lactic acid appears, and into which, as it seems, it may again disappear.—Observations on Decerebrate Rigidity, by Lewis H. Weed. Decerebrate rigidity manifests itself as a prolonged enduring contraction of the extensor muscles. Experiments were made on about 50 cats. The effects of various cerebellar ablations on the rigidity, the pathway in the cerebellar peduncles, the mesencephalic reactions, and the inhibitory pathway were investigated. The author concludes that (1) the main reflex centre, and in that sense the source of decerebrate rigidity, lies in the mid-brain, and is probably the nucleus ruber; (2) the cerebellum forms a very important, if not absolutely essential, pathway for the afferent impulses from the limbs and trunk concerned in decerebrate rigidity; (3) the cerebellum forms an essential link in the inhibitory pathway from the cerebral cortex; and (4) the localisations of the cerebellum, as far as can be ascertained from study of the rigidities in various extremities, are not sharply circumscribed or very minutely differentiated.—Is Polished Rice plus Vitamine a Complete Food? by CASIMIR FUNK. Experiments were made on pigeons fed on "synthetical diet," and others on polished rice, and they all manifested typical beri-beri symptoms. Injections of the "vitamine-fraction" caused complete recovery. From these and other experiments the author concludes that polished rice and vitamine constitute a complete food, and that there is no justification at present to accept the necessity of two different vitamines, one for curing the nervous symptoms and one for the maintenance of body weight.

THE PREVENTION OF INSANITY.

ON July 16th a deputation waited upon Mr. Herbert Samuel, President of the Local Government Board, to advocate the provision of greater facilities for the non-compulsory treatment of early and uncertifiable mental cases. The following composed the deputation:—Sir John Jardine, M.P., Dr. Christopher Addison, M.P., Dr. W. A. Chapple, M.P., Mr. Percy Alden, M.P., Mr. J. W. Hills, M.P., Sir Henry Craik, M.P., Mr. T. E. Harvey, M.P., Sir Rickman Godlee, Dr. F. W. Mott, Dr. Howard Tooth, Dr. H. Sainsbury, Dr. Ivo Geikie Cobb, and Dr. S. E. White (honorary secretary). Lord Robert Cecil, M.P., had intended to be present, but was detained elsewhere, while Sir Francis Champneys, Sir Wilmot Herringham, and Dr. Grainger Stewart wrote expressing regret at being unable to attend.

Sir **JOHN JARDINE**, in introducing the deputation, read the following recommendation which has been widely signed by leading medical practitioners, and by 330 Members of Parliament of all shades of political opinion :—

"We, the undersigned, desire to advocate the provision of greater facilities for the treatment of incipient mental cases without certification. The strong popular prejudice, the loss of liberty, and the atmosphere of certified asylums combine to deter patients and their friends from seeking early and efficient treatment. We consequently recommend that certification should be restricted to those cases in which, from the serious nature of the malady, it has become necessary, and that incipient cases should have more opportunity of temporary preventive treatment in reception homes, observation wards of Poor-law infirmaries, or the wards of general or special hospitals."

The medical signatories to this recommendation are as follows :—

London: Dr. Edwin Ash, Miss L. B. Aldrich-Blake, M.S., Miss L. Garrett Anderson, Sir Thomas Barlow, Sir John Rose Bradford, Sir John Broadbent, Mr. C. A. Ballance, Mr. A. Boyce Barrow, Dr. S. H. Belfrage, Mr. Stanley Boyd, Miss A. Helen Boyle, Dr. E. Honor Bone, Dr. W. P. S. Branson, Dr. J. Mitchell Bruce, Dr. E. Farquhar Buzzard, Sir Francis Champneys, Sir W. J. Collins, Sir John Collie, Mr. James Cantlie, Dr. J. Walter Carr, Dr. Harry Campbell, Dr. J. Stansfield Collier, Dr. W. S. Colman, Dr. Dorothea Colman, Dr. F. William Cock, Dr. Ivo Geikie Cobb, Dr. E. Davies Colley, Dr. Maud M. Chadburn, Dr. James Calvert, Mr. H. Work Dodd, Dr. T. R. Elliott, Mr. Willmott Evans, Miss Frances Ede, Sir David Ferrier, Dr. H. Morley Fletcher, Mr. Percy Flemming, Dr. Emily E. Flemming, Dr. R. Hingston Fox, Dr. Selina Fox, Sir Rickman Godlee, Sir Alfred Pearce Gould, Miss E. Grace Garratt, Dr. Leonard Guthrie, Dr. Henry Head, Sir Victor Horsley, Professor W. D. Halliburton, Sir W, P. Herringham, Dr. George Johnston, Dr. H. Macnaughton-Jones, Dr. M. Sophia Jevons, Dr. W. Douglas Kirkwood, Miss Gertrude Keith, Mr. J. B. Lawford, Dr. Constance E. Long, Dr. Octavia Lewin, Dr. F. W. Mott, Dr. Sidney Martin, Sir Malcolm Morris, Dr. E. D. Macnamara, Dr. James Mackenzie, Dr. Hector Mackenzie, Dr. Isabella Macdonald, Dr. R. O. Moon, Dr. Hector Munro, Dr. J. B. Muirhead, Dr. C. M. Murrell, Dr. George Ogilvie, Dr. J. A. Ormerod, Dr. Frederick S. Palmer, Mr. J. Herbert Parsons, Dr. Arthur G. Phear, Dr. Winifred S. Patch, Dr. Henry Rayner, Dr. J. S. Risien Russell, Dr. Amand Routh, Sir George H. Savage, Dr. Mary Scharlieb, Dr. G. E. Shuttleworth, Dr. Agnes Savill, Dr. Harrington Sainsbury, Dr. Amy Sheppard, Dr. T. Grainger Stewart, Dr. Mary C. Scott, Dr. Purves Stewart, Sir John Tweedy, Dr. James Taylor, Dr. Frederick Taylor, Dr. Howard H. Tooth, Dr. W. Aldren Turner, Dr. Rose Turner, Dr. A. Campbell Thomson, Miss May Thorne, Dr. Samuel West, Professor A. D. Waller, Dr. Florence E. Willey, Dr. Hugh Wingfield, Dr. Jane Walker, Dr. Helen Webb, Dr. L. Woodcock, and Dr. A. Davis Waite.

Birmingham.—Mr. Gilbert Barling, Mr. Seymour Barling, Dr. Stanley Barnes, Mr. Frank Barnes, Mr. W. Billington, Dr. Guy J. Branson, Dr. H. Langley Brown, Dr. Violet A. Penrose Coghill, Mr. Alfred Paget Evans, Dr. Frederick Edge, Dr. J. G. Emanuel, Mr. J. Jameson Evans, Dr. F. W. Foxcroft, Dr. W. Pemberton Fooks, Dr. W. B. Featherstone, Mr. W. F. Haslam, Mr. George Heaton, Dr. R. Beatson Hird, Mr. A. E. W. Hird, Dr. John T. Hewetson, Mr. J. Fourneaux Jordan, Mr. F. Emrys Jones, Dr. O. T. Kauffmann, Dr. William Lamb, Mr. Albert Lucas, Dr. Edward Malins, Mr. Christopher Martin, Mr. F. Marsh, Mr. J. T. J. Morrison, Mr. G. Percival Mills, Dr. W. J. McCardie, Dr. Caroline E. O'Connor, Dr. Leonard G. Parsons, Dr. C. E. Purslow, Dr. W. A. Potts, Dr. James W. Russell, Dr. John Robertson, Sir Robert M. Simon, Dr. Robert Saundby, Dr. C. W. Suckling, Dr. J. Douglas Stanley, Dr. James E. H. Sawyer, Dr. Mary D. Sturge, Dr. Peter Thompson, Dr. Thomas Wilson, Mr. Beckwith Whitehouse, Dr. E. Wood White, Dr. Beatrice Webb, and Dr. William H. Wynn.

Liverpool.—Dr. John Hill Abram, Sir James Barr, Dr. Thomas R. Bradshaw, Mr. H. Briggs, Dr. Robert J. Buchanan, Mr. Thomas H. Bickerton, Dr. J. M. Beattie, Dr. Richard Caton, Dr. T. B. Grimsdale, Dr. A. Gordon Gullan, Mr. Damer Harrisson, Dr. John Hay, Miss Frances Ivens, M.S., Dr. Charles McAlister, Dr. J. C. McDougall, Dr. Benjamin Moore, Mr. R. W. Murray, Mr. Rushton Parker, Dr. W. Permewan, Mr. Frank T. Paul, Dr. Nathan Raw, Mr. Charles H. B. Shears, Dr. G. Stopford Taylor, Dr. W. B. Warrington, Dr. J. Hayward Willett, and Dr. Courtenay Yorke.

Manchester.—Dr. Judson Bury, Dr. J. Grey Clegg, Dr. Catherine Chisholm, Dr. J. R. Carver, Dr. H. Cully, Dr. Archibald Donald, Professor Sheridan Delépine, Dr. A. Hill Griffiths, Dr. A. Emrys-Jones, Dr. C. Paget Lapage, Dr. Charles H. Melland, Dr. F. Craven Moore, Sir William Milligan, Dr. Ernest S. Reynolds, Dr. S. M. Ross, Dr. Arthur Sellers, Dr. W. Fletcher Shaw, Dr. E. J. Sidebotham, Mr. W. Thorburn, Mr. F. H. Westmacott, Dr. Robert B. Wild, Mr. Philip R. Wrigley and Mr. Garnett Wright.

Leeds.—Dr. Alfred G. Barrs, Mr. L. R. Braithwaite, Dr. de Burgh Birch, Mr. Edward W. Bain, Dr. T. Churton, Professor Cameron, Mr. Harold Collinson, Dr. E. O. Croft, Mr. J. A. Coupland, Mr. J. F. Dobson, Mr. T. W. Daw, Dr. T. Wardrop Griffith, Dr. John B. Hellier, Dr. J. K. Jamieson, Mr. R. Lawford Knaggs, Dr. Carlton Oldfield, Dr. M. Phillips, Dr. Henry S. Raper, Mr. E. Robinson, Dr. W. H. Maxwell Telling, Dr. Rawdon A. Veale. Dr. C. Wilfred Vining, Dr. George W. Watson, Mr. Henry Secker Walker, Dr. A. L. Whitehead, and Dr. W. McGregor Young.

Sir **JOHN JARDINE** said that the view of the committee which he represented was embodied in the following memorial :—

> We respectfully urge that the Local Government Board should, with a view to the prevention of insanity, enable and encourage county and borough councils and other local authorities to supply or aid the supply of homes intended for the treatment of early and uncertifiable mental cases at the period when they can most easily be cured, such institutions to be subject to the approval of the Local Government Board. That patients (if suitable) should enter such homes as they would enter a hospital—i.e., on an absolutely voluntary footing, and without certification, authorisation, or compulsion. They should be controlled during their stay by the rules of the institution, but be free to leave it after giving a specified notice. Unless urgency demands certification and immediate removal to an asylum, no patient who has entered shall be certified except by independent doctors after his departure from the institution. Private patients would pay on terms similar to what they now pay in county asylums. Pauper patients of the class who are now received for observation in Poor-law infirmaries, and who are found not to be certifiable, should receive treatment appropriate to their case. Both private and pauper patients should be dealt with on modern hospital lines.
>
> No change is proposed in the lunacy laws or in their administration.
>
> The object of the treatment here recommended is to prevent people becoming certifiable. It is particularly desirable that these institutions should not be regarded as "half-way houses" to asylums. With a view to encouraging the public to come to them for the early treatment which is so necessary as a preventive of insanity, it is essential that the institutions here proposed *should be kept wholly outside the jurisdiction of the Board of Control.* The patients contemplated are not in any sense "mentally deficient," neither have they been certified as "of unsound mind." Hence the Board of Control, whose function it is to deal with people belonging to the aforesaid two classes, is not concerned with individuals such as are here described *previous to certification.*
>
> We would also respectfully urge that the Local Government Board, as the authority concerned with public health, has an interest in encouraging the prevention of all forms of illness, bodily or mental, which may result in those who are affected by them becoming a permanent charge on public funds. We cannot regard with idle complacency the annually increasing and alarming accumulation of the registered insane in our asylums. The spread of insanity is not being checked by the way in which it is at present treated. Some measure is required of farther reaching scope, which shall antagonise the causes that lie at the root of early mental instability. We would point out that a preventive measure of this nature, if successful, would not only be a great gain to the community, but would materially reduce the expenditure on costly asylum accommodation which has become a burden pressing very heavily upon the rates.

Dr. **CHAPPLE** and Dr. **MOTT** spoke in support of the memorial, and Mr. **HERBERT SAMUEL**, in his reply, noted that the essential feature of the recommendation now made to him was that the measures were to be taken apart from the Board of Control—that is to say, outside the jurisdiction of the Lunacy Commission. If legislation were needed to carry out this purpose he feared that the prospect for the immediate future was not rosy, since Parliament was already overburdened with work; but much might be done, he thought, along the lines suggested, by administrative action. He would direct the medical department of the Local Government Board to inquire carefully into the problem and communicate with the Board of Control and to report to him upon the subject. An inquiry of this kind seemed to him necessary in order to ascertain the facts, to find out what experience had been gained elsewhere, and along what lines they should proceed administratively in default of legislation. Having carefully considered the weighty memorial submitted to him, he would not hesitate to take administrative action.

THE NEW EAST SUSSEX HOSPITAL AT HASTINGS.—The Duke of Richmond and Gordon, Provincial Grand Master of Sussex, laid the foundation-stone, on July 15th, of the new East Sussex Hospital at Hastings with masonic ceremonial. The old building has been found to be quite unadaptable for present-day requirements, and the new building, besides providing for modern requisites, will be a memorial to King Edward VII. The cost of the new hospital will be £50,000, of which a sum of about £18,000 is needed.

BRITISH PHARMACEUTICAL CONFERENCE.

FIFTY-FIRST ANNUAL MEETING.

THE British Pharmaceutical Conference inaugurated the second half century of its existence by the annual meeting which was held at Chester on July 21st and 22nd.

Mr. E. H. Farr, the President, one of the most persistent of the research workers in the pharmaceutical field, dealt in his presidential address with recent work on plant products. During the past 15 years, he said, a great amount of attention has been devoted to the study of the chemistry of plants and their products, as used in commerce, the arts, and in medicines. A great advance has been made in the direction of establishing the relationship existing between allied substances found in the same or different plants, ascertaining their chemical constitution and decomposition products, and thus making practicable a considerable degree of classification, depending on the presence of definite chemical groupings common to the members of certain classes. The physical constants and general reactions of an enormous number of compounds have been recorded, and the existence of these records very considerably facilitates the work of identification of the ultimate products of plant analysis. After dealing with the classification of the alkaloids and referring to the work done in connexion with carbohydrates, fats and oils, the glucosides and the enzymes, Mr. Farr drew attention to the stabilisation of drugs—that is, the rendering permanent of the easily decomposed natural combinations in which the active constituents of plants occur by the destruction of the ferments which cause deterioration. This process, in Mr. Farr's view, will become an important phase in the pharmaceutical practice of the future, but seeing that our drugs have gained their repute on the strength of non-stabilised material, it behoves us, he thought, not to be too hasty in altering the whole of our methods; and in any steps to be taken the medical profession should, he suggests, be called on to coöperate by submitting the products to pharmacological test and to clinical practice. At the present time Mr. Farr thinks we might with advantage proceed to stabilise our liquid extracts and concentrated infusions, the proportion of alcohol in most of these preparations being too low to stop the action of any enzyme present. "Strictly speaking," he said, "these matters should be in the province of a Pharmacopœial Committee, representing the medical profession and our own calling, and the funds proceeding from the sale of the Pharmacopœia should be devoted exclusively to defraying the expenses connected with its production, including the investigations required in that connexion. Hitherto practically all the work done with the object of bringing the volume up to date has been undertaken by manufacturing firms and by private pharmacists, their suggestions later on being adopted by the editors appointed by the General Medical Council to draft the monographs and edit any new edition."

Sixteen papers were communicated to the Science Section. Mr. H. Finnemore and Mr. E. Williamson contributed a paper of no little usefulness to prescribers, the subject being "The Incompatibility of Strychnine and Nux Vomica with Alkalies, Iodides, and Bromides." Very few systematic experiments have been recorded respecting the limits in which strychnine may be dispensed with alkaline substances without precipitation, and the series of investigations conducted by the authors shows that, speaking generally, there is a great difference between the amount of strychnine hydrochloride that can be administered with alkalies when in solution in water and when in the form of the tincture or the liquid extract of nux vomica. In the first case, should crystallisation occur, the alkaloid is deposited in well-defined crystals, which are in some cases fairly large, while with nux vomica preparations, although there is often a deposit, this is usually amorphous and does not appear to be alkaloidal. Of these two the tincture would appear to be the safer, because the alcohol in the latter retards crystallisation. The most striking feature of the experiments is the difference in the behaviour towards alkalies of strychnine in the form of the solution and that existing in its natural state in admixture or combination with those other ingredients of nux vomica seeds which are extracted with alcohol. It appears that whereas strychnine and alkalies or iodides may become dangerous under varied and indeterminate conditions when the drug is given in the form of the tincture or liquid extract, no precipitation occurs and no danger need be apprehended provided the concentration is not greater than that found under normal conditions of prescribing and dosage.

Mr. Finnemore also contributed a useful paper on the Anæsthetic Ether of Commerce. Although not recognised by the current Pharmacopœia, anæsthetic ether of commerce is largely prepared from industrial methylated spirit; the author examined the products of practically all the British makers, and "it is only fair to say that, while some samples have been rather inferior in the main, they have reached a very fair average of purity." Incidentally, it is interesting to note that the odour of ether is a very useful guide to its purity. Quite a good idea of its relative freedom from impurities may be obtained by pouring 2 c.c. or so into the hand and allowing it to evaporate, and noting the odour and that of the residue. A number of ethers in actual use as anæsthetics leave a residue which is quite pungent, and from some the residue produces violent sneezing.

Liquid extract of male fern is one of the most nauseous drugs in the British Pharmacopœia, and it is not an easy matter to present it in a palatable form. In his paper on the subject Mr. F. W. Crossley Holland suggested that it should be administered in the form of a jelly, the following being the formula:—

Liquid of extract of male fern	90 minims.
Gelatin	56 grains.
Glycerin	1 drachm.
Elixir of saccharin	5 minims.
Oil of cinnamon	1½ ,,
Water	265 ,,

These ingredients manipulated by an experienced dispenser form a not unpalatable preparation.

With the object of removing the uncertainty concerning the composition of "tinctura iodi decolorata," investigations were undertaken in the Pharmaceutical Society's Chemical Research Laboratories by Mr. W. R. Pratt, who communicated the results of his experiments. He finds that the finished tincture is an alcoholic solution of ammonium iodide with excess of ammonia, containing about 0·1 per cent. iodoform and in some cases traces of ammonium iodate, hydroxylamine, and acetaldehyde.—Commercial standards for "dried magnesium sulphate, sodium sulphate, and sodium phosphate" were suggested by Mr. J. C. Umney and Mr. C. T. Bennett, who pointed out that commercial samples of these dried salts are not of constant composition.

Owing to a shortage in the supply of belladonna leaves adulteration has, especially of late, been largely practised. In a paper dealing with this question Mr. G. Stafford Allen and Mr. H. Deane brought together a description of the chief diagnostic characters of these substitutes. The adulterants found were phytolacea decandora, scopola carniolica, and ailanthus glandulosa, and samples offered as belladonna leaves have consisted of pure scopola, mixtures of phytolacea and ailanthus, and mixtures of belladonna with each of these substitutes, the proportion of substitute varying from about 20 to 80 per cent.

In a paper entitled "The Purity of Pepsin, Bacteriologically Considered," Mr. E. Quant reported on 11 samples of pepsin in powder and scales from English, American, and continental sources which he had investigated with a view to determining their bacteriological condition. His conclusion is that the bacteriological purity of pepsin is hardly satisfactory, but that scale pepsins are superior to the powders, those which showed an acid reaction being preferable.

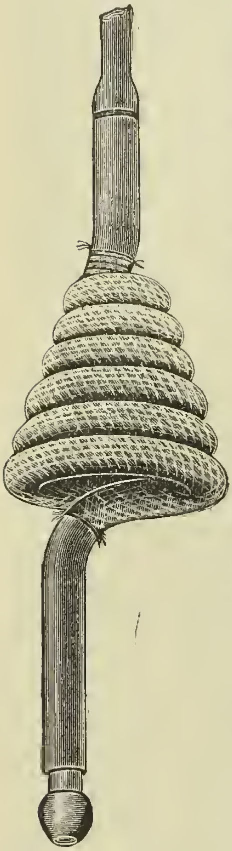
Mr. R. R. Bennett and Mr. T. T. Cocking suggested an improved process for the preparation of "liquor opii sedativus."

The titles and authors of the other papers read in the Science Section were as follows:—The Rate of Dialysis of Alkaloids in Aqueous Solution and in the Form of Galenicals, by H. Finnemore; the Analytical Characters of Benzoin, by T. T. Cocking and J. D. Kettle; the Mineral Constituents of Certain Tinctures and Drugs, by S. Judd Lewis; the Stability of Cinnamic Aldehyde, by H. A. Phillips; the Determination of Iron in the Presence of Phosphorus, by C. E. Corfield and W. R. Pratt; the Place of Carbon Disulphide in Official Pharmacy and Suggestions for its Further Use, by F. H. Alcock; the Composition of the Glycerophosphates of Commerce, by J. C. Umney and C. T. Bennett; and Some Uses of a Tincture Press, by E. W. Pollard.

New Inventions.

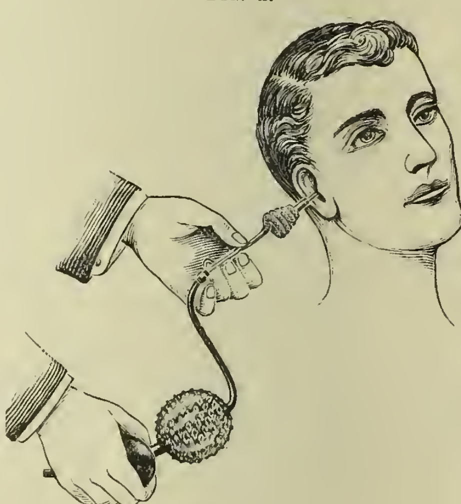
A COLD AIR LABYRINTH TESTING APPARATUS.

FIG. 1.



THE value of the caloric test for the activity of the vestibular section of the internal ear is now well established. It is at present mainly carried out by the irrigation of the ear with cold water, and, as a rule, the data are in every way reliable. At the same time the use of fluid injections into the ears is contra-indicated in various conditions, such, for instance, as the presence of a perforation in the tympanic membrane after an acute or more often a chronic suppuration in the middle ear has subsided; in such circumstances a liquid injection tends to reawaken the suppuration. Of course, if it enters a deep-seated cavity in which cholesteatoma formation is going on, the distension and pressure induced may be followed by serious or even fatal consequences. A convenient means of insufflating cold air instead of injecting cold water must have been a desideratum in the minds of many practitioners, as it has been in that of the writer. To supply this want he has devised the apparatus illustrated, which he thinks meets the requirements of the case in so far as it can be employed either on a normal membrane or on one which is perforated, either with or without persistence of suppuration. Again, it can be used with the head placed in such a position that the ear under investigation is directed downwards, which, though not impossible with water tests, is, to say the least, extremely inconvenient. The apparatus consists essentially of a tube of good conducting metal; aluminium has hitherto been used but copper has been found preferable. This is covered with absorbent linen webbing and is coiled in the form of a hollow cone. The covering is well wetted with chloride of ethyl and air is then blown through the tube by means of an ordinary spray bellows. When the air blown on the cheek is felt to have reached a high degree of coldness it is introduced into the meatus of the ear in such a direction that the cold blast impinges directly on the tympanic membrane. Inflation is continued until nystagmus is or ought to be induced. The free extremities of the tube are insulated by means of indiarubber tubing and a portion projects beyond the metal for insertion in the ear; the distal part of this is separated from the rest and can be easily changed to meet æsthetic or aseptic requirements. When the bore of the metal tube was as at first uniform the air entered in a somewhat pumping way into the ear, and this was found to be extremely disagreeable; in order to make the flow of air gentle and continuous it was only necessary to use a fairly strong secondary bag to the bellows and to choke very considerably the bore of the proximal end of the metal tube. When the instrument is thus arranged the maximum of coldness is obtainable in from 12 to 15 seconds and is kept up for about 75 seconds, when more chloride of ethyl can be added easily. In most normal cases the nystagmus is induced in an average of 30 seconds, the head being thrown back 60 degrees beyond the vertical and the eyes being intermittently directed towards the opposite side at an angle of 50 degrees from the middle line (Brüning's optimum position) and up to the ceiling. Fig. 1 shows the cold air labyrinth testing apparatus and Fig. 2 the mode of employing the apparatus. (The patient's eyes ought to have been depicted looking further towards the left.)

FIG. 2.



The apparatus in its present form has been constructed by Messrs. Allen and Hanburys, Limited, of Wigmore-street, London, W.

DUNDAS GRANT, M.A., M.D., F.R.C.S. Eng.

Cavendish-square, W.

RADCLIFFE INFIRMARY, OXFORD: COMPLIMENTARY DINNER TO MR. HORATIO P. SYMONDS.—On the evening of July 16th a dinner was given at Christ Church by the committee and the medical staff of the Radcliffe Infirmary to the senior surgeon, Mr. H. P. Symonds, on the occasion of the presentation to the infirmary of a portrait sketch by Mr. J. S. Sargent, R.A. Among those present in addition to the medical staff were the mayor of the city, the president of Magdalen, Mr. Gamlin, the treasurer of the infirmary, the secretary, Captain G. C. Rynd, and a number of old house physicians and house surgeons, the senior of whom was Mr. A. Winkfield, to whom Mr. Symonds was originally apprenticed. Sir William Osler, in presenting the portrait, remarked that Mr. Horatio Symonds was the seventh surgeon in direct succession from Richard Symonds, who practised at Atherstone, in Warwick, in the early part of the seventeenth century. His son Joshua was a surgeon at Shrewsbury; the third, John, practised at the same place; and the fourth, also a John, at Kidderminster. His son John practised at Oxford, and was the father of Frederic, for many years a surgeon to the Radcliffe Infirmary, whose son Horatio succeeded him. For three centuries the Symonds had served the public of that part of England in the capacity of surgeons. A son of the first John who settled in Oxford, John Addington, who practised at Bristol for many years in the middle of the last century, became one of the most distinguished physicians of his generation. His son, of the same name, became the interpreter of the Italian Renaissance to the last generation, and his daughter, Mrs. Green, a member of the committee, was one of warmest friends the infirmary had ever had. Horatio Symonds studied at University College, and after qualifying in 1874 settled in practice with his father, and soon became the leading surgeon of the Oxford district. He was elected on the staff of the infirmary in 1878, and was largely instrumental in introducing the new methods of Listerian practice. It was well known that it was through his influence that the late Mr. Briscoe left the infirmary the large sum of nearly £65,000, which had made possible the recent additions. Sir William Osler then read an exceedingly gracious letter from Mr. Sargent, to whom the company voted their hearty thanks for the splendid representation of the well-known features of their old and valued friend.

THE LANCET.

LONDON: SATURDAY, JULY 25, 1914.

A Week of Congresses.

NEXT week will be a very busy one in the medical and scientific world. Two congresses of first-class medical importance will be proceeding in the United Kingdom—viz., the British Medical Association, which holds its eighty-second annual meeting at Aberdeen, and the Clinical Congress of Surgeons of North America, which holds its fifth annual session in London. During the same week the French Association for the Advancement of Science is meeting at Havre and welcoming many members of the kindred British body who are unable to be present at the annual meeting which this year takes place in Australia. The programmes of the two medical congresses have for some time been before our readers, who know therefore the particular fields of medicine, surgery, and pathology that it will be designed especially to cover, and who know also that the activities of the British Medical Association are every whit as pronounced in the direction of medical politics as in that of scientific progress. We are leaving out of consideration here the political functions of the British Medical Association, and considering the two medical Congresses as designed especially to further medical knowledge, to standardise clinical achievement, and to explain technique and procedure.

In each case the Congresses will follow what has now become a formal arrangement in the conduct of such gatherings. At the meeting of the British Medical Association the plenary addresses are three in number and will be delivered by Sir ALEXANDER OGSTON, the President, by Dr. A. E. GARROD, who will deliver the address in Medicine, and by Sir JOHN BLAND-SUTTON, who will deliver the address in Surgery. Then the work of the meeting will be done in sections, at which presidential addresses of varying importance will be delivered, the different presidents interpreting their duties to the chair as they choose. Thereafter certain set subjects will be debated in the particular sections, the initiation of the discussions having been committed to selected observers. The remaining time of the session will be occupied as usual by the reading of independent papers, which have been approved of as suitable, and for the communication of which time can be made. Roughly this pattern will be followed at the American Congress, although here we have the organisation applied to one subject, that of clinical surgery. Here also we have preliminary addresses delivered by Sir RICKMAN GODLEE, chairman of the London Committee of the Congress; by the Hon. W. H. PAGE, the American Ambassador; and by Dr. G. E. BREWER, of New York, and Dr. G. E. ARMSTRONG, of Montreal, respectively the retiring President and the Vice-President of the Congress. In addition to these preliminary and official addresses there will be clinical addresses by Professor VON EISELSBERG, of Vienna, who will speak on the choice of operation in ulcer of the stomach; and by Dr. J. B. MURPHY, of Chicago, the President for the year, who will open a debate upon the limitations and technique of arthrodesis and bone-transplantation. In both the general and special surgical divisions of this Congress important subjects have been selected for debate, and the discussions will be opened by men who are famous for the work which they are doing and the views which they hold. But the American Congress is a clinical rather than an academic one, and its work will therefore be supplemented by a remarkable series of hospital visits such as would not be possible in connexion with any but a well-defined special gathering held in a great capital city. The main hospitals in London have offered their clinical practice for the inspection of the members of the Clinical Congress of Surgeons of North America, when opportunities for observation and informal discussion will arise among men exceptionally qualified both to give information and to sift it when given, such as must be absent as a rule from any mere general scientific gathering. Chances will thus obtain for the clearing up of doubts among the protagonists of different views, additional to those offered by set debates.

The utility of scientific congresses, whether international or domestic, general or special, has been challenged of late on the ground that far too much is said at the meetings that is not of any importance. The same judgment has at different times been passed upon gatherings as important as those of the British Association for the Advancement of Science, as well as upon the numerous semi-popular congresses now being held with frequency in this country. Those who follow this line can find much to support them, but in our opinion, when medical congresses are in question, the critics do not take sufficient account of the care that has been expended lately in the organisation of these gatherings to suppress loose and desultory talk, to check the recording of experiences that are not to the point, and to prevent the laborious refutation of views that are no longer held. Every year the attempts are multiplied to make medical congresses into meetings of thinkers and doers by employing some such scheme of arrangement as that which has been already indicated and under which certain points only, at any rate in any set programme, come up for debate. But it must be admitted that the critics sometimes have right on their side when they say that despite all pains thus taken a large amount of time may be wasted. We do not think it therefore irrelevant to suggest to those who intend to take an active part in the congresses now imminent that they should assist the organisation of the meetings by conciseness in their communications and brevity in their speeches.

The Report of the Chief Inspector of Factories.

THE report of the Chief Inspector of Factories and Workshops for the year 1913, which has just been issued, will be welcome to all who are interested in the relation which exists between industrial employment and disease. This report bears evidence of excellently designed administration, of careful study of the conditions affecting safety and health, and of efficiency in the methods adopted to limit as far as possible the injuries which result from industrial occupations. Sir ARTHUR WHITELEGGE's period of office has been characterised by marked advances in the knowledge of industrial disease and of the methods by which it can be controlled, and his present report affords evidence of the progress which is continuously being made in these directions. Some idea of the extent of the work which devolves upon the department is shown by the number of premises which come under its supervision, this number amounting in the year 1913 to over 250,000. In these factories and workshops all the conditions affecting health are under the observation of the staff of the inspectors, who thus become responsible for pointing out defects in lighting, ventilation, humidity of atmosphere, and the safeguarding of the persons employed against accident, whether from machinery or other source of risk to life and limb; they have also to deal with the enforcement of special rules for occupations which are known to have particular risks associated with them. But beyond this it is the duty of the department to make continued search for variations in health which may have relation to industrial processes; and previously unrecognised pathological conditions are from time to time found in this way and appropriate preventive measures adopted.

Among subjects which deserve attention in the report we may refer to an account by Dr. E. L. COLLIS of illness among the workers in one factory in which it was eventually found that both lead and antimony had been concerned in producing somewhat complex symptoms in those engaged in dealing with yarn dyed with yellow chromate of lead and other yarn in which antimony salts are used. Dr. COLLIS writes that "possibly in those cases in which lead poisoning was diagnosed the symptoms were complicated by the presence of subminimal doses of antimony, and in the other cases of illness subminimal doses of lead rendered toxic doses of antimony which might not otherwise have been so." The same observer has continued his investigations into the relation between mineral dust and pneumoconiosis, but has found no reason for modifying the views he expressed in his paper on the effects of dust in producing diseases of the lungs, read last August at the Seventeenth International Congress of Medicine.[1] The paragraphs in the report relating to this subject compare the death-rates from phthisis among men engaged in working oolitic limestone, which are about 1·5 per mille, with the death-rates prevailing in Derbyshire for persons employed in and about gritstone (with free silica up to 95 per cent.), whose phthisis death-rate is over 13 per mille. The importance of maintaining close observation in respect of the dependence of miner's phthisis upon the presence of silica in the stone which is being worked cannot be overrated. Reference is again made in the report to "weaver's cough" which had previously been the subject of a special report by Dr. COLLIS during the year.[2] This malady appears to be dependent upon inhalation of a mildew, probably a particular mildew in the warp or weft. It is suggested that the introduction of antiseptics into size should solve the problem for warp threads, but it is no use for weft threads, which are not sized. The malady is only occasionally found, and it is evidently one which should be borne in mind by all engaged in the weaving industries. Account is given of 70 cases of anthrax which were reported during the year with 7 deaths. This number is in excess of those of previous years, a fact due to increase in the cases of disease contracted from wool, probably East Indian wool; and reference is made to the tests of the Anthrax Investigation Board to decide whether steam disinfection of wool is practicable or not. In one case salvarsan was inoculated but with fatal result, apparently due to inability of the kidneys to eliminate the salvarsan after its action on the anthrax bacilli had been completed.

The above are necessarily illustrations only of the subject matter which is dealt with in the report of the Chief Inspector of Factories and in the valuable communications presented by Dr. T. M. LEGGE, the medical inspector. They suffice to show the comprehensiveness of the work of the department and the thoroughness with which it is being performed. It cannot be doubted that this work contributes substantially to improvement in the health of the large section of the population engaged in industrial occupations. It is particularly satisfactory that the spirit of research should so thoroughly permeate the labours of Sir ARTHUR WHITELEGGE and his colleagues. This is no red-tape administration, but an enlightened struggle to relieve the drawbacks and guard against the injuries which are incidental to factory life.

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[1] THE LANCET, August 16th, 1913, p. 489.
[2] THE LANCET, Feb. 22nd, 1913, p. 551.

Annotations.

"Ne quid nimis."

THE MEXICAN SITUATION FROM A MEDICAL STANDPOINT.

FOR some time certain political parties in the United States have been calling loudly for a war with Mexico on the plea of "vindicating the national honour." With the rights or wrongs of the dispute between these nations we are not at present concerned, but our attention has been drawn to the medical aspects of the position by an article published recently in the *American Journal of Tropical Diseases and Preventive Medicine* entitled "The Mexican Situation," by Dr. Howard D. King, of New Orleans. In this article the attitude of these bellicose parties in the United States is sharply criticised, it being evident that while calling for war they do not realise the grave consequences that must inevitably follow. In Dr. King's opinion all thinking men must view with horror and dread the prospect of such a war, with the certainty of war's grim ally, pestilence, also taking the field. Behind the looming presence of war stalk the shadows of epidemic disease. The medical profession in the United States is aware, for example, that two of the most serious epidemic maladies, plague and yellow fever, are at present exhibiting signs of activity which forebode mischief, more particularly to the Southern States of the Union. It is common knowledge that the prospect of one or both of these dangerous diseases extending beyond their present limits is just now causing some anxiety in official circles; and it is generally recognised that if the United States are plunged into a war with Mexico the spread of the infection would be greatly facilitated. The present plague situation in America was dealt with in THE LANCET of July 11th, and the position as regards yellow fever is also somewhat gloomy, judging from current reports. If it became necessary to land large bodies of non-immune troops on the shores of Mexico, in parts of which yellow fever is endemic, it would be very difficult to prevent the development of a serious epidemic of the disease, with probable conveyance of the infection to the Southern ports of the United States. The way in which small-pox and enteric fever harass armies in the field is now well recognised, and although vaccination on the one hand and antityphoid inoculation on the other might diminish the dangers, yet it is more than probable that these beneficial procedures would not be generally carried out during the bustle and excitement of dispatching an expeditionary force to the seat of war. Small-pox is already prevalent on the Northern frontiers of Mexico among the refugees from those parts of the interior where military operations are being carried out. At the port of Vera Cruz, now occupied by a United States force of soldiers and sailors numbering nearly 30,000, small-pox is also prevalent; and diarrhœa and dysentery, it is reported, have increased of late. Apart from the ravages of epidemic and other diseases there would have to be reckoned, in the event of a war, the deaths and disablements upon the field of battle. The medical mind can best appreciate the horrors of war and the advantages of dealing with disputes by diplomacy rather than by the edge of the sword. The soldier takes a more sanguine and professional view of the case, and naturally prefers a settlement by force of arms. In this connexion Dr. King remarks: "War means devastation and blood, depopulated fields and smoking villages; the acclamation which the conqueror wins from one portion of his species is answered by the curses and execrations of another; the laurels of the warrior are always bedewed with the tears of widows and orphans; the delusive splendour, the proud and imposing array with which he contrives to gild the honours of his profession, are but the pomp and retinue of the Prince of Terrors; Disease, the warrior's faithful ally, is the King of Terrors." It is greatly to be hoped that, in spite of the cavils of political malcontents, President Wilson will persevere as far as practicable in his peaceful policy, which will ultimately assure in all probability the deliverance of the United States from what Dr. King designates as "a most frightful visitation of epidemic disease." The recent retirement of ex-President Huerta from Mexico should remove many of the obstacles to peace and thus prepare the way for a satisfactory settlement of the protracted dispute between these two determined nations; at the least it should postpone for a time the threatened war and its direful consequences.

CLARET AS A BEVERAGE.

WHEN, for varying reasons, a wine is to be selected because it contains the least amount of sugar, of alcohol, and of acid, the choice should obviously fall upon claret, for analysis shows that the percentage of these substances is lower in Bordeaux than in any other wines. It is quite a common impression, however, that the white wines of the hock and moselle type are more innocent than other wines in these three respects. That is not the case, although we are finding no fault with these wines. To not a few people claret appears to be a sour-tasting wine simply because it contains no sugar to speak of, which in other wines masks the acidity present. Claret is practically a finished wine—that is to say, the original sugar of the grape is for all intents and purposes completely changed by fermentation, and as the original strength of the Médoc grape juice as regards sugar is relatively weak, the amount of alcohol produced is correspondingly small. The production of claret is perhaps the simplest example of wine making. It is purely fermented grape juice with nothing added and nothing deducted. When therefore a wine becomes the subject of a prescription it would appear that we are on safe grounds dietetically when we recommend claret if qualities like freedom from sugar and from an excess of alcohol and acidity are characteristics to be sought for. When a stimulant is ordered it has been customary for some time past to recommend weak whisky and water as a safe beverage. The danger here, however, is that of overstepping the alcoholic allowance. The simplicity of genuine claret is accountable for its well-known sensitiveness, which perhaps has brought it into disfavour in some quarters. Its flavour is peculiarly evanescent and delicate and is easily spoiled by careless management. But the fact that claret will not keep sound more than a few hours after opening precludes the suggestion of preservatives, including extraneous alcohol, being added. As a rule the best clarets are the most liable to become unsound. The coarse fortified clarets keep longer for obvious reasons. Connoisseurs value sound claret for its exquisite flavour and delicacy of character. Not so many years ago the fine wines of the Médoc, including all the superior classed growths or "crus," but not them alone, commanded relatively big prices, but nowadays many excellent wines can be purchased showing all the pleasing qualities of the genuine high-class Médoc wines at a very reasonable figure. It is surprising that the medical profession and the public do not realise this fact. Excellent genuine wines, especially of the vintages 1907 and 1909, from the best districts of Médoc and St. Emilion, and embracing such well-known growths as the Châteaux Giscours, Beychevelle, Léoville, Cos d'Estournel, L'Evangile, and others, are now to be had at prices not exceeding 30*s*. per dozen, while there is a large choice of wines of exceptional quality at considerably lower prices. No apology for bringing these facts forward is needed in view of the dietetic virtues of these wines. It is very doubtful, according to our experience, based in part upon laboratory examination and in part upon the evidence of the palate, whether the supply of sound and really superior clarets was ever so good, so cheap, and so plentiful as it is now, and from the point of view of alcohol it is safe to say that if for beverage purposes at dinner or luncheon claret were substituted for diluted spirits, liqueurs, and so forth, there would be much less alcohol consumed, to the unquestionable advantage of the consumer. Also the æsthetic palate would gain by those agreeable wholesome impressions which good Médoc wines are invariably capable of giving, and appetite is thus helped. A sound claret, according to the foregoing considerations, may almost be placed in the temperance category by reason of its low alcoholic strength, and we are not disposed to think that in drawing attention to the good value in choice clarets now available to the public any possible injury to the cause of temperate living, which all reasonable persons have at heart, can arise.

A NEW TEST FOR MORPHINE.

IN a preliminary report, published in the *Medical Chronicle* for July, Dr. T. H. Oliver, medical registrar at the Manchester Royal Infirmary, describes a new reaction of morphine and its salts which may turn out to be exceedingly useful to analysts. If to a solution of morphine a few cubic centimetres of hydrogen peroxide and a little strong ammonia are added, and the mixture be stirred with a piece of copper wire, the previously colourless solution assumes a deep port-wine tint, with a considerable evolution of gas. The test is said to be exceedingly delicate, for 0·00002 gramme of morphine can be readily detected; but in dealing with very small amounts it is necessary to add a few drops of potassium cyanide solution to remove any blue colour (from the copper) which may otherwise mask the port-wine tint. It is important not to add the cyanide before the copper, as this may prevent the occurrence of the reaction. The reaction is also a very delicate one for copper, detecting 0·00001 gramme easily. It will occur if monomethylamine (NH_2CH_3) be substituted for ammonia, but not with dimethylamine, nor with caustic soda. Codein and dionin (methyl and ethyl morphine respectively), which are indistinguishable from morphine by ordinary tests, do not give the reaction; apomorphine gives an orange colour. The following alkaloids give negative results: strychnine, brucine, atropine, narcotine, heroin, cocaine, nicotine, cephalin, emetine, veratrine, physostigmine, pilocarpine, and conine. Other substances were tried as substitutes for copper but proved useless, such as aluminium, iron, nickel, calcium, the salts of manganese, cobalt and iron; and colloidal selenium and rhodium. The red substance which is formed is insoluble in the ordinary morphine solvents, and also in ether, chloroform, and toluol; and the whole of the morphia is changed, for none can be recovered from the ammoniacal solution. Dr. Oliver does not state whether the presence of body fluids, such as urine, blood, serum, cerebro-spinal fluid, interferes with the reaction; but as his report is stated to be preliminary this point will doubtless engage his attention, for its medico-legal importance is obvious. We have tried the test described and obtained confirmatory results.

MERYCISM.

MERYCISM, or chewing the cud, is a rare phenomenon among human beings. It was first recorded in 1681 by Fabricius ab Aquapendente; he and some other writers of that epoch saw in it the mark of the beast, and even noted that merycising patients were apt to grow horns on their foreheads and the like. Nowadays it is more reasonably held to be an atavistic phenomenon, not due to an unfortunate maternal impression during pregnancy, as Peyer (1685) believed, or to gastric antiperistalsis, such as occurs in vomiting (Haller, 1764), or to pylorospasm. In 1904 Presslich collected 145 cases of merycism from the literature; most of the patients were adults, but it appears that some 30 were children; and Schippers has found records of 10 instances in infants to which he adds[1] two new cases of his own. It is a curious fact that men seem to be more prone to rumination than women except in infancy; Wirtz found 10 women among over 140 merycists, while 7 out of 11 ruminating infants were girls. The habit is generally adopted between the ages of 5 and 15, and it appears that heredity, or perhaps imitation, is an important factor in its occurrence; it is not evidence of feeble-mindedness or idiocy, as has sometimes been supposed. Yet it is very much under the control of the nervous system. Some patients indulge in merycism only after partaking of certain kinds of food—vanilla ice, for example, or liquid and not solid food; infants may cease to ruminate when exhibited for demonstration purposes, or when an X ray examination is to be made. It appears that there is an optimum quantity of food that should be given to these infants when merycism is to be provoked, which was about four ounces in one of Schippers's patients. There is no doubt that in infants the habit is a bad one, leading to chronic malnutrition. In none of the 12 recorded cases was the child up to its proper weight, and in several the temperature of the body was often subnormal, falling as low as 91° F. The outlook is less favourable when the merycism is combined with dyspepsia, as is often the case with infants. The object of treatment in these patients must be to prevent the child from merycising. It should be given food that it does not care to ruminate, in quantities (usually small) that do not provoke rumination; being a neuropath, it should be kept quiet, and it is not likely to benefit by the exhibition of sedative drugs. As for adult merycists, Schippers indicates the necessity of determining how far rumination is akin to vomiting—a question that might well be answered by X ray examinations. It appears that the adult patients themselves clearly distinguish between the two processes. To describe merycism as a reflex movement, or even as a "Bedingungsreflex" as described by Pawlow and Czerny, a conditional reflex dependent upon an association of ideas rather than any direct stimulus, does little to advance our comprehension of the phenomenon. Schippers points out that both his infant patients might begin to chew the cud while asleep, waking up at once, while Wirtz states that merycism may go on during dozing; yet the true associative reflex can only occur in persons who are awake.

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[1] Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam, 1914, 785.

MR. H. G. WELLS ON MEDICAL BIBLIOGRAPHY.

Mr. H. G. Wells's paulo-post-future tense is somewhat hard on the arduous achievements of the present. In his "World Set Free" we are told that in 1970 or so the world will have been benefited by vast improvements in surgery and medicine, and these will have been in great part the result of a tremendous system of research indexing, which, while preventing the medical men of the future from doing the same work twice, will constantly tend to keep them in touch with the newest discoveries and the most notable recent cases, as well as all the ancient literature of their subject. "Of course, the present indexing of research is in itself a very big work, and it is only now that we are getting it properly done," says Mr. Fowler, an English or American surgeon of the far future, addressing his eminent Russian patient in the presence of the Italian director and the Finnish matron of "the new station for surgical work at Paran, high in the Himalayas." In old days, according to Mr. Fowler, indexers were a mean paid race; in 1970 they work for the love of the thing, a truly damnable practice from the darkened point of view of 1914. Mr. Fowler's patient, a Russian cripple, has contributed to world-thought the scarcely original discovery that self must be abolished in favour of society, and Mr. Fowler is about to kill him up in the surgically aseptic Himalayas, and he is glad to talk a little shop before succumbing! It is only natural. But is it fair for 1970 thus to patronise 1914? True, we grant that in 1970 probably a thousand persons will be "thinking hard" to one who did so in 1900, but we must still set up our feeble protest against this wholesale snowing under of the present. Medical indexing is not neglected among us. Apart from the magnificent "Index Medicus" of the Surgeon-General in Washington, the whole of the medical literature stored in London has been very fully indexed. True, only author-titles of books and pamphlets, and subject-titles derivable from these, are indexed in England, but in America magazine and periodical articles are recorded as well. If, as Mr. Wells seems to suggest, every case, every operation, every separate subject, mentioned in the course of every article were indexed, the resulting mass of catalogue cards would be so enormous as to stultify research itself. The researcher would be lost in a labyrinth of facts, most of which would be of very little use to him. At present the indexer, who in England is not, as a rule, specifically paid as such, knows that the title of a modern article is fortunately a fair indication of its contents, but, like a faithful worker, he rarely omits to mention any salient subject which may be recorded therein. Thus in recording the title of an ancient book—say Alpinus on the Medical Botany of the Ancient Egyptians—the good indexer who is also an alert reader will mention the balm of Gilead, with which that remote work greatly deals, but the shortness of human life will prevent him from indexing the whole work page by page. What Mr. Wells's Mr. Fowler should have said is that in 1970 an index of all important cases is being kept, and not an index of every subject in every book. Cases are the gist of medical literature.

UMBILICAL SINUS DUE TO A PIN IN THE APPENDIX.

In the *Australian Medical Journal* of May 23rd Dr. R. M. Downes has reported the following curious case. A healthy-looking girl, aged 3½ years, was seen. The history was that 16 months previously a small protuberance from the umbilicus was noticed. It discharged pus two days later, and this subsequently occurred from time to time. The discharge at times had an offensive odour, but not suggestive of bacillus coli infection. From the apex of the protuberance a probe could be passed for about 1½ inches in a caudal direction. The sinus was filled with bismuth paste and under the X rays was seen to form a small pouch situated slightly to the right of the middle line. Methylene blue injected into it did not appear in the urine. She was shown at the Pediatric Society as a case of cyst of the urachus. The sinus was curetted and mopped with tincture of iodine without benefit. The discharge continued at intervals for a year, the longest period at which it was absent being four months. At the end of this time it was more profuse than ever, and it was decided to adopt radical measures. Under chloroform the probe was now found to pass 4 inches in a lateral and downward direction, and for the first time a mass was felt in the right iliac fossa. A vertical incision was made to the right of the middle line, the anterior layer of the rectus muscle was opened, the muscle was displaced laterally, and the probe was cut down on. The tract was found to be internal to the transversalis fascia, the sinus was swabbed with iodine, and the layers were united. The discharge continued to be profuse and the mass remained unchanged. Three weeks later the incision was reopened and extended. On cutting down on a director in the sinus a black and coated pin was found, and the peritoneal cavity was opened. The mass previously felt was partly due to a structure adherent to the peritoneal end of the sinus and running towards the cæcum. This was first thought to be a Meckel's diverticulum, but after the mass was separated it was found to be an appendix arising from a cæcum of the fœtal type. The appendix was removed, the wound sutured as far as possible in layers, and the septic umbilicus cut out, a small tube being left in for 24 hours. Recovery was uneventful. The appendix and surrounding tissues were very thickened. The distal end, where it was adherent to the sinus, was bulbous, and closed from the rest of the appendical lumen by an impermeable stricture. The mucous membrane showed signs of previous inflammation. No communication with the umbilical sinus could be demonstrated. A urachal cyst may have been present into which the pin was accidentally introduced, and the appendix may have become adherent to the peritoneum covering this cyst internally. But Dr. Downes thinks it much more likely that a swallowed pin passed into the appendix—an occurrence which would perhaps be more easy owing to the latter's fœtal type of origin from the cæcum; that it then caused inflammation of the appendix, with adhesion to the parietal peritoneum in the region of the umbilicus, and finally passed through into the abdominal wall, where it remained embedded, the resultant pus finding a route of egress by the umbilicus. In either case it is curious that so much inflammatory change in the appendix and fixation of the cæcum should not have given rise to abdominal pain or intestinal disturbance.

TEMPERATURES IN SCHOOL CHILDREN.

IN continuation of the series of Research Memoirs of the Drapers' Company, the statistical department of University College, London, has issued a contribution on national deterioration entitled, "A Statistical Study of Oral Temperatures in School Children, with especial Reference to Environmental and Class Differences."[1] It is the joint production of Mrs. Mary H. Williams, M.B., Miss Julia Bell, M.A., and Professor Karl Pearson. Most of the materials for this investigation were collected by Dr. Mary Williams in the course of her duties as medical inspector of schools in Worcestershire. They include the taking of the temperatures of nearly 3000 children, record being kept of the age, weight, and height of the children individually. They were also examined clinically with respect to the presence or absence of definite disease, and were classed accordingly. The diagnosis was wholly independent of the temperatures, the object being to test how far temperature may be relied on as an indication that further examination as to pathological condition was required. In order to compare the physical condition at stated ages of boys in elementary schools with that of boys of a different social class appeal was successfully made to the headmasters of Winchester and Charterhouse. Similar comparison of the girls was secured through the courtesy of the headmistress of the great public schools at St. Andrews, and of the lady superintendent at the Royal Soldiers' Daughters' Home at Hampstead. The results of medical inspection respecting the relation of pulmonary tuberculosis to rheumatism among school children are very interesting. The authors explain that diagnosis was based on the following characters. Pulmonary tuberculosis was indicated by physical signs alone, not symptoms; the common signs found being persistent localised basal dulness with râles. Rheumatism was diagnosed on: (*a*) clear history of "growing pains"; (*b*) presence of mitral disease; (*c*) history of chorea. As far as practicable, inquiry was made as to the occurrence of tuberculous or rheumatic affections in either or both of the parents. In summarising the results of their investigation the authors affirm the existence of a real and marked difference between the children of the upper and lower classes, the temperatures of the poorer children at the several ages being undoubtedly the higher. No observations of these conditions were practicable at the public schools, but the authors suspect this higher temperature to be due to the greater prevalence in the poorer classes of "puerile phthisis" and rheumatism. The rheumatism is probably of a markedly hereditary character; the puerile phthisis appears to be also partly hereditary, but it is also partly due to greater risk of infection in some of the primary schools, or to an environment favouring the development of an infection received elsewhere. With regard to the high temperatures recorded in certain of these schools, the authors suspect that they run through epidemics of puerile phthisis at different seasons and with different degrees of severity. An important statement is noteworthy with reference to rheumatism and phthisis in early life. The authors agree in affirming that no child is affected with both these conditions; the two poisons appear to be antagonistic. Dr. Williams states that in the thousands of children she has examined she has never seen a case in which she was certain that the two diseases coexisted in an active stage, and only two cases in which she was doubtful on this point. The observation agrees with a previous statement by Sir Dyce Duckworth that one of the most remarkable features of the arthritic diathesis is its resistance to the inroads of tuberculosis. Dr. R. H. Miller, of the Paddington Green Children's Hospital, is also quoted by the authors as writing that rheumatism and tuberculosis are very seldom found active in the same subject. There is apparently some evidence that the one infection tends to protect against the other, but we do not agree with the author's conclusion that pulmonary tuberculosis is a common disease in childhood, since other basic conditions, such as bronchiectasis and collapse, would have to be excluded in such an inquiry as this.

THE SIMULATION OF ANEURYSM BY OTHER AORTIC AND CARDIAC DISEASES.

X RAYS have aided largely the diagnosis of thoracic aneurysm. Mediastinal growths can in a majority of instances be thus distinguished from aneurysm. There are, however, certain aortic conditions which closely resemble aneurysm. Usually the conditions are of syphilitic origin—a syphilitic aortitis. General aortic dilatation may show marked episternal pulsation. Again, as Dr. Carey F. Coombs points out,[1] arterio-sclerosis may imitate aneurysm, and so, also, may cases of aortic dilatation associated with aortic valvular incompetence. In all these cases some of the physical signs of aneurysm are produced. There is on either side of the manubrium sterni a strip of dulness extending as far as two fingers' breadth beyond the sternal margin on the right and rather less on the left. Pulsation is visible at the inner ends of the second and third right intercostal spaces. Often the aortic second sound is accentuated, even when followed by a diastolic murmur. Occasionally, if the aortic valves are incompetent, hæmoptysis may occur. Sometimes pressure signs are present. There may be inequality in force of right and left carotid or radial pulses, but this is due to locally distributed aortitis at the site of exit of these vessels from the aorta. Of cardiac conditions which resemble aneurysm, those associated with mitral stenosis are of interest. Pressure signs may be caused by enlargement of the left auricle, such as paralysis of the left recurrent laryngeal nerve due, it is suggested, not to direct contact with the auricle but rather to the pushing up by the auricle of the pulmonary artery, and it is this structure which nips the nerve between it and the aorta. Two instructive cases of such paralysis are recorded. Less familiar pressure signs arising from the same cause are inequalities in the radial pulses; pressure upon the left bronchus; pupillary inequality; and, finally, even dysphagia. A screen examination of a case presenting the latter symptom showed diversion of the bismuth stream to the right at the level of the auricle, whilst there was delay at the level of the cricoid cartilage. Attention is also directed to the fact that hypertrophy of the conus arteriosus of the right ventricle may simulate aneurysm. Distinction in all these cases may be arrived at, we suppose, with some certainty if all the factors of the case be taken into account, but X rays furnish, by their power of excluding aneurysm in suspect cases, a powerful final corroborative factor.

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[1] London: Dulau and Co. Pp. 124. Price 6s. net.

[1] Medical Press, May 13th, 1914.

EPIDEMIC ALOPECIA AREATA.

BALDNESS in its ordinary form has not been held to be a definite infective condition. Certainly no definite causative organism has been found. It has been suggested that alopecia areata is not infective, but there is some difference of opinion amongst dermatologists, and an epidemic of alopecia areata has been described by Haldin Davis in the *British Journal of Dermatology* (1914, xxvi., 207) which certainly suggests an infective origin in some cases. The epidemic broke out at an orphanage for girls, of whom there were 300, all under the age of 14. It was first noted in March, and in June there were 174 cases, amongst which were two foster-mothers and a servant-maid. The patches in the head resembled ringworm, but the author was emphatic that this was not the condition. The patches were not entirely bald; there were some stumps of hair which were swollen at the free end and which did not come out easily. The hairs which were left were found to break with difficulty (unlike ringworm), and within the hair, near the seat of fracture, was an opaque substance which was doubtless concerned in the condition and which was due to some infection, the organism of which, however, could not be discovered. There were no scurf and no parasites in the cases. The condition was suggested by the writer to be alopecia areata, but not of the ordinary type. The treatment adopted was vigorous and successful. The hair was washed with methylated spirit and soap, then an ointment was rubbed in consisting of beta-naphthol and sulphur. Massage of the head was given. In the severer cases a blistering fluid was applied, and in eight cases the scalp was shaved. By October all the cases were cured. In the following March a similar outbreak occurred. There were 30 cases. Hairs from 15 of these cases failed to show evidence of ringworm. In six weeks this second epidemic was ended.

THE BRITISH PHARMACEUTICAL CONFERENCE.

THE number and quality of the papers communicated at the fifty-first annual meeting of the British Pharmaceutical Conference, which was held at Chester this week, bear evidence of the continued usefulness of an organisation which has contributed largely to the advancement of pharmaceutical science during the last half century. The President's address consisted mainly of an epitome of the work that has been devoted in recent years to the study of the chemistry of plants and their products, and in view of the position held by Mr. E. H. Farr among workers in this domain his suggestion that problems of materia medica should be considered by a pharmaceutical committee representing the medical profession and pharmacy, and that the funds proceeding from the sale of the British Pharmacopœia should be devoted exclusively to defraying the expenses connected with its production, including the investigations required in that connexion, is worthy of respect. But it is a suggestion that connotes some financial compensation for the General Medical Council. Of the papers read at the Chester meeting several are of direct interest to medical practitioners, notably those which refer to anæsthetic ether and the prescribing of strychnine in combination with alkalies. Although not recognised by the British Pharmacopœia, anæsthetic ether is largely prepared from industrial methylated spirit, the high price of that made from rectified spirit having of late years been the cause of the increased use of the former. As a matter of fact, methylated ether is in use at all the large London hospitals, and a paper by the chief pharmacist at Guy's Hospital, in which the results of the scrutiny of a number of samples of methylated ether are stated, is therefore of especial interest, while it is satisfactory to know that anæsthetists can continue to use the cheaper product as a substitute for that manufactured from rectified spirit, which is subject to a high Excise duty. It seems clear, from the communication on the incompatibility of solutions of strychnine with alkaline substances, that the limits within which these may be dispensed without fear of precipitation and consequent danger are by no means so wide as those within which preparations of nux vomica may be mixed with alkalies. These communications serve to show how pharmacy can assist medicine, and other papers furnish material which, indirectly at least, can be utilised to advantage in medical practice.

Sir Ronald Ross, K.C.V.O., F.R.S., will deliver the biennial Huxley lecture at the opening of the winter session at Charing Cross Hospital Medical School on Oct. 1st.

AT a meeting of the council held on July 16th Sir John Tweedy, F.R.C.S., late President of the Royal College of Surgeons of England, was elected President of the Medical Defence Union, vice Dr. Edgar G. Barnes, retired.

Sir StClair Thomson has been elected an Honorary Fellow of the American Laryngological Association. The American Laryngological Association is a select body, the number of Active Fellows being strictly limited, and the list of Honorary Fellows very restricted, up to the last meeting Chiari, of Vienna, Massei, of Naples, Moure, of Bordeaux, and Sir Felix Semon comprising the list.

THE Registrar of the General Medical Council has received a copy of a despatch from His Majesty's Consul-General at Rio de Janeiro stating the conditions under which persons holding foreign diplomas are permitted to practise medicine, surgery, and dentistry within the Federal District. This will be incorporated in the next edition of the pamphlet published by the Council giving the conditions under which persons qualified in their own country may practise abroad, and in the meantime the Registrar will be pleased to show the despatch to anyone who calls at the Council office, 299, Oxford-street, London, W.

IMPERIAL CANCER RESEARCH FUND.

The annual meeting of the supporters of the Imperial Cancer Research Fund took place on Tuesday, July 21st, at the Examination Hall, Queen-square, Bloomsbury, the Duke of BEDFORD presiding.

There were present among others Sir R. Douglas Powell, Sir Thomas Barlow, Sir Rickman J. Godlee, Sir William Church, Sir W. Watson Cheyne, Captain Sir John Shelley, Sir John Tweedy, Professor G. Sims Woodhead, Dr. F. W. Andrewes, Dr. John Tatham, Sir Frederic Eve, Dr. J. A. Ormerod, Dr. E. F. Bashford (general superintendent), Dr. J. A. Murray, Dr. W. E. Bullock, Dr. Sternberg, and Mr. F. G. Hallett (secretary).

Report of the Executive Committee.

The report of the executive committee was presented by Sir WILLIAM CHURCH. In this report Mr. F. G. Hallett, the secretary of the Fund, briefly summarised the proceedings of the year, mentioned the changes in the personnel of staff and workers, and enumerated the publications from the laboratories during the year. The details of the pathological and research work were given to the meeting in the report of Dr. E. F. Bashford, the general superintendent.

The Report of the General Superintendent.

Dr. Bashford's report mentioned first a diminution in the claims to "cure" cancer which had been brought to the notice of the Fund. He stated also as a result of many experiments during the year that "up to the present time, even in the laboratory, the only way in which rabbits, guinea-pigs, rats, and mice can be freed with certainty of transplanted and often of spontaneous tumour is by early removal." The number of experimental investigations has been decreased during the year as some of the tumour strains on propagation duplicated the behaviour of other strains. The experiments on heredity are being continued, and the biochemical investigations have been further developed during the year, while the observations on the specific properties of the tumour cells have gone to show how independent these cells are of influences proceeding from the environment, the etiological issues being thus further narrowed to alterations proceeding within the cell mechanism itself and not awakened by external factors.

Statistics.

With regard to the statistics of cancer the report said:—

> The insistence in 1905 on a more detailed study of age-incidence has been completely justified and has rendered a further statistical report superfluous. Many new facts are revealed—e.g., it is confirmed that the rates of mortality for different organs at different ages are similar for the two sexes, while the separate organs vary widely among themselves, some showing a curve rising to a maximum only at the end of life, others a curve with a maximum earlier and followed by a fall to the end of life, and yet others two maxima at different age-periods. These peculiarities must be of the utmost importance in elucidating the nature of the disease.
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> The separate tabulation of deaths in institutions enables a comparison to be made between areas where institutions are common and where they are rare, and thus brings out the fact that they contribute to raise the number of deaths assigned to cancer. This separate tabulation also shows that no comparison between deaths in hospital and deaths outside is possible; such a comparison has, however, in the past often been used, and the increase in deaths from cancer in hospital statistics advanced as proof of a true increase of cancer in the population generally. The tabulation of deaths in institutions shows also that a higher proportion of males than females seek the aid of such institutions, and also that the ages at death are lower than in the general population. The explanation probably is that where the breadwinner is attacked resort to hospital becomes quickly more essential than when this is not the case.
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> As regards the increase in the number of deaths assigned to cancer, it is quite justifiable to make such a crude statement as that the number of deaths has increased in 1911 for females to 1088 per million living in 1911 as compared with 508 in 1860, and for males to 891 from 200 during the same period. It is also justifiable to express these facts in another way (also crudely)—namely, that of women attaining the age of 35, 1 in 12 was recorded as dying of cancer in 1889, but 1 in 7·4 in 1911, and of men 1 in 21 in 1889, but 1 in 9·7 in 1911. This latter statement also brings out more clearly how the male rate has been overtaking and approximating to the female. However, these figures ought not to be set out, as they still are, before the public without any qualification, and interpreted forthwith as a demonstration of the reality of the increase of cancer.
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> Both methods show the approximation of the male to the female death-rate and also raise the question of why the increase, if real, should affect one sex more than the other; but both lump all cases of cancer together, a proceeding which, if excusable in 1889 because nothing else was possible, is quite a misleading and erroneous thing to do to-day.
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> It is not proposed to refer in detail to the real or apparent increase of cancer, since modern statistical methods were applied by independent investigators to the new data at a recent meeting of the Epidemiological Section of the Royal Society of Medicine, when also the subject was fully discussed. Suffice it to say that the increase in the number of deaths is not uniform for the different parts of the body and that for some parts, notably the uterus, an actual fall is persistently evident since 1902. For this organ diagnosis is relatively easy. Therefore, the number of cases treated probably approximates more closely than in other sites to the absolute number, and the effects of successful surgery are showing themselves in diminution of the deaths. For other parts of the body the increase may be apparent, for yet others real, although it is as yet impossible to decide. All the statements widely circulated in the newspapers as to the increase of cancer as a whole should be ignored, and attention only paid to those in which the different parts of the body are considered apart.

Cancer Areas and Cancer Houses.

In the concluding part of the report Dr. Bashford went thoroughly into the question of "cancer areas" and "cancer houses," pointing out that the determination of whether cancer is more frequent in certain houses is very much more complex than the simple arithmetic of enumeration.

"All the details of the population," he said, "not only of the 'cancer houses,' but also of the other houses in the same neighbourhood, must be known as regards numbers living in each house, sex, age, nature and site of the growth, duration of stay, occupation (environment and irritation), habits (alcohol, tobacco). Economic considerations must also be taken into account, since a house may be sought after by old people who have to content themselves with old or insanitary buildings because of the low rental, or a house may be let to couples without children, or may be frequented by aged lodgers. It has been shown above by experiment that hereditary influence cannot be summarily dismissed; further, the presence of other diseases cannot be ignored. The duration of stay is essential to determine whether the disease was acquired on the spot or brought from one district to another, but the long duration of the disease and the movements of population present peculiar difficulty to obtaining this information. The influence of occupation may overlap or be of more or less importance than habits such as indulgence in alcohol, tobacco, or diet. Very important will be the time relation between series of cases—viz., whether they succeed one another rapidly or are so distributed in time that this relationship has as little significance as the aggregation in families or in houses. Account must be taken of the fact that the frequency recorded to-day is very much greater than it was 50 years ago."

The report then gave details of an investigation conducted by Dr. Bashford into the well-known instances of cancer attacking certain houses and streets. The original examples brought forward by the late Dr. Law Webb having been shown to break down under analysis of the data, the report gave an account of visits paid by the superintendent to the different localities described respectively in 1898 and 1903 by Mr. D'Arcy Power as suggesting an endemic infection. It was difficult to recollect the evidence and test the statements, but the conclusion of the report was that the endemicity was not established. Mr. Power had already suspected that the age factor explained the apparent position, for in both village communities the higher ages were unduly in excess. Of the last case inquired into the report said:—

> It has been deemed desirable to make an independent inquiry into a case which attracted widespread attention recently as the result of an address by Sir Thomas Oliver, published in THE LANCET of April 4th of this year, and widely commented upon in the lay press. He stated that his attention had been drawn to a short street in a small town in which between the 15 years 1893 and 1908 19 persons and one dog had died from cancer. In some of the houses two or three cases had occurred. Since in nearly all the patients there was no hereditary history of the disease, the large number of deaths among successive occupants suggested that the matter is more than a coincidence. Commenting on "cancer-houses" Sir Thomas Oliver wrote: "It is not an agreeable subject, and many medical men are of opinion that cancer germs lurk in houses."
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> The street referred to by Sir Thomas Oliver is in the town of Ayr. The attention of the Imperial Cancer Research Fund was drawn to it in 1908 as the result of a letter addressed by a lady to the late King Edward VII. The data obtainable in 1908 did not justify an investigation. The lady continued to make inquiries, and wrote to various Government departments in London and Scotland, as well as to prominent members of the medical profession, and in 1912 published an article in the *Ayrshire Post* entitled "Observations on Cancer Areas." This article was a memorandum she had submitted in 1908, amplified and modified as the result of her experience and inquiries. As the result of correspondence and an interview it appeared that the lady, whose mother had died from cancer, held strong views that cancer is an infective disease; that she had been called upon to investigate it; and that in her opinion the alleged frequency of cancer in the street referred to was due to its dissemination from paupers in the workhouse through the agency of mice and fleas, which came into houses in the winter time. Inquiries were made early in 1912 of the local authorities in Ayr, from which it appeared that they had inquired into the statements and did not agree with the importance attached to them. In consequence of Sir Thomas Oliver's address it seemed desirable to make an investigation on the spot, and a visit was made to Ayr, where every facility was given by the town clerk, the burgh medical officer, and the medical officer of health for the county. As a result the following facts set out in the table were obtained.
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> Reference to the table will show that it includes two duly authenticated cases of cancer not given in the lady's catalogue, and transfers three cases to the correct houses, including one to the opposite side of the street. Cancer as a cause of death is not upheld in at least 11 out of the 22 instances advanced. The dog is omitted in view of the fact that all the weight of scientific evidence is against the communication of cancer from one species to another, and also because no information could be obtained about it beyond the original assertion that it was a young dog, 4 years old. In the 11 cases in which nearer examination bears out the statement that death was due to cancer, the site alleged did not agree with that given on the death certificates, although for three of these five there is merely confusion between the primary and secondary site, and in the other two the vague statement of "bowel" is replaced by the accurate statement of "rectum" and "prostate." For a sixth case, where the site was not stated originally, a definite reference to "stomach" has been obtained. The comparison of the facts as actually found, with those on which Sir Thomas Oliver based his statements, is made in the table.

Table showing Death of and Cases of Tumours in Cancer Area, Ayr, from 1892–1912.

House.	Case.	Age.	Occupation.	Died.	Alleged site of cancer.	Certified cause of death.
A	1	64	Clergyman.	1894	Bowel.	Epithelioma of rectum.
	2	—	Maid. Operation.	1912	Stomach.	Still living.
B	3	65	Wife of manufacturer.	1893	Womb.	Cancer of uterus, 1 year.
C	4	86	Widow of doctor.	1897	Stomach.	Morbus cordis. Cardiac failure.
	5	80	Gent. No relation.	1908	Kidneys. Not verified.	Renal following upon with cystitis.
D	6	73	Retired.	1892	?	Cancer of stomach, 4 months.
	7	78	His wife.	1911	Breast.	Cancer of lung.
E	8	—	Lady feared to have cancer.	1912	Internal.	Still living, not ascertained.
	9	69	Hatter's wife.	1899	Not in list submitted.	Cancer of lung.
F	10	—	Lady.	1900	Breast.	Died in Glasgow.
G	11	71	Lady.	1896	Womb.	Cancer of stomach.
	12	80	Brother of above.	1898	Bowel.	Cerebral anæmia. Senile decay.
	13	—	Sister of above.	1908	"	Not found.
	—	—	New people bought house.	1907	—	—
	14	—	Young lady. Operation.	1910	Breast.	Still living.
	15	84	Father of above.	1911	Stomach.	Cancer of stomach.
	16	71	Mother.	1912	—	Paralysis agitans. Carcinoma of left lung.
H	17	60	Wife of lawyer.	1895	Arm.	Scirrhus of mamma, 2 years.
	18	79	Lawyer.	1906	Bowel.	Malignant tumour of prostate gland.
	19	—	Daughter.	1908	Face.	Still living.
I	20	25	Lady.	1894	Womb.	Not found.
J	21	72	Wife of missionary.	1899	Breast.	Scirrhus of mamma.
K	22	49	Lady.	1899	—	Not found.
L	23	—	Dog, aged 4.	1909	—	" "
	24	55	Chemist.	1900	Not in list submitted.	Malignant disease of tongue (6 months) and sublingual and pharyngeal glands (2 months.

> In three out of the six houses the occurrence of one death was confirmed; in only one out of four houses the claim of two deaths was confirmed; for one house for which three deaths were claimed only two were confirmed, and for another house for which six deaths were claimed three were confirmed. In the first house with two verified deaths the first death occurred in 1892 and the second in 1911, after an interval of 19 years; in the second house with two verified deaths the first death occurred in 1895 and the second in 1906, or after 11 years; in the only house with three cases the first death occurred in 1896, the second in 1911 (or 15 years later), and the third one year after the second. When the cases are considered as they occurred from year to year, for the years 1892 to 1898, there was one death each year. 1899 and 1900 each had two deaths. The years 1901 to 1906 showed no deaths. 1907 to 1910 each showed one death. 1911 and 1912 had two deaths, and in 1913 and up to the present date there has been no death.
>
> Since wide publicity has been authoritatively obtained for the statements of a cancer street in Ayr, it may be mere justice to point out the true significance of the facts.

The street referred to is broad and contains the best type of residential detached and semi-detached villas with gardens front and back. It runs east and west, so that the fronts of the houses on one side of the street and the backs of the houses on the other side of the road face south. Hence, there is no excuse for attaching significance to the south side as "the shady side" in the way that has been done. On the south side there are 23 houses, on the north side 18, and all the houses are occupied. The householders are mostly retired business men or belong to one of the professions; several are widows. The average age is therefore higher than in other parts of the town. A glance at the table giving the details of the cases claimed as cancer shows the youngest aged 25 and 49 were not confirmed. The age of the youngest verified case is 55, and four alleged cases are aged 80 or above, although only one could be verified. In view of the very small numbers—13 persons in all—it is not advisable to attempt an age and sex distribution; the facts may therefore be stated crudely in the absence of exact information as to the age and sex of each of the inhabitants of the street. The total number of houses is 41, in six of these cancer had occurred over a period of 21 years, there being intervals of 19, 11, and 15 years between the first and second cases in each of three houses, and in the third house a possible third case occurred one year after the second. The total population of the street is 246, or an average of six persons per house. For 21 years this gives a population of 5166 with 13 deaths, or a crude death-rate of 2·5 per 1000. The total deaths in Ayr in 1913 were 44, or 1·3 per 1000. The death-rate for Scotland in 1911 at the age of 45 is 2·04 per 1000, and inquiries on the spot show that 45 is not an under-estimate of the age of the population in the street.

The higher recorded incidence in this street is explained partly by the high age of its inhabitants as contrasted with other areas inhabited by factory hands and miners with young children. The coincidences and accidents inseparable from a disease of such frequency suffice to minimise the significance of the numbers recorded, and by the fact that cancer is more than ten times as frequent at 70 as it is at 30 or 35 years of age.

As sanitation and water have also been incriminated, it may be pointed out that under a very enlightened municipality, the Burgh of Ayr in recent years has entirely rebuilt the whole drainage of the town at a cost of some £120,000, making it as perfect as sea drainage can be. Further, over 800 more or less insanitary buildings have been removed, and all this in a small seaside and residential town of less than 34,000 inhabitants.

The history of how the idea of a "cancer street" originated and became current in the town of Ayr is as interesting and instructive as the manner in which in the course of a few years it acquired the standing of a scientific statement of fact, publication in a leading medical journal, and consequently widespread currency in the lay press as a duly authenticated instance of "cancer houses."

THE TREASURER'S REPORT.

The report of the honorary treasurer, Sir W. Watson Cheyne, for the year ending June 24th, 1914, was a fairly satisfactory one. Unlike last year, he was unable to report any increase in the total receipts for the researches. He said:—

> For the first year since 1896 we have received no legacy except a small balance of less than £2 from a legacy received in a previous year, but the receipts again include the sum of £500 which has been paid in advance by Mrs. Streatfield as part of a promised legacy of £2000. This being the second amount of £500 kindly contributed by her under the conditions of the original scheme, Mrs. Streatfield now becomes a member of the general committee.
>
> The total number who have subscribed to the Fund during the year is 146, as compared with 137 in 1913, but whereas the number of small contributions has increased, those of higher amounts have somewhat declined. It is due to the personal efforts of our President in appealing for new subscribers that there is this increase in the number of subscriptions. On the general principle that legacies may be averaged over a period of years, it is to be hoped that during next year the income from this source will be increased.
>
> The expenditure, including all items, amounted to £6491 6*s.* 9*d.*, being rather less than last year, but as in last year's account an item of £622 appeared for expenditure on fittings, the general working expenditure this year must be said to have increased by about £358. In this sum, however, is included the salary of an additional assistant, Dr. Bullock, who took up his duties in August.
>
> Every care has been taken during the year to safeguard the expenditure, whilst at the same time all the requirements of the general superintendent in regard to the necessities of research have been met.
>
> The total expenditure has exceeded the fixed income of the fund from investments by £1444 18*s.* 9d.

THE RESOLUTIONS OF THE MEETING.

The adoption of the report was moved by Sir **WILLIAM CHURCH**, seconded by Professor **SIMS WOODHEAD**, and carried unanimously.

Sir **RICHARD DOUGLAS POWELL** moved, and Sir **JOHN TWEEDY** seconded, a vote of thanks to the executive committee, sub-committees, and treasurer of the fund. This was carried unanimously.

Sir **W. WATSON CHEYNE** proposed a vote of thanks to the Duke of Bedford, president of the fund, which was seconded by Sir **FREDERIC EVE**, and carried unanimously.

The Duke of **BEDFORD**, in a brief reply, referred to the magnificent services rendered to public health by Mr. Joseph Chamberlain.

MEDICINE AND THE LAW.

A Question of Liability.

IN the Blackpool county court his honour Judge Sturges tried an action recently in which Mr. F. C. Sprawson sued Mr. T. Firth, a theatrical manager, for £17 6*s.* 6*d.* as fees in connexion with an operation which he had performed upon the defendant's wife. The defendant alleged that he was not liable to Mr. Sprawson but to Dr. John Stewart, the patient's medical attendant, upon whose advice Mr. Sprawson had been consulted and had operated. The defendant had, in fact, after the proceedings were commenced, made payments to Dr. Stewart, and a sum of £10 had been handed to Mr. Sprawson and had been paid into court. The defendant in support of his case produced an account from Dr. Stewart for £35, which purported to include the plaintiff's fees. Dr. Stewart in evidence said that he had received two sums of £10 on account, the second of which he had handed to the plaintiff. He denied that he was liable for Mr. Sprawson's fees, or that it was customary for a medical man who advised that a surgeon should be called in to be so liable. Mr. Sprawson said that he had booked the debt to the defendant and not to Dr. Stewart. He had given no authority to Dr. Stewart to collect his fees, and not having done so should not look to him for payment. He had never followed such a course with regard to medical men for whom he performed operations, and it was not customary to do so. For the plaintiff it was argued that in the absence of any authority given by him to Dr. Stewart the plaintiff's position was not affected by Dr. Stewart's act in sending an inclusive account for fees. His honour held that he would take the document produced into account in deciding the case, and he was of the opinion that this being so the defendant's position in looking upon Dr. Stewart as the person to whom the money was to be paid was correct. He was further of the opinion from his own knowledge that there was no certainty of custom such as the plaintiff and Dr. Stewart alleged. He therefore gave judgment for the defendant. It was intimated that there might be an appeal.

A Sham Medical Practitioner Convicted.

At the recent Hants assizes a person whose name was given as Hugh Munro McLeod Mackenzie was convicted upon an indictment charging him with giving certificates of the cause of death without being entitled to do so. The prisoner was stated to possess no medical degree, but to have at one time studied medicine at Edinburgh. He appended to his signature on the certificates the letters B.M., L.R.C.S., L.R.C.P., and the court was informed that a medical man bearing the names given above and now practising in South Africa was the possessor of the degrees indicated. The prisoner had practised in Portsmouth in 1910, but the question of his qualification had been raised and he had moved to Southampton, where the offences charged had been committed, and where he had been placed on the panel under the Insurance Act. Mr. Justice Ridley took into consideration the ill health of the prisoner, and sentenced him to be imprisoned for one month.

An Unqualified Person Pretending to Treat Cancer.

At Altrincham recently an inquest was held upon the body of a woman, 70 years of age, who had suffered from cancer of the breast, for which she had been attended by Mr. H. Lund and Mr. J. R. Wilson, but who had since submitted herself to a man named Clay living at Hebden Bridge. This person gave evidence that he had during the past year "removed five nodules, and that there was a very diminished one left." Into that he injected a solution which he was in the habit of using, after which the woman fainted. He spoke of having his "limitations," and said his treatment applied to "external cancer" only, an "internal development" being beyond his reach. The coroner asked him, "How did you know that the cancer was not internal?" and he replied that he did not know. Mr. Wilson gave evidence that death was partly due to cancer and might possibly have been hastened by shock and acute cellulitis of the tissues. He had no doubt that the shock from the cellulitis was a contributory cause of death. In any case the woman would probably have died from carcinoma of the breast. The jury said that they felt a "strong suspicion" that death was largely attributable to Clay's treatment, but found, as they had been advised by the coroner, a verdict in accordance with the medical evidence, adding "We think Mr. Clay is deserving of censure and that his profession to relieve, if not absolutely to cure, cancer is a very dangerous proceeding." The coroner appears to have then exhorted Clay to desist from professing to cure cancer, his observations ending with the words "Oh, Mr. Clay, a great responsibility rests upon you, and I do ask you not to do it." Whether the coroner's words, which hardly seem to answer the description of "censure," or the possibility of a verdict of manslaughter ensuing upon another occasion, will deter Mr. Clay remains to be seen. The latter contingency is the one which Mr. Clay would be well advised to consider.

Death under an Anæsthetic and a Difficult Question.

An inquest held recently at the Dorset County Hospital showed how difficult a question may have to be decided by a surgeon called upon to operate in a case where the death of the patient under the operation is likely to ensue and to entail an inquest, and where in the absence of an operation continued suffering for the patient is certain and death, more or less immediate, is at least equally probable. The deceased, C. J. Russell, was a carpenter, 65 years of age, a stout man, well known to the police and the Poor-law authorities where he lived as a heavy drinker for 20 years. He was sent to the hospital from the workhouse suffering from strangulated hernia, which was relieved by treatment, but the patient was very desirous of an operation, as he suffered frequently and considerably. Mr. W. B. Cosens, the surgeon who ultimately decided to operate, had known the man and been aware of his habits for many years, and was very unwilling to operate owing to the obvious danger due to the patient's condition, but was equally of the opinion, as he informed the jury, that if the man left the hospital and had a bout of intoxication strangulation would again take place, with the probable necessity for immediate operation in hopeless circumstances. Accordingly Russell was put to bed for 17 days and every possible preparation made to meet the danger which the administration of the anæsthetic would entail. It was given by the house surgeon, whose qualification and experience for the task were proved by Mr. Cosens, but before the man was thoroughly under its influence dangerous symptoms were observed, breathing eventually ceasing, and in spite of everything that could be done the patient died. The coroner placed the matter fairly before the jury, pointing out that the risk was recognised by the surgeon, but that he acceded to the patient's request for an operation, hoping that he might be able to relieve him from pain. The jury, a member of which showed by an observation that he, too, knew the deceased and his habits, returned a verdict in accordance with the evidence, that "the deceased came by his death through failure of the heart, such failure occurring while the said Charles Russell was under the effect of an anæsthetic properly administered, preparatory to an operation for strangulated hernia."

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.

THE annual meeting of this association was held on July 14th and 15th. During the early part of the meetings Dr. JAMES CHAMBERS, the President, occupied the chair.

Dr. T. B. HYSLOP, the chairman of the committee appointed in connexion with the Mental Deficiency Bill, presented a report which showed that the committee had been concerned with the Elementary Education (Defective and Epileptic Children) Amendment Bill and in the provisional regulations in pursuance of the Mental Deficiency Act. It was hoped that the Mental Deficiency Act Regulations, which came into force in April, would be simplified when re-issued. Several recommendations were made in the report. The Central Association for the Care of the Mentally Defective took the necessary steps to register itself as an incorporated association, and a memorandum of association had been drawn up for submission to the Board of Trade. The composition of the future council had been postponed until next year. Following upon a short discussion, Dr. Hyslop said that difficulties were likely to arise, unless care was taken, from persons with no knowledge of mental conditions seeking to define the borderline between insanity and mental deficiency on the one hand, and on the other between mental deficiency and health. It was for the association to take a definite stand on this point and present a guiding memorandum.

The report was approved, and the committee reappointed to continue its work. The President (Dr. Thomson) and Dr. Bedford Pierce (chairman of the status committee) were appointed to act with the subcommittee of the Board of Control. The consideration of the report of the committee *re* the status of British psychiatry and of medical officers was deferred until the following day.

Dr. Chambers, who now retired from the presidency, and the other officers of the association were heartily thanked for their services during the year now ending.

Dr. **CHAMBERS** then introduced the new President, Dr. David G. Thomson, superintendent of the Norfolk County Asylum.

Dr. **THOMSON** acknowledged the honour conferred upon him, and announced that the association's divisional prizes had been awarded to Dr. Eager and Dr. Macphail, and the bronze medal to Mr. J. C. Wootton. He then delivered his presidential address, which consisted of a review of the legal and medical arrangements for dealing with the insane during the past hundred years, "a period," he said, "which is given point to by the fact that this is the centenary year of the establishment of the Norfolk County Asylum, the oldest county institution of its kind in the country. Hence the stages in the evolution of treatment of mental alienation find illustration within these walls." Dr. Thomson then traced the origin and progress of the laws relating to the insane. The first legislation in favour of the insane poor was, he said, "Wynne's Act," enacted in 1808, which enabled each county to build and equip institutions out of the county funds, so that parishes on a weekly *per capita* payment could send insane poor to the county institution instead of to gaols, houses of correction or industry, but only a few counties used this permissive power—namely, Nottinghamshire, Norfolk, Lancashire, Yorkshire, and Staffordshire. A special committee of the House of Commons in 1815 took evidence as to the deplorable state of the insane in privately owned madhouses, and even in a few public asylums, and Dr. Thomson gave some lurid specimens of this evidence. The committee's report resulted in an Amending Act, which sought to "enforce" the provisions of the Act of 1808. "But it was not," he said, "until the early years of the reign of Victoria—namely, in 1845—that the Act was passed which has been styled the 'Magna Charta of the Insane,' as it gave them for the first time full legal protection and supervision. Other beneficent forces were also by this time at work, for Dr. Gardiner Hill, of Lincoln Asylum, had begun a great campaign against the use of restraint. His strenuous contention that chains and manacles and other coercive measures were unnecessary and harmful led people to declare that he was himself insane, but his views ultimately prevailed, and for many years mechanical restraint has been abolished, except in occasional instances for surgical reasons. 1841 saw the foundation of the Medico-Psychological Association by a few doctors concerned with the study of insanity, its etiology, prevention, and treatment. The chained lunatic now became a patient. County and borough asylums came into being all over the kingdom, private asylums for the well-to-do put their houses in order, and every institution for the insane was put under the control of the Commissioners in Lunacy. Gradually the view that insanity was a possession of the devil or a metaphysical manifestation not amenable to medicine gave place to the conviction that it had a physical basis like other affections, and this altered view has resulted in great advance of knowledge, for alienists have not been slow to apply the great advances in general medicine to this specialty." Dr. Thomson then alluded to the more recent work of the Medico-Psychological Association, the system of training, certification, and registration of mental nurses; the adoption by six Universities of its recommendations of special post-graduate training and diplomas in psychiatry, on lines similar to those in public health and tropical medicine. "If the association," he said, "had done nothing beside provide better doctors and nurses for mental disorders, its existence would have been justified and its labours gratefully acknowledged by the public." Among the topics more particularly dealt with in this section of the presidential address were the following: the disabilities of asylum medical service and the resulting dearth of candidates; the absence of provision for early incipient forms of mental disorder without the dreaded legal certification and committal to the insane wards of workhouses and asylums; the absence of properly equipped clinics for this purpose for the ante- and post-graduate training of young men in psychiatry; the Mental Deficiency Act; the Elementary Education (Defective and Epileptic Children) Bill; and the unsatisfactory state of the law with regard to crimes committed by insane persons. The address was received with marked favour.

A paper on Intrathecal Treatment of General Paralysis was contributed by Dr. E. **MAPOTHER** and Dr. E. **BEATON**, who described the technique which they adopted and discussed whether anatomical inaccessibility of the spirochæta constituted, by itself, a complete explanation of the refractory character of the disease to treatment.

On Wednesday, July 15th, a paper was read on the Detection of a Dysentery Carrier, by Mr. H. **SALTER GETTINGS** and Dr. **ETHEL WALDRON** (of Wakefield Asylum). The dysentery bacillus was discovered in the loose stools of a patient who displayed no other symptoms; there had been no blood or slime, and no rise of temperature. There had been one or more cases in her ward for four years, and soon after her transfer to another ward there was a fatal case of the disease. Since 1913 there had been in the asylum 14 cases with five deaths. The bacillus was only found after a patient hunt.

Dr. A. W. **DANIEL** read a paper on the Undesirable Results Arising from Continued Use of Scopolamine Hydrobromine or Hyoscine. He gave an account of the symptoms, both physical and mental, which followed the administration of the drug. There was great excitement, with visions of members of the patient's family undergoing torture, progressive weakness of legs and arms, and rapid and progressive wasting, so that the loss of weight became serious. Imbeciles showed marked intolerance to the drug, and in any patient repeated injection should be avoided. Morally, the patients having the drug became very untrustworthy and sometimes were suicidal. Withdrawal of the drug, which was the only cure for the symptoms, brought about a speedy improvement and restoration of the body weight.

The association then proceeded to discuss, and for the most part to approve, the Report of the Committee on the Status of British Psychiatry and of Medical Officers of asylums. The report contained the following resolutions:—

> That it is desirable that provision be made for the detention of patients in psychiatric clinics for a limited time without certification.
>
> That it is desirable that any form of detention under modified conditions, such as proposed in the Lunacy Bill of the year 1905, should not be confined to private houses, but should be extended to all institutions for the insane and clinics duly approved for the purpose.
>
> That it is desirable that the provision already made for the reception of voluntary boarders into licensed houses and registered hospitals be extended to public asylums and psychiatric clinics.
>
> That the psychiatric clinics be for the reception and treatment of voluntary boarders and notified persons.
>
> That it is desirable that patients be admitted to county asylums direct from their homes without being of necessity taken to the Poor-law institutions—in this way making better use of the existing hospital accommodation at these asylums.
>
> That urgency orders be made to apply to Poor-law cases.
>
> That it is desirable that neighbouring asylums be enabled to establish and maintain joint laboratories.
>
> That it is desirable that a standing committee of the association be formed to be called the "research committee," and to have as its object the encouragement and guidance of original work in psychiatry.

It was agreed to forward copies of the report to the Home Secretary, the President of the Local Government Board, the members of the Board of Control, the chairmen and clerks of asylum boards and visiting committees, and the corresponding officials in Scotland and Ireland, and other persons interested in the subject, at the discretion of the President of the association.

ROYAL COMMISSION ON VENEREAL DISEASES.

AT the forty-sixth meeting of the Royal Commission on Venereal Diseases evidence was given by Dr. Svond Lomholt, surgeon at the Municipal Hospital at Copenhagen, regarding the methods adopted for dealing with venereal diseases in Denmark. The principle has been to provide free treatment and to render it as easily accessible as possible. As early as 1773 a rescript provided for free treatment of all poor persons suffering from venereal diseases in one of the provinces of Denmark, and similar regulations were made from time to time until by an Act of 1874 it was laid down that every person should be entitled to free treatment for venereal disease without regard to his ability to pay. In reality little was done to make this right to free treatment of practical value until 1906, when an Act was passed which contained a provision compelling the municipalities to arrange easy access for free consultation and treatment for all persons suffering from venereal disease. Since that date, especially in Copenhagen, in which town probably 80 per cent. of the disease occurring in the country is to be found, a great deal has been done. Very complete hospital facilities have been provided, and in addition there are three public consulting-rooms for contagious and venereal diseases, at one of which evening consultations are held. Twelve municipal doctors (two of whom are women) have also been appointed for the purpose of giving free treatment of venereal diseases. The experience has been that patients have shown themselves very ready to take advantage of these facilities. In some directions compulsory measures have been adopted. A doctor treating a case of venereal disease is required to point out all the consequences of the disease, and there is also provision for securing that persons suffering from venereal disease shall continue their treatment. Dr. Lomholt thought that this latter provision had been very useful. A system of confidential notification of venereal diseases is in force. The names and addresses of the patients are not notified, and the cases are identified only by numbers, and the notification is consequently only of use for statistical purposes. Dr. Lomholt has made a critical examination of the published figures, and showed that they could only be accepted with a good deal of reserve.

Mr. Charters J. Symonds, consulting surgeon at Guy's Hospital, giving evidence, laid stress on the need for largely increasing the means available for treating venereal diseases. He thought that existing institutions should be utilised as far as possible, and that these, together with any additional provision which might be made, should be linked up with Insurance Committee areas and with panel doctors. Evening clinics should be provided at every centre. It would be necessary that a scheme of this kind should receive adequate subsidies from the State. Mr. Symonds advocated the formation of a National Society which should supervise the selection of lecturers, the scope of teaching, and the publication of books and pamphlets, with a view to the education of the public respecting venereal disease. Such a society, he thought, should be voluntary and should be ready to assist the Government in any measure of which the Government approved. He would propose that the Royal Society of Medicine should nominate persons to serve as a committee of this national society, and that a definite sum of public money should be placed in the hands of that committee. With regard to the question of notification, Mr. Symonds said that the experience of other countries showed that in the present state of mind of the people notification was ineffective; it led to greater concealment of disease and tended to drive sufferers to quacks' treatment. He thought there could be little doubt that notification would help towards suppression of disease, but it was necessary to wait until people had become educated in the matter; the demand for notification and international action might then come from the great mass of the population of this and other countries.

Mr. Arthur J. Evans, honorary surgeon to the Liverpool Stanley Hospital, was of opinion that if better facilities for treating venereal diseases could be provided at the general hospitals the spread of the infection would be reduced. The establishment of such a clinic to a hospital should, he thought, be financed and controlled by the State and not by the representative of the charitable public. Mr. Evans stated that in his capacity as visiting surgeon to the Brownlow Hill Poor-law Infirmary a very large number of venereal cases were brought to his notice. He thought that in Poor-law patients the general percentage of the later manifestations was very high. In the male sex this was exceedingly striking, and in a larger number of cases permanent incapability of earning a livelihood was produced; many also were beyond any hope of benefit even by modern treatment. A great difficulty in regard to Poor-law patients arose from the fact that there was no law to compel these patients to remain till properly cured; patients frequently left the hospital while still in an infectious state. As medical adviser to an important shipping company, Mr. Evans said that it was his experience that a great deal of venereal disease was introduced from abroad, and it was his opinion that this continuous introduction of disease into this country should undoubtedly be brought under control. He recommended that the Board of Trade should take steps to warn and explain to seamen and others dangers of contracting venereal disease, and the danger of infecting others of the community. The importation of disease would, he thought, be greatly lessened if sailors were aware of the risks encountered in foreign ports, and especially in the tropics.

JUNE AT HOME AND ABROAD.

At Home.

JUNE, although subject to sudden lapses into a chilly spring temperature, after violent local thunderstorms, was one of the brightest months on record, and was also generally dry, when the total amount of rainfall is considered, while the hot and cold spells so counterbalanced each other that the mean temperature for the whole month differed very little from the average. In London, at all events in the southern and south-western districts, the chief meteorological event was the violent and fatal thunderstorm that occurred on Sunday, the 14th. During its passage certain localities had more than a month's rainfall within three hours, while others had a mere sprinkle. The heaviest falls were at Wandsworth, Wimbledon, and Richmond. In Richmond Park Sir Frederick Treves measured as much as 3·7 in., and this appears to be the greatest quantity at any given spot. At the Kew Observatory the amount was only 1·3 in., and the aggregate for the month, 1·96 in., was 0·29 in. less than the normal. The Kew temperature, which was rather low during the earlier days of the month, became very high after the middle and again towards the end, and the mean maximum equalled 69°, against an average of 68°, while the mean minimum of 51° was identical with the normal. None of the night readings were very low and none oppressively high. The highest afternoon maximum occurred on the 30th, the figure being 84°, and the lowest, only 56°, was recorded on the 8th. Every day but the 6th brought its share of sunshine, and the total number of hours was no less than 256, which represents rather more than two hours per day above the normal. The more central districts of London were also very sunny; at South Kensington the figure was as high as 258 hours. On the south coast the records were naturally higher; at Brighton and also at Ventnor the total was 280 hours. The Midlands, as represented by Bath and Nottingham, had a temperature about the same as Kew, but at Harrogate and Buxton the readings were a few degrees lower, the mean maximum being 64° and the mean minimum 47° at both resorts. Neither Bath nor Nottingham was so bright as London, but their sunshine was greatly in excess of the average. Some of the great cities of the north recorded as much as the more southern districts do during an average June. At Glasgow there were 190 hours, and at Manchester 192 hours. On certain parts of the south-west coast the temperature was lowered by sea fogs, and the same phenomenon seriously interrupted the sun's record. At Newquay and the Scilly Isles the sunshine was no more than 207 hours, but at Torquay it was as high as 261 hours. Torquay had a mean maximum temperature a degree lower than Kew, and a mean minimum 2° higher. At the Scilly Isles the corresponding figures were 61° and 53°. Over the south and south-west of England generally the weather was too dry. In some parts of Hampshire and Dorset the total rainfall was less than half an inch, and at Torquay it barely exceeded three-quarters of an inch. The Channel Isles were also very dry; at Jersey the rainfall was rather less than half an inch against an average of 2·09 in. Sea fog also intercepted much of the sunshine, with the result that Jersey's total was below the normal by 14 hours, the aggregate figure being 225 hours.

Abroad.

The weather on the continent was generally dry and fine, but the rain, when it did occur, was often heavier than in this country. At Paris the total fall was 2·7 in., while in many other parts of France, where thunderstorms were rife, it was larger. At Biarritz it amounted to 6·8 in. Paris had more hot days than London, and the mean maximum temperature was 71°. The mean minimum, however, was the same as at Kew. Brussels had the same mean afternoon warmth as Kew, while at night the temperature was 2° lower. The relatively low minimum was due to some very cold nights early in the month. In spite of some outbursts of great heat in Germany the mean maximum temperature at Berlin was no higher than at Paris, although the mean minimum was 3° above that at the French capital. Only 10 or 11 days were at all rainy, but the aggregate fall was rather large, amounting to more than 3 in. The west and south-west of France underwent some great changes in temperature. From time to time the shaded thermometer nearly touched 100°, but as a whole the month was not particularly warm. At Biarritz, where the temperature was 91° on the 3rd, the average maximum was no higher than at Kew. On as many as five days there was no greater heat than 59°. The nights were with very few exceptions warm, and the mean minimum was as high as 55°.

The most sudden change of temperature of the month, which came on the 8th or 9th, was much less felt on the continent than in this country, where a strong northerly wind, reaching the velocity of a gale over a considerable area, sent the thermometer down to the level of early spring for a time. As a whole there was little wind, and the general movement was from some point between west and north rather than from between south and west, such as occurs during an average June.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN the 97 English and Welsh towns with populations exceeding 50,000 persons at the last Census and whose aggregate population at the middle of this year is estimated at 18,120,059 persons, 8744 births and 4018 deaths were registered during the week ended Saturday, July 18th. The annual rate of mortality in these towns, which had been 12·1, 12·7, and 11·5 per 1000 in the three preceding weeks, slightly rose to 11·6 per 1000 in the week under notice. During the 13 weeks of last quarter the mean annual death-rate in these towns averaged 13·8, against 13·1 per 1000 in London during the same period. Among the several towns the death-rate last week ranged from 3·7 in Ealing, 4·6 in Walthamstow, 4·9 in Devonport, 5·2 in Ilford, and 5·6 in Eastbourne, to 16·9 in South Shields, 17·2 in Preston, 17·7 in Middlesbrough, 20·1 in Blackpool, and 23·5 in Bootle.

The 4018 deaths from all causes were 18 in excess of the number in the previous week, and included 406 which were referred to the principal epidemic diseases, against 444 and 394 in the two preceding weeks. Of these 406 deaths, 151 resulted from infantile diarrhœal diseases, 110 from measles, 73 from whooping-cough, 34 from diphtheria, 26 from scarlet fever, and 12 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 1·2 per 1000, and was 0·1 more than the rate in the previous week. The deaths of infants (under 2 years) attributed to diarrhœa and enteritis, which had been 79, 116, and 112 in the three preceding weeks, rose to 151 last week; of this number 38 were registered in London, 11 in Sheffield, 10 in Birmingham, 7 in Birkenhead, 7 in Leeds, 6 in Liverpool, 5 in Manchester, and 4 each in Walsall, Bootle, and Newcastle-on-Tyne. The deaths referred to measles, which had been 144, 130, and 139 in the three preceding weeks, fell to 110 last week, and included 35 in London, 21 in Liverpool, 12 in Manchester, 7 in Sheffield, 7 in Leeds, and 3 each in Birmingham, Oldham, and Newport (Mon.) The fatal cases of whooping-cough, which had been 93, 95, and 77 in the three preceding weeks, further declined to 73 last week, of which 19 occurred in London, 9 in Liverpool, 3 in Bradford, and 3 in Leeds. The deaths attributed to diphtheria, which had been 35, 64, and 30 in the three preceding weeks, rose to 34 last week, and included 11 in London, 4 in Birmingham, 3 in Liverpool, 2 in Bournemouth, and 2 in Manchester. The deaths referred to scarlet fever, which had been 30, 23, and 22 in the three preceding weeks, rose to 26 last week; of which 5 were recorded in Manchester, 4 in Sheffield, 3 in Salford, 2 in Liverpool, and 2 in Sunderland. The fatal cases of enteric fever, which had been 13, 16, and 13 in the three preceding weeks, were 12 last week, and included 4 in London.

The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had steadily increased from 2862 to 3109 in the nine preceding weeks, further rose to 3126 on Saturday last; 430 new cases were admitted during the week, against 440, 442, and 414 in the three preceding weeks. These hospitals also contained on Saturday last 1069 cases of diphtheria, 230 of whooping-cough, 33 of measles, and 33 of enteric fever, but not one of small-pox. The 1021 deaths from all causes in London were 101 in excess of the number in the previous week, and corresponded to an annual death-rate of 11·8 per 1000. The deaths referred to diseases of the respiratory system, which had declined from 163 to 111 in the four preceding weeks, rose to 128 in the week under notice, but were 9 below the number in the corresponding week of last year.

Of the 4018 deaths from all causes in the 97 towns, 172 resulted from different forms of violence and 317 were the subject of coroners' inquests, while 1288 occurred in public institutions. The causes of 44, or 1·1 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in London and in its 14 suburban districts, in Sheffield, Leeds, Bristol, Bradford, Newcastle-on-Tyne, and in 58 other smaller towns. Of the 44 uncertified causes of death, 12 were registered in Birmingham, 8 in Liverpool, 3 in Gloucester, and 2 each in Bootle, Warrington, Preston, Hull, and Tynemouth.

HEALTH OF SCOTCH TOWNS.

In the 16 largest Scotch towns with an aggregate population estimated at 2,293,200 persons at the middle of this year, 1216 births and 559 deaths were registered during the week ended Saturday, July 18th. The annual rate of mortality in these towns, which had been 13·8, 14·1, and 13·6 per 1000 in the three preceding weeks, further declined to 12·7 per 1000 in the week under notice. During the 13 weeks of last quarter the mean annual death-rate in these towns averaged 15·5, against a corresponding rate of 13·8 per 1000 in the 97 large English towns. Among the several towns the death-rate ranged from 10·3 in Kilmarnock, 10·9 in Dundee and in Paisley, and 11·2 in Edinburgh, to 17·0 in Coatbridge, 18·4 in Perth, and 18·9 in Hamilton.

The 559 deaths from all causes were 38 fewer than the number in the previous week, and included 58 which were referred to the principal epidemic diseases, against numbers declining from 67 to 41 in the four preceding weeks. Of these 58 deaths, 18 resulted from infantile diarrhœal diseases, 15 from whooping-cough, 12 from measles, 7 from scarlet fever, 4 from diphtheria, and 2 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 1·3, against 1·2 per 1000 in the 97 large English towns. The deaths of infants (under 2 years) attributed to diarrhœa and enteritis, which had been 10, 13, and 10 in the three preceding weeks, rose to 18 last week, of which 11 were registered in Glasgow, 2 in Dundee, and 2 in Aberdeen. The deaths referred to whooping-cough, which had been 18, 12, and 13 in the three preceding weeks, rose to 15 last week, and included 11 in Glasgow and 2 in Falkirk. The fatal cases of measles, which had been 7, 9, and 10 in the three preceding weeks, further increased to 12 last week; 5 deaths occurred in Dundee, 2 in Glasgow, and 2 in Hamilton. The deaths attributed to scarlet fever, which had been 7, 1, and 3 in the three preceding weeks, rose to 7 last week, but showed no excess in any particular town. The 4 deaths referred to diphtheria, of which 2 were recorded in Glasgow, were equal to the average in the three preceding weeks. The fatal cases of enteric fever were registered in Glasgow and Edinburgh.

The deaths referred to diseases of the respiratory system, which had steadily declined from 99 to 61 in the six preceding weeks, further fell to 51 in the week under notice; 21 deaths resulted from various forms of violence, against 33 and 26 in the two preceding weeks.

HEALTH OF IRISH TOWNS.

In the 27 town districts of Ireland, with an aggregate population estimated at 1,205,280 persons at the middle of this year, 574 births and 371 deaths were registered during the week ended Saturday, July 18th. The annual rate of mortality in these towns, which had been 15·7, 16·2, and 15·9 per 1000 in the three preceding weeks, rose to 16·1 per 1000 in the week under notice. During the 13 weeks of last quarter the mean annual death-rate in these towns averaged 19·0 per 1000; in the 97 large English towns the corresponding rate did not exceed 13·8, while in the 16 Scottish towns it was equal to 15·5 per 1000. The annual death-rate last week was equal to 17·2 in Dublin (against 11·8 in London and 12·8 in Glasgow), 13·5 in Belfast, 14·3 in Cork, 22·8 in Londonderry, 19·0 in Limerick, and 24·7 in Waterford, while in the 21 smaller towns the mean rate did not exceed 16·4 per 1000.

The 371 deaths from all causes were 3 in excess of the number in the previous week, and included 43 which were referred to the principal epidemic diseases, against 4 and 38 in the two preceding weeks. Of these 43 deaths, 14 resulted from measles, 14 from infantile diarrhœal diseases, 6 from whooping-cough, 5 from scarlet fever, 2 from diphtheria, and 2 from enteric fever, but no one from small-pox. The mean annual death-rate from these diseases last week was equal to 1·9, against corresponding rates of 1·2 and 1·3 per 1000 in the English and Scotch towns respectively. The deaths attributed to measles, which had been 13, 15, and 10 in the three

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING JUNE, 1914.

(*Specially compiled for* THE LANCET.)

CITIES AND BOROUGHS.	Estimated population in the middle of 1914.	NOTIFIED CASES OF INFECTIOUS DISEASE.												DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.									Deaths from all causes.	Death-rate per 1000 living.†
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cerebro-spinal meningitis.	Poliomyelitis.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Enteric fever.	Diarrhœa and enteritis (under 2 years).	Total.	Annual rate per 1000 persons living.		
LONDON...	4,516,612	—	2057	745	—	59	1	39	87	6	4	3298	7·6	—	174	24	65	120	12	104	499	1·2	5450	12·6
West Districts.																								
Paddington	142,055	—	32	37	—	—	—	2	13	—	—	84	6·2	—	—	1	4	3	1	3	12	0·9	156	11·4
Kensington	170,817	—	86	14	—	—	—	—	13	—	—	113	6·9	—	—	1	1	2	—	4	8	0·5	183	11·2
Hammersmith	124,750	—	80	9	—	—	—	—	7	1	—	97	8·1	—	—	1	1	2	1	3	8	0·7	144	11·9
Fulham	158,849	—	71	11	—	2	—	—	7	—	—	91	6·0	—	1	1	2	6	1	5	16	1·1	158	10·8
Chelsea	63,791	—	30	7	—	2	1	1	6	—	—	47	7·7	—	—	1	—	1	1	—	3	0·5	70	10·8
City of Westminster	152,346	—	114	12	—	1	—	3	9	—	—	139	9·5	—	—	1	—	3	—	1	5	0·3	167	12·0
North Districts.																								
St. Marylebone	112,892	—	39	23	—	3	—	1	10	—	—	76	7·0	—	—	—	2	1	2	2	7	0·6	128	12·0
Hampstead	86,731	—	28	9	—	2	—	—	4	—	—	43	5·2	—	—	—	1	2	—	—	3	0·4	77	9·8
St. Pancras	212,497	—	113	51	—	3	—	5	19	—	1	192	9·4	—	6	2	2	4	—	7	21	1·0	261	12·8
Islington	324,764	—	120	63	—	7	—	1	18	1	—	210	6·7	—	9	—	5	14	—	8	36	1·2	407	12·8
Stoke Newington	50,454	—	16	3	—	—	—	—	1	—	—	20	4·1	—	—	—	—	1	—	2	3	0·6	61	12·0
Hackney	223,724	—	52	46	—	1	—	4	23	—	—	126	5·9	—	1	—	8	3	—	6	18	0·8	262	12·3
Central Districts.																								
Holborn	45,861	—	18	8	—	—	—	2	4	—	—	32	7·3	—	1	—	—	—	—	—	1	0·2	71	16·2
Finsbury	83,212	—	38	14	—	4	—	1	18	—	—	75	9·4	—	20	—	—	10	—	3	33	4·1	147	18·2
City of London	17,129	—	—	3	—	1	—	—	—	—	—	4	2·4	—	—	—	—	2	—	—	2	1·2	28	17·7
East Districts.																								
Shoreditch	108,869	—	32	17	—	1	—	1	16	—	—	67	6·4	—	22	1	1	8	—	6	38	3·6	184	18·2
Bethnal Green	127,662	—	51	24	—	2	—	1	27	—	—	105	8·6	—	7	—	—	6	—	8	21	1·7	149	12·7
Stepney	273,265	—	129	66	—	4	—	3	24	—	1	227	8·7	—	45	2	10	9	—	10	76	2·9	411	16·4
Poplar	160,222	—	51	24	—	6	—	—	24	1	1	107	7·0	—	9	—	4	3	1	7	24	1·6	241	15·5
South Districts.																								
Southwark	186,941	—	166	35	—	3	—	3	25	—	—	232	12·9	—	5	3	2	4	1	4	19	1·1	260	14·6
Bermondsey	124,213	—	58	28	—	—	—	1	12	1	—	100	8·4	—	16	—	1	3	—	4	24	2·0	194	16·3
Lambeth	296,724	—	150	39	—	3	—	2	17	—	1	212	7·5	—	5	2	2	4	2	3	18	0·6	335	11·6
Battersea	167,338	—	79	18	—	2	—	1	10	—	—	110	6·9	—	2	1	4	6	—	4	17	1·1	191	12·0
Wandsworth	338,998	—	116	33	—	1	—	5	18	—	—	173	5·3	—	4	1	1	7	—	4	17	0·5	315	9·7
Camberwell	262,020	—	141	55	—	2	—	1	19	1	—	219	8·7	—	3	3	5	6	1	5	23	0·9	313	12·4
Deptford	109,182	—	95	26	—	2	—	—	19	—	—	142	13·6	—	7	—	3	—	1	1	12	1·1	125	11·8
Greenwich	96,037	—	32	27	—	1	—	—	11	1	—	72	7·8	—	9	—	3	—	—	1	13	1·4	121	12·9
Lewisham	172,433	—	75	20	—	5	—	1	6	—	—	107	6·5	—	1	1	2	7	—	1	12	0·7	151	8·9
Woolwich	122,836	—	45	23	—	1	—	—	7	—	—	76	6·5	—	1	2	1	3	—	2	9	0·8	140	12·2
Port of London	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup. † The death-rates are corrected for variations in sex- and age-constitution of the populations of the several boroughs, the population of England and Wales being taken as the standard.

preceding weeks, rose to 14 last week, and comprised 6 in Dublin, 4 in Belfast, 3 in Sligo, and 1 in Lurgan. The deaths of infants (under 2 years) referred to diarrhœa and enteritis, which had been 11, 14, and 13 in the three preceding weeks, were 14 last week, of which 6 occurred in Dublin and 6 in Belfast. The fatal cases of whooping-cough, which had been 6, 10, and 5 in the three preceding weeks, were 6 last week, and included 4 in Belfast. The 5 deaths attributed to scarlet fever, of which 3 occurred in Dublin and 2 in Belfast, were equal to the average in the four preceding weeks. The 2 deaths from diphtheria were registered in Dublin, and the fatal cases of enteric fever in Dublin and Belfast. In addition to the above a fatal case of typhus was recorded in Belfast.

The deaths referred to diseases of the respiratory system, which had been 57, 41, and 53 in the three preceding weeks, fell to 41 in the week under notice. Of the 371 deaths from all causes, 123, or 33 per cent., occurred in public institutions and 7 resulted from various forms of violence. The causes of 15, or 4·0 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the 97 large English towns the proportion of uncertified causes did not exceed 1·1 per cent.

VITAL STATISTICS OF LONDON DURING JUNE, 1914.

In the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious diseases, it appears that the number of persons reported to be suffering from one or other of the specified diseases was equal to an annual rate of 7·6 per 1000 of the population, estimated at 4,516,612 persons in the middle of the year; in the three preceding months the rates were 7·4, 6·3, and 7·5 per 1000 respectively. The lowest rates last month were recorded in Hampstead, Stoke Newington, Hackney, City of London, and Wandsworth; and the highest rates in the City of Westminster, St. Pancras, Finsbury, Southwark, and Deptford. Scarlet fever was rather more prevalent than in the preceding month; the greatest proportional prevalence of this disease last month was recorded in Kensington, Hammersmith, the City of Westminster, St. Pancras, Southwark, Lambeth, Camberwell, and Deptford. The Metropolitan Asylums Hospitals contained 3045 scarlet fever patients at the end of last month, against 3138, 2826, and 2859 at the end of the three preceding months; the weekly admissions averaged 396, against 337, 312, and 376 in the three preceding months. Diphtheria also showed a slightly increased prevalence last month; this disease was proportionally most prevalent in Paddington, St. Pancras, Stepney, Bermondsey, Camberwell, Deptford, and Greenwich. The number of diphtheria patients under treatment in the Metropolitan Asylums Hospitals, which had been 1306, 1121, and 1078 at the end of the three preceding months, had risen to 1080 at the end of last month; the weekly admissions averaged 140, against 158, 114, and 130 in the three preceding months. Enteric fever was slightly less prevalent than it had been in the preceding month; the greatest proportional prevalence of this disease occurred in Chelsea, St. Marylebone, Finsbury, Poplar, and Lewisham. The Metropolitan Asylums Hospitals contained 40 enteric fever patients at the end of June, against 66, 55, and 39 at the end of the three preceding months; the weekly admissions averaged 8, against 7 and 6 in the two preceding months. Erysipelas was proportionally most prevalent in Finsbury, Shoreditch, Bethnal Green, Poplar, Southwark, and Deptford. The 39 cases of puerperal fever notified during the month included 5 in St. Pancras, 5 in Wandsworth, 4 in Hackney, 3 in the City of Westminster, 3 in Stepney, and 3 in Southwark. The 6 cases of cerebro-spinal meningitis belonged respectively to Hammersmith, Islington, Poplar, Bermondsey, Camberwell, and Greenwich; and the 4 cases of poliomyelitis to St. Pancras, Stepney, Poplar, and Lambeth.

The mortality statistics relate to the deaths of persons actually belonging to the several boroughs, the deaths occurring in institutions having been distributed among the boroughs in which the deceased persons had previously resided; the death-rates from all causes are further corrected for variations in the sex- and age-constitution of the population of the several boroughs. During the five weeks ending July 4th the deaths of 5450 London residents were registered, equal to an annual rate of 12·6 per 1000; in the three preceding months the rates were 15·2, 13·8, and 12·9 per 1000 respectively. The death-rates last month ranged from 8·9 in Lewisham, 9·7 in Wandsworth, 9·8 in Hampstead, 10·8 in Fulham and in Chelsea, and 11·2 in Kensington, to 16·2 in Holborn, 16·3 in Bermondsey, 16·4 in Stepney, 17·7 in the City of London, and 18·2 in Finsbury and in Shoreditch. The 5450 deaths from all causes included 499 which were attributed to the principal infectious diseases; of these, 174 resulted from measles, 24 from scarlet fever, 65 from diphtheria, 120 from whooping-cough, 12 from enteric fever, and 104 from diarrhœa and enteritis among children under two years of age. The lowest death-rates from these diseases last month were recorded in Kensington, Chelsea, the City of Westminster, Hampstead, Holborn, and Wandsworth; and the highest rates in Finsbury, Shoreditch, Bethnal Green, Stepney, Poplar, and Bermondsey. The 174 fatal cases of measles were 14 fewer than the corrected average number for the corresponding period of the five preceding years; this disease was proportionally most fatal in Finsbury, Shoreditch, Stepney, Bermondsey, and Greenwich. The 24 deaths from scarlet fever were slightly in excess of the corrected average number, and included 3 in Southwark, 3 in Camberwell, and 2 each in St. Pancras, Stepney, Lambeth, and Woolwich. The 65 deaths from diphtheria were 33 above the corrected average number; the greatest proportional mortality from this disease occurred in Paddington, Hackney, Stepney, Deptford, and Greenwich. The 120 deaths from whooping-cough were 20 in excess of the corrected average, the highest death-rates from this disease being recorded in Islington, Finsbury, Shoreditch, Bethnal Green, and Lewisham. The 12 fatal cases of enteric fever exceeded by 4 the corrected average number, and included 2 in St. Marylebone and 2 in Lambeth. The mortality from diarrhœa and enteritis among children under two years of age was proportionally greatest in Stoke Newington, Finsbury, Shoreditch, Bethnal Green, Stepney, and Poplar. In conclusion, it may be stated that the aggregate mortality in London last month from the principal infectious diseases, excluding diarrhœa, was nearly 11 per cent. above the average.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been notified:—Fleet-Surgeon: R. M. Richards to the *President*, additional, for Recruiting Headquarters, temporarily. Staff-Surgeons: W. N. Blatchford to the *Pembroke*, additional, for disposal; and E. F. Ellis to the *Assistance*, vice Richards. Surgeons: F. H. Stephens to the *Victory*, additional, for disposal; A. V. J. Richardson to the *Attentive;* J. H. Burdett to the *Bulwark;* and W. Mearns and A. L. Robinson to the *Pembroke*, additional for disposal.

Surgeon George Murray Levick has been promoted to the rank of Staff Surgeon in His Majesty's Fleet (dated Nov. 21st, 1910).

ROYAL ARMY MEDICAL CORPS.

Lieutenant Basil H. H. Spence is seconded for service with the Egyptian Army (dated June 30th, 1914).

Lieutenant Pierce M. J. Brett is seconded for service with the Egyptian Army (dated July 1st, 1914).

Colonel F. C. Jones has been appointed Assistant Director of Medical Services at Tidworth, Salisbury Plain. Colonel C. Birt has taken up duty as Assistant Director o Medical Services to the Sixth (Poona) Division of th Southern Army in India. Colonel S. Westcott, C.M.G., ha joined at Portsmouth.

Lieutenant-Colonel T. H. Corkery has been appointed t the medical charge of troops at Fort Efford and Mutle District, Plymouth. Lieutenant-Colonel C. A. Lane has bee appointed to hold charge of the Military Hospital at Madra Cantonment. Lieutenant-Colonel E. M. Pilcher, D.S.O. has taken up duty as Professor of Military Surgery at th Royal Army Medical College, Grosvenor-road. Lieutenant-Colonel M. J. Sexton has been appointed Senior Medica Officer at Wynberg. Lieutenant-Colonel F. W. Hardy ha been granted six months' general leave of absence hom from Allahabad Cantonment. Lieutenant-Colonel J. J. Russel has been placed under orders for service abroad. Lieutenant-Colonel F. Begbie has joined at Maymyo. Lieutenant-Colonel S. C. Philson has been appointed to hold charge o the Military Hospital at Lucknow Cantonment. Lieutenant-Colonel S. Macdonald has taken up duty as Medical Inspecto of Recruits at Headquarters of the Southern Command Lieutenant-Colonel W. L. Gray has arrived home on leav of absence from Jullundur Cantonment.

Major H. G. Pinches has been appointed to the Militar Hospital at Sheerness on transfer from Chatham. Major W Davis has been transferred from the Military Hospital a Meerut Cantonment to Naini Tal. Major S. W. Sweetnan has been appointed Senior Medical Officer at Sheerness Major G. M. Goldsmith has been transferred from Lebon Cantonment to the Dublin District. Major J. G. Gill ha joined at Devizes. Major D. L. Harding has been transferre from the Military Hospital at Londonderry to Mullingar Major A. G. Thompson has taken up duty at Honiton. Majo H. M. Nicholls has arrived home for duty from Poon Cantonment. Major J. B. Anderson has been appointe Embarkation Medical Officer at Southampton Docks. Majo H. W. Long has been transferred from the Military Hospita at Choulston to hold medical charge of the Cavalry School a etheravon. Major F. Ashe has been appointed Specialist n Midwifery and Diseases of Women and Children to the inth (Secunderabad) Division. Major S. M. Adye-urran has taken up duty on the staff of the Military ospital at Sialkot Cantonment. Major J. Hennessy as been selected for advancement to the rank of ieutenant-Colonel. Major E. V. Aylen has been appointed enior Medical Officer at Barian. Major E. T. F. irrell has been placed under orders for service broad during the coming trooping season. Major A. H. orris has arrived home on leave of absence from the Military Hospital at Malta. Major J. Powell has been ppointed to the Egyptian Army. Major P. MacKessack as taken up duty as Specialist Sanitary Officer at Headuarters of the Eastern Command. Major F. S. Penny has een appointed to hold charge of the Military Hospital at imerick. Major J. G. MacNaught has joined the Aldershot ommand. Major C. R. Evans has arrived home on leave f absence from Malta. Major G. J. Houghton has arrived ome for duty from Sierra Leone Protectorate. Major J. C. B. Statham has been transferred from the London District to the Sierra Leone Protectorate. Major L. P. More has been appointed to hold charge of the Military Hospital at Wellington.

Captain R. Storrs has been appointed to the Military Hospital at Winchester. Captain D. G. Carmichael has been transferred from the Military Hospital at Sialkot Cantonment to Cliffden. Captain T. J. Hallinan has taken up duty at Multan Cantonment. Captain G. de la Cour has been appointed for the course of instruction for promotion to the rank of Major at the Royal Army Medical College. Captain C. Scaife has been appointed to the Northern Command on transfer from Belgaum. Captain E. Caddell has been transferred from the Dublin District to the Eastern Command. Captain W. F. M. Loughnan has joined at Hounslow. An exchange on the roster for service abroad has been approved between Captain H. O. M. Beadnell and Captain A. C. Osburn. Captain R. F. O'T. Dickinson has been appointed to the Dublin District. Captain R. C. Phelan has taken up duty in the Irish Command on transfer from Barrackpore. Captain C. H. Denyer has been transferred from the Military Hospital at Agra to the Southern Command. Captain W. K. Beaman has been appointed to the Military Hospital at York on transfer from Malta. Captain O. R. McEwen has been transferred from Multan Cantonment to the Military Hospital at Londonderry. Captain W. W. Browne has been appointed Staff Surgeon at headquarters of the Ahmednagar Brigade. Captain G. P. A. Bracken has joined at Lichfield. Captain S. Field has been appointed to hold medical charge at Queenstown on transfer from Jamaica. Captain F. H. M. Chapman has been transferred from the Military Hospital at Meerut Cantonment to Delhi. Captain A. S. Cane has been appointed to Kirkee. Captain W. E. Marshall has taken up duty at the Military Hospital, Cork, on transfer from Kinsale. Captain W. Byam has joined the Egyptian Army. Captain M. O. Wilson has been transferred from the Military Hospital at Aden to Chatham. Captain W. H. S. Burney has been appointed to Ferozepore. Captain R. A. Bryden has been appointed to hold charge of the Military Hospital at Fleetwood. Captain R. C. Hallowes has joined at Holywood. Captain F. Casement has been transferred from the Military Hospital at Lucknow Cantonment to Edinburgh. Captain P. J. Hanafin has been appointed Specialist in Ophthalmology at Dublin.

Lieutenant A. Hood has been appointed to the Military Hospital at Rawal Pindi Cantonment on transfer from Lichfield. Lieutenant J. H. M. Frobisher has embarked for service in India. Lieutenant H. W. L. Allott has been transferred from the Military Hospital at Lucknow to Bareilly Cantonment. Lieutenant M. Beddingfield has been placed under orders for service abroad during the coming trooping season. Lieutenant B. Biggar has taken up duty at Cairo. Lieutenant T. C. Sproule has been appointed to hold medical charge at West Down Camp, Salisbury Plain, on transfer from the Military Hospital at Taunton. Lieutenant H. N. Sealy has joined the Belfast District.

Indian Medical Service.

The King has approved the promotion of the following officers of the Indian Medical Service:—Lieutenant-Colonels to be Colonels: Hormasjie Eduljie Banatvala (dated April 2nd, 1914). Percy Charles Hutchison Strickland (dated May 15th, 1914).

Surgeon-General C. P. Lukis, K.C.S.I., Honorary Surgeon to His Majesty the King, has been appointed to officiate as Sanitary Commissioner with the Government of India during the absence on leave of the Honourable Major J. C. Robertson, C.I.E.

Colonel A. O. Evans, Inspector-General of Civil Hospitals in Burma, has been granted combined leave of absence home for eight months. Colonel C. J. Bamber, C.V.O., on return to duty from leave of absence, has been appointed Inspector-General of Civil Hospitals in the Punjab, vice Lieutenant-Colonel G. F. W. Braide, officiating.

Lieutenant-Colonel G. McIver Smith, civil surgeon at Ludhiana, has been selected for appointment as Civil Surgeon at Murree Cantonment. Lieutenant-Colonel D. M. Davidson, civil surgeon at Lahore, has been granted three months' leave of absence.

The services of Major M. Corry have been placed temporarily at the disposal of the Government of India for employment in the Delhi Province. Major J. G. G. Swan, civil surgeon at Jhelum, has been selected for appointment as Civil Surgeon and Professor of Forensic Medicine and Toxicology at the Medical College, Lahore, vice Lieutenant-Colonel D. M. Davidson, granted leave of absence. The services of Major M. MacKelvie have been placed at the disposal of the Government of Bengal. Major H. M. Melhuish, on return from leave of absence, has been appointed as Plague Medical Officer at Gurgaon. Major E. L. Perry has been appointed to officiate as Sanitary Commissioner of the Punjab. The services of Major R. McCarrison have been replaced at the disposal of the Foreign Department. Major W. Glen Liston has taken up duty as Director of the Bombay Bacteriological Laboratory. Major W. R. Battye has joined at Mewar as Residency Surgeon. Major H. J. Walton has been appointed Professor of Pathology at King George's Medical College, Lucknow. Major J. R. J. Tyrrell has been appointed Civil Surgeon at the Khyber. Major F. P. Mackie has been granted three months' privilege leave of absence.

Captain C. I. Brierly has been selected for appointment to hold civil medical charge at Peshawar. The services of Captain N. G. McVean have been placed at the disposal of the Government of Bombay for employment in the Civil Medical Department. Captain C. H. Cross has joined at Madras. Captain A. N. Dickson has been appointed to officiate as Agency Surgeon at Maskat. The services of Captain C. E. Palmer have been placed permanently at the disposal of the Government of the United Provinces of Agra and Oudh for employment in the Jail Department. Captain J. B. D. Hunter has been granted an extension of leave of absence home from India. Captain L. Cook has been appointed to officiate in civil medical charge at Champaran. Captain J. Kirkwood has taken up duty as District Medical and Sanitary Officer at Canara. Captain D. P. Goll has joined the Civil Medical Department of Bengal Presidency. Captain R. Kelsall has been granted leave of absence. Captain L. B. Scott has been appointed Civil Surgeon and Superintendent of the Prison at Sylhet, Assam. Captain H. G. Stiles Webb has taken up duty as Chief Malaria Medical Officer in the Punjab. Captain J. P. Cameron, superintendent of prisons at Madras, has been appointed Superintendent of the Central Prison at Coimbatore. Captain A. H. Napier has been appointed to the Bacteriological Department for duty at the Central Research Institute at Kasauli. Captain C. Newcombe has been appointed to the Chemical Examiner's Department for duty at Calcutta. The services of Captain S. C. Chuckerbutty have been placed at the disposal of the Assam Government.

Special Reserve of Officers.

Royal Army Medical Corps.

Lieutenant Eben S. B. Hamilton to be Captain (dated June 29th, 1914).

Lieutenant William Crymble to be Captain (dated July 13th, 1914). Lieutenant Alexander J. Gibson and Lieutenant Thomas W. Wylie are confirmed in their rank. Cadet Corporal George Perkins, from the Oxford University Contingent, Officers Training Corps, to be Lieutenant (on probation) (dated May 20th, 1914).

Territorial Force.

Royal Army Medical Corps.

2nd South-Western Mounted Brigade Field Ambulance, Royal Army Medical Corps: The order of precedence of the undermentioned Captains whose appointments were announced in the *London Gazette* of May 15th, 1914, to be as now shown: John Munro Dupont and Henry Norman Barnett.

East Anglian Clearing Hospital, Royal Army Medical Corps: William Redpath to be Lieutenant (dated July 18th, 1914).

Wessex Clearing Hospital, Royal Army Medical Corps: Alfred John Hopkinson Iles to be Lieutenant (dated June 9th, 1914).

3rd South Midland Field Ambulance, Royal Army Medical Corps: Henry James Drew Smythe to be Lieutenant (dated June 18th, 1914).

Attached to Units other than Medical Units.—Lieutenant Robert Henry to be Captain (dated July 9th, 1914). Lieutenant-Colonel and Honorary Surgeon-Colonel David Lennox resigns his commission, and is granted permission to retain his rank and to wear the prescribed uniform (dated July 22nd, 1914). Captain Thomas Harper resigns his commission, and is granted permission to retain his rank and to wear the prescribed uniform (dated July 22nd, 1914). Captain George B. Gill resigns his commission (dated July 22nd, 1914).

Examination for Promotion to Staff-Surgeon, R.N.

At the recent examinations held at Greenwich and London the following surgeons qualified for promotion to the rank of Staff-Surgeon: George M. Levick, Arthur T. Rivers, Thomas R. L. Jones, Kenneth H. Hole, Gilbert F. Syms, Hugh F. Briggs, Michael P. Fitzgerald, James Barrett, Gordon A. Jackson, Alfred G. Malcolm, Horace C. Devas, and Harry W. Nichols. Two of these officers—Surgeon Hole and Surgeon Syms—obtained first-class certificates, thus becoming eligible for accelerated promotion to the extent of 12 months' seniority.

Naval Medical Supplemental Fund.

At the quarterly meeting of the directors of the Naval Medical Supplemental Fund, held on July 14th, Inspector-General W. Harris Lloyd in the chair, the sum of £52 was distributed among the several applicants.

ANNUAL MEETING OF THE AMERICAN MEDICAL ASSOCIATION.

(From our own Correspondent.)

THE sixty-fifth annual meeting of the American Medical Association was held in Atlantic City from June 22nd to 26th, and proved a highly successful gathering. Atlantic City, the popular New Jersey seaside resort, is well adapted for a meeting of this character, being situated at convenient distances from the principal cities of the eastern part of the United States, and containing ample accommodation for visitors. It is also provided with buildings admirably suited to the holding of meetings. For these reasons the attendance of medical men was larger than at any previous meeting, and from the medical and scientific standpoint the papers read were, generally speaking, of a high standard.

Opening Meeting: Presidential Address.

At the opening meeting of the house of delegates Dr. **John A. Witherspoon**, of Nashville, Tenn., the retiring President, apologised for not having, through ill-health, been able to prepare an address, and the various reports were then received. Among these was that of a committee appointed to advise on an invitation from the British Medical Association to hold a joint meeting in Cambridge from July 6th to 10th, 1915. The committee held that the invitation would have to be declined, as the constitution and by-laws of the American Medical Association provided that the annual meeting should be held at some place in the United States, but suggested that the British body be invited to meet with the American body at the earliest date possible.

On Tuesday, June 23rd, at a general session, a gold medal in the name of the American Medical Association was conferred on Surgeon-General William C. Gorgas in recognition of his labours to render the Isthmian Canal zone healthy, thus making it possible to build the Canal.

Dr. **Victor C. Vaughan**, of Ann Arbor, Michigan, the President for the year, then delivered his address, in which he reviewed the service of medicine to civilisation. "We boast," he said, "of a great civilisation, but this is justified only within limits. Science more nearly dominates the world than at any time in the past. Learning permeates the masses more deeply, but credulity and ignorance are widely prevalent. In this country of nearly one hundred millions there are thousands whose greed impedes the progress of the whole, tens of thousands whose ignorance retards their own growth, and other thousands who live by crime and procreate their kind to live on generations to come. We have our schools, colleges, and universities, but our almshouses, insane asylums, and penal institutions are full. In our cities we see the palatial homes of the ultra rich, the splendid temples of trade and commerce, the slums of want and poverty, and the homes, both rich and squalid, of vice and crime. No nation in this condition can be given a clean bill of health. Our hill-tops are illuminated by the light of knowledge, but our valleys are covered by the clouds of ignorance. We have not emerged from the shadows of the dark ages. The historian of the future will have no difficulty in convincing his readers that those who lived at the beginning of the twentieth century were but slightly removed from barbarism; he will tell that the school, saloon, and house of prostitution flourished in close proximity; that the capitalist worked his employees under conditions which precluded soundness of body; that the labour union man dynamited buildings; that whilst we sent missionaries to convert the Moslem and Buddhist 10,000 murders were committed in our midst; and that a large percentage of our mortality was due to preventable disease."

Papers read in the Sections.

In the Section on Obstetrics, Gynæcology, and Abdominal Surgery a symposium on surgery of the large intestine was held. Dr. **William J. Mayo**, of Rochester, Minn., contributed a paper dealing with resection of the first portion of the large intestine and the resulting effect on its function. He said that in the past too much importance had been attributed to purely incidental changes in the position and attachment of the large intestine, bands, kinks, and adhesions of a normal character being thus given a fictitious rôle in the production of symptoms. The results of resection were good in suitable cases, patients who showed exaggerated conditions of cæcocolic stasis being relieved of these conditions. Among his own operations of this character there had been no deaths.

In the section on Surgery Dr. **Joseph Bloodgood**, of Baltimore, in a paper entitled "The Relations of the Surgeon to the Conquest of Cancer," assigned the mortality from cancer chiefly to ignorance or fear of operation, which led to delayed or bad treatment. He was in favour of a diffusion of information among the medical profession and the public through the lay and medical press. This information should be under the absolute control of responsible medical authority. He emphasised the importance of early thorough operation. The difficulty of making an early diagnosis must be met by the physician.—Mr. **Edred M. Corner**, surgeon to St. Thomas's Hospital, London, discussed the importance of the crucial ligaments in injuries of the knee-joints.[1] He believed that many injured ligaments had been overlooked, which accounted for poor functional results after fracture. He showed diagrams on the screen of fractured spines of tibiæ, and believed them to be overlooked occasionally. Portions of torn ligaments and periosteum sometimes became free bodies within the knee-joint.—Dr. **J. B. Murphy**, of Chicago, who discussed Mr. Corner's contribution, stated that it was the first of its kind considered before the American Medical Association.

In the Section on Diseases of Children Dr. **F. C. Neff**, of Kansas City, read a paper on the Feeding of Infants with Skimmed Breast Milk. He said he had found that when the fat content was reduced the digestion improved, the emptying of the stomach being facilitated. Only a temporary reduction of the fat might be necessary. Later the child might have an increased tolerance for fat. In cases of severe digestive disturbance, persistent vomiting, or pylorospasm, complete recovery often followed the removal of fat from the breast milk. The method employed by him was to obtain 24 hours' supply of breast milk, which was kept on ice, the supply of the previous 24 hours being used for feeding. The milk was placed in a rubber-stoppered bottle with a tube at the bottom for withdrawing the milk without the fat. In this way the reduction of fat could be measured.

The following officers were elected for the coming year. President, Dr. H. L. Rodman (Philadelphia); Vice-Presidents, Dr. E. S. Fairchild (Kansas City, Mo.); Dr. D. Misner R. Townsend (New York); Dr. Alice Hamilton (Chicago); Dr. William E. Darnall (Atlantic City, N.J.); Secretary, Dr. Alexander R. Craig (Chicago); Treasurer, Dr. William Alan Pusey (Chicago).

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[1] THE LANCET, May 9th, 1914, p. 1317.

Central London Throat and Ear Hospital and the Clinical Congress of Surgeons.—We are asked to say that the medical staff of the Central London Throat and Ear Hospital, Gray's Inn-road, W.C., will welcome their American *confrères* at breakfast at the Great Northern Railway Hotel, King's Cross, at 9 A.M. on Thursday, July 30th, and afterwards, at 10 A.M., at a demonstration of interesting cases at the hospital. Cards of invitation will be sent on application to the Dean.

Home and Foreign Notes.

(FROM OUR OWN CORRESPONDENTS.)

MANCHESTER.

New Central Branch of the Royal Infirmary, Manchester.

THE Central Branch for Accidents and Out-patients of the Royal Infirmary, which has been built in a convenient situation in the centre of the city and which has cost £25,000, will be opened in a few weeks. The buildings are practically complete, and they are now being furnished. On the ground floor is a large vestibule from which there open rooms for consultation and for the examination of out-patients, medical and surgical. The several rooms have communicating doorways, so that the medical officers need not pass through the vestibule to reach an adjacent room. There is a special accident room, in addition to two rooms each with two beds for cases requiring observation. On the same floor there is an X ray installation and an operating theatre.

A Babies' Hospital.

Arrangements have been made by the medical women of Manchester for the provision on a small scale of a babies' hospital for the more effective treatment of babies and very young children suffering from diarrhœa and other gastro-intestinal disorders. It is felt that in a general hospital it is not always possible to give that attention to those cases which is necessary, while there is but little accommodation for nursing babies. To begin with, the number of patients at any one time in the hospital will be limited to 12. A house has been secured, and it is estimated that the cost of carrying out the scheme for the first year will be £800. Of this amount a lady donor has offered £300 if the expenses for opening on August 1st are secured.

Blackpool Hospital Dispute.

The regrettable dispute between the honorary surgeons and the board of management of the Blackpool Victoria Hospital has entered on a new phase. The dispute began last year and has continued ever since. The nurses' dietary has been rectified; the matron has voluntarily tendered her resignation and a new matron has been appointed. Six in all of the honorary medical staff have resigned. The doctors made a suggestion regarding a medical member of the board of management which has not been acted on, hence the trouble. The medical staff called for the resignation of this medical man from the board of management. Last night, Dr. Buckley presiding, a meeting of medical practitioners of Blackpool was held, and a proposal to found a cottage hospital was adopted unanimously, and enough money was guaranteed at the meeting to set the undertaking agoing. Mr. R. H. W. Dunderdale will for the present act as secretary and treasurer. The hospital will be used to deal with acute surgical emergencies amongst the medical practitioners' own cases.

A Manchester Man for the Antarctic Expedition.

Dr. Alexander H. Macklin has resigned his position as senior house surgeon at the Blackburn Infirmary on his appointment as one of the surgeons in Sir Ernest Shackleton's forthcoming Polar expedition. Dr. Macklin graduated in medicine at Manchester in July, 1912.

July 21st.

BIRMINGHAM.

Milk-supply.

THE public health committee is issuing a circular drawing the attention of farmers and milk dealers to the necessity of taking care to ensure that the milk is free from contamination. The following is the suggested method of milking to secure greater cleanliness: (1) The cows and cowsheds to be kept clean; (2) all long hairs on udders and flanks of cows to be kept short by clipping; (3) cows' flanks to be damped with a brush and their udders wiped clean with a wet cloth before milking to prevent dust and dirt from falling into the milk; (4) milkers to wash their hands with soap and water before milking and to wear clean overalls; (5) a covered milking pail to be used with an opening in the side; and (6) the milk to be immediately removed from the cowshed into a clean dairy and passed through a strainer and cooled. Bacteriological experiments have been made recently in Birmingham at four good dairy farms. The number of germs in 1 c.c. after two hours in milk obtained by ordinary methods varied from 360 to 147,500, the average being 41,312. With the special method they varied from 140 to 400, and the average was 234. The health committee has also issued a circular to shopkeepers who sell feeding bottles appealing to them to stop the sale of bottles with long tubes in the interests of the community.

The City Sanatorium.

The opening of the new buildings of the City Sanatorium, Yardley-road, by the Lady Mayoress will take place on July 24th. Sir Robert Philip will give a short address.

July 22nd.

SCOTLAND.

Meeting of the Royal Institute of Public Health.

THE annual meeting of the Royal Institute of Public Health commenced in the Usher Hall, Edinburgh, on Wednesday evening, July 15th, when the President of the congress, the Marquis of Linlithgow, delivered the opening address before a distinguished audience. The address, which was listened to with attention, dealt with the difficulties, technical, political, and economic, with which science had to contend in combating the great public health problems of the day, and called attention to the need for educating public opinion. At the close of the address Lord Linlithgow was admitted to the honorary Fellowship of the institute and Lord Provost Inches to honorary life membership. The medal of the institute for conspicuous service in the cause of preventive medicine was awarded to Dr. James Niven, medical officer of health of Manchester, for his work in the direction of the prevention of tuberculosis. The work of the congress was continued until Monday, July 20th, when the proceedings closed by a public lecture delivered by Dr. Otto Neustatter, of Dresden. The congress was attended by a large number of prominent medical men and sanitarians.

Health of Aberdeenshire: Annual Report of the Medical Officer of Health.

Dr. J. P. Watt, medical officer of health of the county of Aberdeen, states in his annual report for 1913 that emigration from the county has received a check, its trend also having been deflected somewhat from Canada to Australia and New Zealand. The birth-rate for the county, as estimated by the Registrar-General, was 24·082 per 1000, and the illegitimate birth-rate was 18·2. The death-rate was 13·770 per 1000 on the Registrar-General's population. The death-rate of children under 1 year of age was 94·4 per 1000 births. The death-rate from tuberculosis was at the rate of 720 per million, as compared with 801 for 1912. Dr. Watt notes that from a paper published by Dr. A. K. Chalmers, medical officer of health of Glasgow, the death-rate from phthisis would appear to have fallen in Aberdeenshire from 2210 deaths per million in 1860–62 to 898 deaths per million in 1908–10, a fall of 59·4 per cent. In 1860–62 Aberdeenshire came twenty-second in the list of Scottish counties with the lowest death-rate from phthisis; in 1908–10 it came sixth, the counties having less deaths per million persons from consumption being Peebles, Fife, Wigtown, Haddington, and Berwick.

Appointment to Chair of Chemistry at Aberdeen University.

Mr. Frederick Soddy, M.A., F.R.S., was, at a meeting of the Aberdeen University Court held on July 14th, unanimously appointed to the chair of Chemistry in that University, rendered vacant by the resignation of Professor Japp. Mr. Soddy, who obtained a first class in the Honours School of Natural Science, Oxford, in 1898, went to Montreal as a demonstrator in the Chemical Laboratory at McGill University, where for three years he worked, largely in conjunction with Professor Rutherford, carrying on a combined chemical and physical investigation of radio-active phenomena. The result of this joint work was the general interpretation of radio-activity by the theory that the atoms of the radio-elements are undergoing spontaneous disintegration. Subsequently he was associated with Sir William Ramsay in London, and worked also at the Cavendish Laboratory, Cambridge, with Sir J. J. Thomson, with results too well known to need enumeration. In 1904 he was appointed to the newly instituted independent lectureship in physical chemistry in Glasgow, where he has remained until now, accomplishing much, working chiefly on the problems which surround the origin of radium.

Death of Dr. Alexander Reith.

Dr. Alexander Reith died at his residence, Aberdeen, on July 16th. He was a well-known practitioner in Aberdeen, and was a native of that city, having graduated M.D. at Marischal College in 1859. For some time subsequently he practised in England and France, and on his return to Aberdeen he acquired the practice of the late Dr. Erskine. Dr. Reith, who was highly respected by all who knew him, was of a retiring disposition, and spent much of his spare time in mechanical pursuits. He was a widower, and is survived by three sons and three daughters.

Anthrax at Buddon Camp: Territorial Attacked.

A case of anthrax was discovered at Buddon Camp on Wednesday of last week, the victim being one of the members of the 2nd Battery, 1st Highland Brigade, R.F.A., from Aberdeen. The patient was promptly removed to Aberdeen Infirmary, and all precautions were taken to prevent the spread of the disease. It is supposed that the man contracted the disease before going to camp, as in the course of his occupation he might readily have done so.

July 21st.

IRELAND.

Irish Medical Committee.

AT a meeting of this committee held on July 14th in the Royal College of Surgeons, Dublin, Dr. P. J. Macnamara and Dr. R. J. Johnstone were unanimously re-elected as chairman and vice-chairman. Financially the gross receipts for the year came to £597 0*s.* 4*d.*; the expenditure up to date was £624 10*s.*, which left a debit balance of £27 9*s.* 8*d.* This deficit it was decided to carry forward to next account. The following subcommittees were appointed:—Finance and executive: M. R. J. Hayes, Dublin; R. J. Rowlette, Dublin; R. M. Blake, Mountpleasant; J. Power, Ardfinnan; W. Doolin, Dublin; J. S. Darling, Lurgan; A. A. McConnell, Dublin; P. J. O'Brien, Cork; and W. J. O'Sullivan, Limerick. Sanatorium: T. J. Kelly, Enniscorthy; R. J. Rowlette, Dublin; J. J. O'Sullivan, Waterford; J. Power, Ardfinnan; M. R. J. Hayes, Dublin; S. Agnew, Lurgan; P. J. Hamilton, Arklow; T. A. Davidson, Belfast; R. P. McDonnell, Dublin; J. Giusani, Cork; L. Kidd, Enniskillen; and D. Forde, Strokestown. Poor-law: G. E. Greene, Ferns; O. P. Kerrigan, Castletown Geoghegan; W. W. Murphy, Inch; T. J. Kelly, Enniscorthy; C. H. Foley, Ardrahan; W. J. Burns, Belfast; T. T. Collins, Ballinasloe; T. Donnelly, Dublin; A. C. Callaghan, Ahascragh; J. J. O'Connor, Queenstown; G. A. Hickey, New Ross; J. M. S. Kenny, Granard; J. F. Fagan, Oldcastle; and P. Donnellan, Castlerea. Hospital: R. J. Rowlette, Dublin; R. J. Kinkead, Galway; G. A. Hickey, New Ross; E. C. Thompson, Omagh; E. W. Allsom, Cork; J. S. Darling, Lurgan; H. T. Warnock, Donegal; R. C. Peacocke, Blackrock; S. Pringle, Dublin; L. Kidd, Enniskillen; W. A. Fogarty, Limerick; J. Cotter, Cork; G. I. Mackesy, Waterford; L. A. Byrne, Dublin; Sir John Lentaigne, Dublin; Sir John Byers, Belfast; Sir Alexander Dempsey, Belfast; Sir Andrew Horne, Dublin; and J. S. McArdle, Dublin.

The Water-supply of Dublin.

The long spell of dry weather has had its effect on the Roundwood reservoir, from which Dublin and most of the outlying townships draw their water-supply. The last dry season was 1911, and in that year the city was in measurable distance of a water famine when rain began to fall. At present the level in the reservoir is 3 feet 3 inches lower than it was on the same date in 1911. In 1893 there was a complete failure, and for several weeks of the autumn of that year the citizens were dependent on a supply drawn from the Grand Canal. The question arises as to why the corporation, after two such warnings, does not make adequate provision. For several years past work has been going on at Roundwood to increase the storage of water, but the progress is very slow, and the city is in danger every dry summer. The irritation felt by the citizens is not allayed by the bland advice which emanates from the waterworks committee of the corporation. The chairman of that body wrote to the press recently requesting water consumers to refrain from unnecessary use of water, and, in particular, from *taking baths*, *flushing drains*, and watering gardens. It is said that should the Roundwood supply give out the corporation is in a position again to make use of canal water.

Water-supply of Belfast.

The Belfast Water Commissioners, owing to the feared scarcity of water, have been obliged to issue otices to the public warning them against wastage f water and urging care in its use.

Accident to a Medical Man.

I regret to report that Mr. J. Kean, J.P., of Newry, nedical officer for Meigh dispensary district, lies n a very precarious condition in the Newry General Iospital owing to a motor accident. It appears hat on the evening of July 16th Mr. Kean with his vife and a friend were returning in his motor-car rom Greenore, when in taking a sharp turn in the oad the car was overturned and all the occupants vere pitched out. Dr. Donegan, of Carlingford, hancing to come on the scene with his motor-car, conveyed Mr. Kean to Newry, where, after being een by Dr. S. E. Martin, he was taken to the Newry General Hospital in an unconscious state. The latest information is that Mrs. Kean is much etter, but that her husband is still in a very critical condition.

July 20th.

PARIS.

Immunisation against Rabies.

Madame Phisalix, who is attached to the Laboraory of Experimental Physiology of the Museum of Natural History, has made an interesting discovery with regard to the neutralisation of the virus of rabies by the venoms of batrachians and snakes. These two viruses appear to neutralise one another and to create an immunity in a subject subsequently inoculated with the virus of rabies. Many rabbits were given by intravenous injection about 10 mgm. of viper venom—a dose double the lethal quantity, as proved at the same time with controls. Six days after the last test the rabbits thus treated were trephined and fixed rabic virus was injected under the meninges. Control rabbits treated in the same way without any preventive inoculation were attacked by rabies some hours later. Of six rabbits inoculated with the venom of the salamander, five remained entirely unaffected. Only one, in which 15 days were allowed to elapse between the immunisation and the inoculation with rabies, died rabid. The duration of the immunity conferred by the association of the venom of snakes and batrachians is therefore quite short. Other experiments show its duration to be from three to six weeks, but that it completely disappears by the end of two months. Madame Phisalix has further been able to show that the association of the two venoms is necessary. Rabbits immunised with salamander or viper venom alone showed no resistance to the virus of rabies.

A Committee for the Dissemination of Hygienic Principles.

A committee has been established in Paris, at the suggestion of *Le Matin*, to disseminate information on the laws of hygiene and public health. It comprises Members of Parliament and of the Académie de Médecine, administrative officials, mayors of the *arrondissements* of Paris, and social workers. Three questions are selected for study and will be brought before a congress organised by the various groups. They are: (1) the rôle of the municipalities in the struggle against infant mortality; (2) hygiene at school and in the school; (3) the organisation of hygienic services in the departments. The question of hygiene at school has been made the subject of thorough discussion, and a vigorous campaign is to be undertaken to disseminate the idea that the school ought to be a powerful agent in the diffusion of hygienic knowledge throughout the world. Dr. Méry has been entrusted with the report on the first question, Dr. Mosny with that on the second, and Dr. Hott, of Rouen, with that on the third.

The Story of a Statue.

For more than 60 years a statue of Ambroise Paré presided silently over the meetings of the Société de Chirurgerie. But it was made of plaster, and one day a clumsy servant knocked it over and shattered it into a thousand pieces. Some weeks later Dr. Robert, medical inspector of the Army Sanitary Service, was shocked to find empty the place which belonged to the father of French surgery. He searched and found another statue of Paré, and in order to prevent a like disaster he had it cast in bronze, after which he generously offered it to his colleagues. A little informal ceremony was made of this occasion, when Dr. Tuffier, president of the society, complimented the donor, alluded to the close connexion between civil and military medicine, and praised the members for their loyalty to their ancestor.

An Anti-Opium League.

A league is being formed in Paris to combat the spread of the opium habit which, in addition to the ravages that it has made among the Asiatic colonies, is now spreading among the students and in literary circles where intellectual refinement contributes to the perversion. This league has for its honorary presidents Professor Charles Richet, member of the Academies of Science and of Medicine, and M. Le Myre de Villiers, senior Governor-General of French Indo-China. The acting president is Dr. Janselme, professeur agrégé of the Paris Faculty of Medicine, who is well acquainted with the East, and the secretary-general is Dr. Millant. The league proposes to enlighten the public, by means of pamphlets and meetings and other methods of publicity, upon the dangers of using narcotic drugs in general, for the fight against cocaine is included as an addition to the programme. It intends to wage energetic warfare against the traffickers in poison who swarm in Paris and in the naval ports.

A Forthcoming Congress.

The next Congress of the French Association for the Advancement of Science will be held this year at Havre from July 27th to August 2nd. It will have on this occasion a special *éclat* because of the connexion with the British Association, from which body a large number of scientists have accepted the invitation of the French Association and the town of Havre. Professor Armand Gautier will preside over the session, and Professor Albert Calmette, director of the Pasteur Institute at Lille, is vice-president of the Congress.

July 20th.

INDIA.

Lunacy in Bengal.

Interesting figures are given in the annual returns of the lunatic asylums in Bengal for 1913 of the cures effected during the year under review. From the proportion of cures given below among the different types of insanity it would seem that the type of insanity associated with Indian hemp smoking yields more easily to treatment than any other type: insanity due to hemp smoking, 14·38 per cent. to total treated; melancholia, 8·42 per cent.; delusional insanity, 6·60 per cent.; and mania, 6·25 per cent. The total expenditure of the lunatic asylums in Bengal in 1913 was Rs.1,94,451.

The Simla Improvement Scheme.

Major J. C. Robertson, Sanitary Commissioner with the Government of India, has proceeded to Aden to advise the local authorities on their new scheme to improve the water-supply of Aden. Surgeon-General Sir Pardey Lukis, I.M.S., will take his place on the committee appointed by Government to consider the improvement of Simla.

Sanitation in Lahore.

The fourth annual report, prepared by Dr. A. G. Newell, late health officer of Lahore, which has just been issued, shows that the infant mortality rate was 305·3 deaths per 1000 births. Of these infants 41·54 per cent. die within a month of birth, and 18·3 per cent. die within ten days. Much of this waste of life might be prevented by skilled attention at birth and by healthy conditions of food and environment during early days. A little is being done by the municipality, but much more is needed. The fact that more than half the deaths that take place in Lahore are those of children under 15 years of age demonstrates the need for improved sanitary measures. One of these measures which Dr. Newell has long urged is the improvement of the milk-supply. Milk-sellers are already licensed, and their licence is supposed to ensure that the milk is clean and unadulterated, but the regulations are defective. Dr. Newell advocates education of the cow-keepers in cleanliness, and in the proper feeding of cows, the elimination of cows from inside the city, and the establishment of model dairies. Other proposals, in view of the high infant mortality rate, are the appointment of two lady health visitors and the free registration of *dais*, so that the women could be reached and taught the rudiments of asepsis in midwifery. Both these measures would undoubtedly be most beneficial. After infant mortality the prevalence of pulmonary tuberculosis forms one of the most difficult problems before the health officer. This disease caused 630 deaths last year in Lahore, and it is estimated that there are over 6000 cases in the municipal area. The disease is much more prevalent among Mahommedans than among Hindus, and 47·46 per cent. of the deaths were among Mussulman women. Dr. Newell describes the preventive and educational work already being done, and urges the need for the appointment of a lady health visitor to go among the women. Direct instruction in the elements of sanitation is urgently needed, for by this means alone can the advantages of domestic and personal hygiene be brought home to the people.

Madras Town Planning.

It is understood that the Government of Madras have in contemplation a scheme for popularising the latest ideas in town planning and the building of model sanitary dwellings. With this end in view they are proposing to hold exhibitions and demonstrations and courses of lectures in the Presidency during the coming cold weather. This timely proposal will be welcomed by all as a step in the right direction, as a means of educating public opinion, preliminary to undertaking the necessary legislation.

Tuberculosis in Madras.

The Madras Corporation have decided to make tuberculosis compulsorily notifiable throughout the city. The initiative for this action came from the Government of Madras, which in January last requested the corporation to prepare a detailed report on the feasibility of introducing a system of compulsory notification into the city. The report of the city health officer supported the view that compulsory notification was necessary for the control of tuberculosis in this city. He recommended the payment to medical practitioners o 1 rupee fee, and the periodical disinfection of th rooms occupied by the patient. It has now bee decided to adopt these measures, which will no however, come into force before the corporatio have provided a sanatorium or farm colony fo early cases. In addition, it is proposed to provid hospital accommodation for more advanced cases to organise stricter supervision of supplies of foo and milk, and to attempt to educate both childre and adults as to the cause, prevention, and cure o the disease. All these measures are highly practical and reflect creditably on the business-like way i which Madras is approaching a difficult problem.

Mosquitoes in Ceylon.

According to an advance report of the mosquit survey of the Ceylon port, the investigation throughout 1913 revealed the fact that there were 50 different species of mosquito in Colombo, o which 15 were harmful. Several species were new to science and others not previously recorded eithe in Ceylon or India. Complete extermination, it is pointed out in the report, is practically impossible owing to the existence of a migratory species retaining its habit of breeding in swamps and natural pools at a distance from the centres of population, but accustomed to fly long distances to cities and towns, to feed on human blood.

June 27th.

Correspondence.

"Audi alteram partem."

ORAL SEPSIS AND THE EXTRACTION OF TEETH.

To the Editor of THE LANCET.

SIR,—I spent an hour a week or two ago with a medical man, who was quite a stranger to me, discussing the question "should he allow half his teeth to be extracted" for what had been called pyorrhœa alveolaris. He had already almost determined to content himself with the loss of four incisors. He was a man of nervous temperament, who had spent several recent years of ill-health—chiefly in pyrexial states that had been ascribed to streptococcal infections, for which he had been duly and repeatedly vaccined. But still it seemed that similar illnesses came upon him, and so I suppose his teeth had been pounced upon. I examined his mouth very carefully and his teeth were to my eye perfect; I would not speak positively as to the slightest possible gingivitis, at the edges of the gums, but I could not see it. He had commencing retrocession of the gums. I strongly demurred to the extraction of a single tooth.

Now, Sir, if this had been a solitary experience, however much I might differ from the advice that had been given, I should have nothing to say, but it is not so. In the last year or two hardly a week passes but I see man or woman said to be affected by pyorrhœa which is poisoning them, and where to save their health it is necessary to extract a number of teeth. I have several times heard that the whole lot had been condemned. In many another case a long course of vaccines had been advised or was being carried out, where I really could see nothing of importance in the way of disease and nothing to excuse such drastic treatment. I have as a result come very reluctantly to the conclusion that a good many of us have lost our heads (it has often happened so in medicine before), and that many are so obsessed by the idea of oral sepsis that they give way to the fanatical, inconsiderate, and reckless advice, that good teeth should be removed wholesale. And what for? For the most trivial ulceration of the edges of the gums that our forebears would have adequately treated by a mouthwash, and thought no more about it.

Everyone will admit that there is wisdom in taking more care of the teeth than has often been done in the past, but dirty mouths are not pyorrhœa, and the deep-seated pent-up suppuration in the alveoli that justifies the term and needs wholesale extraction of teeth is an uncommon disease; it is a painful malady, and I do not think there is much doubt about it when it is present. I have taken some time to consider this opinion, and I daily become more certain that an exaggerated view is too frequently taken of trivial conditions of the buccal mucous membrane, and that a harmful practice has come into vogue that needs to be held up.

I am, Sir, yours faithfully,
JAMES F. GOODHART.
July 20th, 1914.

PS.—After the above was written Dr. R. C. Wingfield's paper on Oral Sepsis in Pulmonary Tuberculosis in THE LANCET of July 18th attracted my notice. Being of the nature of a report of an experimental inquiry, it is outside the purpose of my remarks. Nevertheless, I cannot help saying that somewhat of a shudder comes over me as I read that in 30 cases of phthisis, all of them as regards age in the prime of life, the teeth were removed "in bulk" for an assumed oral sepsis that can at best have been only problematical.—J. F. G.

THE TECHNIQUE OF ARTIFICIAL PNEUMOTHORAX.

To the Editor of THE LANCET.

SIR,—I must thank Dr. Clive Riviere for his critical interest in my paper on artificial pneumothorax. His criticisms in your issue of July 18th are numerous and I apologise if my reply is somewhat lengthy. I do not doubt that Dr. Riviere can pass a blunt needle through the parietal pleura so that the orifice rests in the pleural cavity without injuring the visceral pleura. This can be done with a sharp needle provided the point does not project beyond its orifice. What I maintain is that, even if the orifice is in the pleural cavity, he cannot obtain ample manometric oscillations without causing the lung to leak and thereby supply the necessary gas to communicate movements to the manometer. The fact that he does obtain such oscillations is, as I showed, ample proof that he does cause the lung to leak. If he is not satisfied with that proof it is for him to show how he obtains his oscillations or to point out the fallacies in my reasoning. In this connexion let us examine the details of one of his own cases—for example, that of H.B. In this case, at the first operation, he obtained manometric oscillations indicating an intrapleural pressure varying between −4 cm. and −12 cm. of water. Here, on the assumption that the lung did not leak, the maximum volume of gas entering the pleural cavity was equal to that of a column of 6 cm. of the fluid in his manometer. Of this very small volume he apparently thinks 4 cm. could have moved freely in and out through the needle to produce his oscillations. Having obtained these he asked his patient to cough. Am I right in assuming that his manometer then registered a positive pressure? If it did, he could not produce more conclusive proof that air had leaked into the pleural cavity, for a positive pressure could not be produced in his manometer except by more air than was originally present in it. If it did not register a positive pressure, such a disturbance as that caused by a cough was entirely unnecessary and likely to displace the delicately adjusted needle.

But Dr. Riviere does not appear to have considered the possibility of the valve action of the lung, although most readers will have recognised it as a frequent cause of difficulty in aspirating a pleural effusion, but, provided a sufficient quantity of fluid is still present, a difficulty overcome by altering the position of the needle. In reviewing the experiences which I described at the end of my paper—and these I must really credit him with not having appreciated—he apparently failed to see that the suspension of oscillations during the temporary cutting off of the supply of gas from the reservoir was due to this valve action, and offered the explanation that it was due to a synchronous, and therefore temporary blocking of the eye of the needle by a vexatious "piece of punched out skin." However, Dr. Riviere recognises that in some cases gas may fail to return from the pleural cavity through the needle, but suggests that in these cases such gas is "presumably lost among the pleural adhesions"—that is, lost where there is not even a potential cavity. The valve action of the lung seems to me to be a more satisfactory explanation. Gas having leaked into the pleural cavity and being suitably located it will be recognised that no further difficulty is likely to occur, and a subsequent puncture of the chest wall would probably furnish the desired oscillations and allow the operation to proceed satisfactorily. Hence the "misadventure" of puncturing the lung and making it leak would not be apparent and would escape detection. It is only natural, therefore, that Dr. Riviere should find difficulty in recognising and acknowledging it in his practice.

But apart from the question of puncturing the lung, Dr. Riviere criticises the use of the two manometers. I believe that a single manometer was once deemed an unnecessary complication even by pioneers in the practice of pneumothorax, so that I am not surprised that objection should be raised to the use of two. I hardly think that Dr. Riviere would raise his objections if he had had experience of a two-manometer apparatus, and his criticisms perhaps lose weight because he has not. Let us compare the methods of determining whether gas is flowing. With a two-manometer apparatus a mere glance shows immediately whether it is flowing or not. With his single manometer Dr. Riviere says that he pinches the communicating tube between the manometer and the needle—in view of the valve action, often an inadvisable procedure — to see whether the pressure in the manometer rises. This is a clumsy method, only applicable if the flow is rapid. In this connexion Dr. Riviere speaks of the pressure of gas in the gas bottle, the intrapleural pressure, and "the average pressure of the two combined," apparently not recognising that unless the tube between the manometer and gas bottle is throttled the manometer always records the pressure of gas in the gas bottle, and that the recorded pressure rises when gas ceases to flow because the head of water in the siphon has not now to drive water from the water bottle into the gas bottle. He then somewhat contemptuously denies that the gas pressure ever falls below the intrapleural. I would point out to him that just before he allows gas to flow from the reservoir this occurs with each expiration and every cough, and in consequence, if there is no valve action, gas passes freely into the manometer and produces the positive phase of the oscillation. In first operations fluid instead of gas does occasionally under these circumstances pass into the needle.

I admit that formulæ and calculations are at first sight somewhat forbidding, but only at first sight. I would do the "clinician" and "practical physician" an injustice if I suggested that they could not take two readings and from the lower of these subtract half the difference between the two. As a matter of fact, a very little practice will enable the practical physician to do this automatically as he is observing the readings. I pointed out that it was not necessary for practical purposes to work out any of the "complicated formulæ" to which Dr. Riviere objects. I also pointed out that by closing down the throttle, thereby shutting off the gas, he may, if no valve action occurs, obtain, in the same way as he does with his own apparatus, the "visual proof" of the intrapleural pressure (the reading by the direct method) which he desires. His fear that the inertia of the fluid in the small manometer reservoirs might result in the damping of the oscillations is groundless. This I have shown by placing an ordinary manometer between my apparatus and the needle; also by varying the quantities of fluid in the reservoirs. Curiously enough, the only advantage which Dr. Riviere sees—that is, the advantage regarding the range of working pressure—really does not exist. With regard to oxygen I recommend it because if it passes into the tissues it is readily absorbed and does not produce emphysema to the same extent as nitrogen sometimes does. Whether oxygen entirely eliminates the possibility of embolism I am not prepared to say. Probably, carbon-dioxide would be a better gas. However, except where gas is pumped in under considerable pressure, I believe embolism to be an overrated danger, and, with the indications of the flow and pressures which the two manometers afford and the low reservoir pressure with which I work, a negligible one.

Finally, apart from the actual method of procedure and the question whether the leakage from the lung is serious, the advantages which I claim for my apparatus are available even if the rules necessary when the single manometer is used are observed. The operation is not one to be undertaken lightly, and if the operator is not prepared to make some effort to master a slightly more elaborate apparatus, provided, of course, it is a more efficient one, he has no right to practise the method. I am, Sir, yours faithfully,

London, W., July 20th, 1914. WM. PARRY MORGAN.

To the Editor of THE LANCET.

SIR,—Dr. W. Parry Morgan's paper in THE LANCET of July 11th is a refreshing departure from the hackneyed stuff most of us have been writing on artificial pneumothorax during the last few years. But his paper leaves me scratching my head in an instinctive effort, presumably, to gouge new, mathematically-minded sulci in my cortex. More than a week's respectful contemplation of his formulæ has left me in a state of complete mystification. I do not doubt their correctness, but I dare anyone except a "wrangler," such as Dr. Morgan, to keep them in his head and to ring the necessary changes on them during an operation which, in its simplest form, requires considerable mental alertness. After all, when a case is uncomplicated by pleural adhesions, and the operator has mastered the Forlanini-Saugman technique, the induction of a pneumothorax is straightforward and almost free from danger. When there are extensive adhesions I fear the dangers and ultimate failure of the operation are inevitable in any case. An objection I would raise to the escape of oxygen through the needle as it traverses the chest wall is that it may form a small pocket superficial to both pleuræ, and that manometric oscillations may occur, suggesting that the point of the needle is in the pleural cavity, whereas it is in reality outside. A false pneumothorax may be as great a hindrance to the induction of a true pneumothorax as a false passage in the urethra is to the catheterisation of the bladder. Apart from this objection, to which, no doubt, Dr. Morgan will have a suitable answer, it seems to me that his use of a slow stream of oxygen through the needle as it punctures the parietal pleura must lessen the chance of injuring the visceral pleura and lung. This danger has lately been illustrated by Dr. Begtrup Hansen who, in an attempt to induce a pneumothorax, punctured the chest in the eighth and ninth intercostal spaces. There were no manometric oscillations, and no gas was introduced. The puncture in the ninth space was immediately followed by a violent hæmoptysis, and the patient died a quarter of an hour later. At the necropsy large blood-vessels were found at the point where the lung had been wounded. The heart contained air. Evidently air in the lung had been sucked into a wounded blood-vessel, causing death. If, as I suspect, the pleuræ were adherent, Dr. Morgan's device would not have averted the fatality; but if they were not adherent the wound of the lung would presumably have been avoided. But I still hold that most physicians would do well to confine themselves at first to the simpler technique of the Forlanini-Saugman operation. Simple as this is, I have frequently found it necessary to repeat its demonstration more than once to the same person, and I have even known a patient to be almost suffocated by a mistake in the reading of the simple manometer devised by Professor Saugman. I am, Sir, yours faithfully,

Gorleston-on-Sea, July 18th, 1914. CLAUDE LILLINGSTON.

NURSES' REGISTRATION.

To the Editor of THE LANCET.

SIR,—In your excellent, if I may say so, leading article on Nurses' Registration you write of the Bill: "No woman whose name is not upon this register would be allowed to claim that she has been trained at a hospital and is a qualified nurse." The Bill is bad, but not quite as bad as that. The proposal in the Bill is that no woman should be allowed to call herself a "registered nurse" if she was not on the register, a very different matter—different because it is certain that if the Bill passed a large number of the best nurses would not register, but yet nothing could ever prevent a nurse who has been trained at a hospital from saying so. The opposition is really in no way personal. Dr. W. A. Chapple and the ladies who work with him enjoy a bout at the London Hospital nurses which does not harm the nurses, gives the hospital a gratuitous advertisement, and me the opportunity of replying. I fear they will leave off doing this soon. But the opposition, as I say, cannot be personal when nearly 500 matrons of hospitals and over 2000 nurses have quite recently signed the protest against it.

I am, Sir, yours faithfully,

London Hospital, E., July 21st, 1914. KNUTSFORD.

CARBOLIC ACID INJECTIONS IN TETANUS.

To the Editor of THE LANCET.

SIR,—I read with interest the description of a case of tetanus treated with subcutaneous injections of carbolic acid by Mr. W. Graham Reynolds in THE LANCET of May 23rd. I mention here a similar case which came under my observation. A native woman, aged about 45, was brought to me on May 15th last for general rigidity of the body with inability to open the mouth. Her husband, who accompanied her, told me that about 25 days previously she met with a bullock-cart accident. The wheel passed over her right foot and the edge of the ornament which she had on her right ankle cut the skin and a large wound of about three inches was made. The wound was dressed on the second day of injury. The husband stated that some six days previously to her visit to me she was unable to bend her neck and body and could not open her mouth properly.

On examination a wound was found below the internal malleolus of the right leg. The wound was about one inch long and healing, and was covered over with healthy granulations. The patient was unable to open her mouth and used to get spasms very frequently. Opisthotonos and risus sardonicus were present. There was general rigidity of the body. Her mental power was normal. The wound was washed with antiseptic lotion thoroughly well and dressed. Intramuscular injection of 2 c.c. of a 3 per cent. carbolic acid solution in distilled water was given, and the injection was repeated every four hours during the day. Daily three similar injections were given. First the injections were given in the buttocks and then in the thighs. Every time the site was changed. The patient's condition was bad for the first three days after admission. The spasms were very frequent and the patient restless. A dose of chloretone (gr. xxx.) was given every night to procure sleep and arrest restlessness. Some improvement was noticed on the fourth day; the spasms were less frequent and the restlessness was found diminished. On the fourth day the dose of injection was reduced from 2 c.c. to 1 c.c., but three injections as usual were given. From this day the symptoms began to diminish and the patient began to improve every day, though the progress was very slow. On the seventh day injections were not given and from this time no more injections were necessary. She was put on bromide and chloral mixture. From the ninth day the general rigidity and the opisthotonos began to diminish. The patient was slightly able to open her mouth on the eleventh day, and then improvement was rather rapid. On the eighteenth day after admission the movements of the neck and body were free to some extent, and the patient was able to take solid food. As the circumstances were such that she would not stay in the hospital longer she was now discharged, but I saw her daily for the next two weeks. Her progress was steady, and by the end of the fifth week she was quite well.

This was not a very severe case of tetanus, and the patient developed symptoms some time after the injury, and they were gradual in their onset. The peculiar interest in this case is that three days' treatment of nine injections brought the spasms under control (though injections were given for three days more in lesser quantities) and then her progress was slow but steady. I think more trial should be given to this method of treatment, and especially in severe cases, before coming to a definite conclusion about the usefulness of the drug.

I am, Sir, yours faithfully,

SHERALI K. NANJIANI, L.M. & S.,

Chief Medical Officer, Rewa Kantha, Chhota Udepur State.

June 24th, 1914.

⁂ Mr. Graham Reynolds's paper was supplemented in our issue of July 4th by a table of dosage.—ED. L.

To the Editor of THE LANCET.

SIR,—Mr. W. Graham Reynolds's very interesting case of recovery under carbolic acid injections, published in THE LANCET of May 23rd, has led me to analyse the results obtained at the Countess of Dufferin Hospital, Baroda, where treatment by carbolic acid injections has been our routine practice in cases of tetanus for the last two and a half years. Of the 17 cases of tetanus collected 7 died, 4 were discharged as cured, 4 as relieved, and 2 "otherwise." Of the 7 deaths recorded, Cases 3 and 13 died a few hours after admission, Case 10 two days after admission. In Cases 2 and 15 only slight temporary improvement was noted, the patients dying four days after admission. In Case 8 treatment was successful in so far as relieving the tetanic spasms, but the patient was from the start in a very debilitated condition and died from a terminal pneumonia. Case 14 was a very septic case, and died the day after lockjaw developed in the hospital. The cases marked as relieved were taken away by relatives before complete recovery (a practice which in the East one has constantly to put up with). The improvement, however, in Cases 6 and 11 was so great that they could have been classed as cured. Of the cases discharged "otherwise" no improvement at all was noted in Case 16 after 10 days' treatment, and unfortunately no further notes are available, while Case 17 was taken away the day after lockjaw developed. The number, then, is reduced to 13 of the cases in which the treatment could be said to have had a fair trial through the patients not being taken away or dying too soon. Given, then, the chance of a fair trial the treatment may be said to have been completely successful in 6 cases (Cases 1, 4, 5, 6, 11, and 12), to have effected notable improvement in 3 cases (Cases 7, 8, and 9), and slight or no improvement in 4 cases (Cases 2, 10, 15, and 16).

Considering the lateness and the general state of neglect in which most of these patients reach hospital, I think that the treatment may be said to have been subjected to a pretty severe test and to have yielded gratifying results, especially compared to the days when reliance was chiefly placed on antitetanic serum, yielding within my experience a mortality of 100 per cent. Antitetanic serum is now relegated by us to its prophylactic use, and in justice to the serum I must say that so far, and that may not be pure coincidence, no tetanus has developed in those cases which were given the prophylactic serum. In none of the cases were symptoms of carbolic poisoning noticed.

Chloretone, either per os or per rectum, was the sedative mostly employed in combination with the carbolic acid injections. A case had been reported about two years ago in which recovery from tetanus had been attributed to chloretone alone, but to my mind chloretone possesses no other specific value than that of a useful and harmless sedative. One hears of cases of recovery, sometimes singled out for publication, in which different methods of treatment have been adopted. I believe that under any method of treatment in tetanus there is a certain element of "spontaneous recovery," unfortunately occurring too seldom, but with which one has to reckon before estimating the value of a treatment uncorroborated by a series.

I am, Sir, yours faithfully,

CLIFFORD MAYER, M.D., B.S. Lond., &c.,

June 26th, 1914. Chief Medical Officer, Baroda State.

TUBERCULIN "ENTHUSIASTS."

To the Editor of THE LANCET.

SIR,—I wonder if any of your readers can do anything to check the activities of some of the tuberculin "enthusiasts." I use the word in its original sense. The following is one of several instances of their handiwork. A young woman attended the Brompton Hospital two years ago with symptoms and signs of active pulmonary tuberculosis. She had received much hospital treatment and a prolonged stay in two sanatoria, and I was able to tell her that, in my opinion, the disease was arrested and that she could return to work. She was free from symptoms, and she had neither cough nor sputum; the local signs indicated fibrosis. She was recommended to report herself periodically in any case, and to come to hospital at once if she felt ill. This was on May 14th.

I give the following account of subsequent events as it was reported to me by the patient. A few days after seeing me she received a typewritten letter from the clerk of the Insurance Committee instructing her to attend at a certain dispensary at a certain time. She did so, and was interviewed by the resident officer, who referred her to the "specialist" doctor. The latter said: "I do not know if injections will do you good or not, but we may as well try them." She received 18 injections in a short period, 14 of them on consecutive days. She returned to hospital on July 9th with a temperature of 100° F. at noon, blood-spitting and blood-stained sputum, and copious moist sounds over the affected area. It has been necessary to admit her into hospital without delay.

It is not my object to enter into a discussion concerning the merits—or otherwise—of tuberculin, nor to criticise the method of administration in this case. But it does seem justifiable to consider that a focus of disease, apparently arrested, was fanned into flame by the treatment. The possible sacrifice of a woman's life may not appeal to the official mind, but surely the destruction of benefits, obtained by a long and expensive treatment, will seem, even to an insurance committee, to be an achievement of which they cannot be proud.

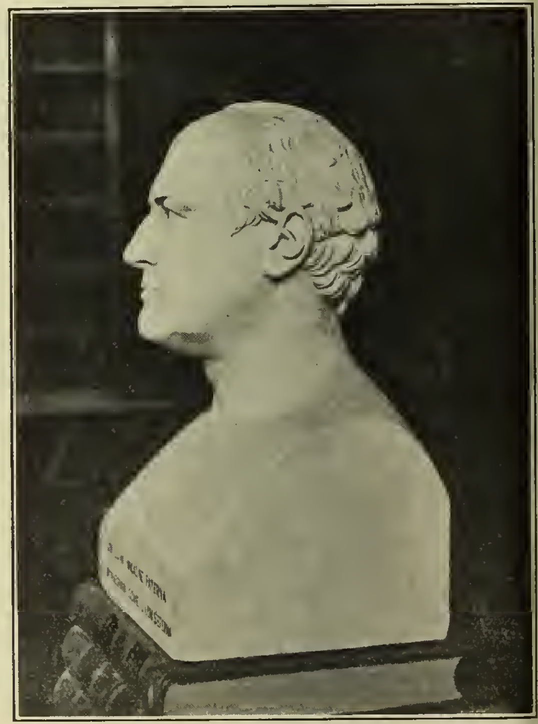
I am, Sir, yours faithfully,

Queen Anne-street, W., July 20th, 1914. CHARLES MILLER.

WHO IS IT?

To the Editor of THE LANCET.

SIR,—After the amalgamation of the variou societies into the Royal Society of Medicin the belongings of several of the dissolve societies were taken out of store, and amon them was found a bust which so far no one ha been able to identify, nor can I find among th officers of the dissolved societies anyone who know anything about it. It is a striking bust, as th enclosed photograph bears witness—such a hea should not easily be forgotten. I have had i displayed in a prominent place in the librar ever since the opening of our new hom with a card attached to it inviting visitors t identify it, but the only suggestion that has bee made is that it is a bust of Dante's friend, Brunett Latini. This suggestion is based on the fact tha the inscription on the bust is the description give by Dante of his friend. I do not agree with th attribution, first, because of the style of the work secondly, because there is in the British Museu an illuminated manuscript containing a portrait Brunetto which does not bear the slightest resem blance to the bust; and, thirdly, because th inscription is just the kind of quotation that an one with a knowledge of Dante would wish to in scribe on the bust of an honoured teacher.



I suggest that if you publish a reproduction the photograph identification might follow.

I am, Sir, yours faithfully,

J. Y. W. MACALISTER.

Wimpole-street, W., July 17th, 1914.

*** The inscription, which cannot be deciphered in profile photograph, runs as follows:—

"La cara buona immagine paterna
Che m'insegnava come l'uom s'eterna." —ED.

EFERRED DEATH AFTER TRACHEOTOMY FOR LARYNGEAL DIPHTHERIA.

To the Editor of THE LANCET.

SIR,—I must thank Mr. T. Jefferson Faulder for alling attention in THE LANCET of July 18th to an pparent inconsistency in my article on the above ubject. The statement in question is that although ecovery is exceptional once obstruction develops o a degree which makes extraction vital, this neasure should be postponed until the obstruction ecomes immediately dangerous. At first thought t may seem advisable to interfere before the conition is urgent, but clinical experience does not ear this out. It is better to wait, and meanwhile o use steam and the spray, which in themselves ccasionally tide a patient over the critical period. arly extraction, as compared with such treatment, s no more certain to avert obstruction and has its wn danger. A single extraction in any stage arely gives permanent relief; forceps have to be sed several times as a rule, and it can never be ertain that some irritation and minor traumatic njury to the weakened mucous membrane may not esult—conditions which favour a more rapid formaion of the plug. Hence I regard extraction as a last esource. All that can be claimed for it is that it vill postpone death in many cases, and offers a hance of recovery when a fatal issue is otherwise nevitable. Whether any variation of the method vould improve the prognosis is an important uestion on which limited investigation at Plaistow Iospital throws no light. At best the gain is likely o be small, since behind the tracheal obstruction here is, in the majority of instances, a grave type f lobular pneumonia. I have no experience of he bronchoscope, and cannot foresee its rôle n this connexion, but as Mr. Faulder has indly suggested its use I hope to test its ossibilities in due course.

I am, Sir, yours faithfully,

Wimpole-street, W., July 18th, 1914. JOHN BIERNACKI.

THE SCHOOL MEDICAL SERVICE.

To the Editor of THE LANCET.

SIR,—One still occasionally hears the gibe against school medical officers who are busy forming themselves into a group for the discussion of their peculiar interests, scientific and sociological (and I daresay it is said of the tuberculosis officers also who are doing the same thing) that it is only a movement of discontented juniors bent on forcing up their own salaries.

Now there is no doubt that an increase of salary has a perennial interest for most of us, but this does not entirely explain the agitation. The fact is specialised services like the school medical service are more and more feeling the need of being self-contained and self-feeding. We shall not in future be able to staff the lower ranks with mere transitional young people on their way to general practice or other departments of the public medical service for which, indeed, experience in school work very imperfectly fits them. The ideal of the future must be that of a Civil Service, in which even the lower grades of responsible workers must have a living wage, so that if they go no higher their lives will not have been a disastrous failure. I am, Sir, yours faithfully,

Stafford, July 18th, 1914. JOHN PRIESTLEY.

THE WORKING OF THE NATIONAL INSURANCE ACT IN GREAT YARMOUTH.

To the Editor of THE LANCET.

SIR,—It is nonsense for Dr. H. Blake, Mr. J. L. Sankey, and Dr. V. H. Blake, of Yarmouth, to write in THE LANCET of July 18th about "the British Medical Association breaking its side of the pledge." When Dr. J. R. Ratcliffe, of Birmingham, stated last year, at the annual representative meeting at Brighton, that the organisation of the Association had broken down, the chairman of the council very rightly objected to the statement, and said it was the individual members of the Association who had broken down, and that until they could get members of the Association to be loyal to the organisation nothing could be effected.

It is now known that the members of the medical profession cannot be trusted to stand by their words. What can we expect, then, but "trouble upon trouble," and the saddest part of it all is that many men do not seem to realise what they have done. I am, Sir, yours faithfully,

Woodbridge, Suffolk, July 19th, 1914. T. CUMING ASKIN.

THE POSITION OF THE ASSISTANT MEDICAL OFFICERS OF THE METROPOLITAN ASYLUMS BOARD.

To the Editor of THE LANCET.

SIR,—I see from your issue of July 18th that the Metropolitan Asylums Board are advertising for assistant medical officers at a new rate of salary. There has been a good deal of dissatisfaction in this service for some time past, and lately an association of assistant medical officers was formed which petitioned the managers for a redress of many grievances, of which the rate of salary was only one. No reply has yet, I understand, been received to this petition, and pending such reply the association is precluded from publishing the correspondence. Intending applicants would therefore, I am sure, be consulting their own interests by finding out from the secretary of the association (Dr. E. G. Goffe, the North-Eastern Hospital, St. Ann's-road, Tottenham, N.) what these grievances are, and how they have been dealt with, before deciding to apply.

I am, Sir, yours faithfully,
JOHN H. TRENCH, M.B. Cantab.

Edgbaston, July 20th, 1914.

CHILD MORTALITY AND ALCOHOLISM IN PARIS.

To the Editor of THE LANCET.

SIR,—May I call attention to the report from your Paris correspondent in THE LANCET of July 11th of a statement of M. Paul Juillerat and M. A. Filassier, in which they do not hesitate to attribute to alcoholism in the parents this enormous proportion of children affected with congenital debility, accounting for 12,342 deaths. This statement is so contrary to the findings of Professor Karl Pearson, F.R.S., and Miss Ethel M. Elderton (Galton research scholar)—viz.: "The mean weight and height of the children of alcoholic parents are slightly greater than those of sober parents, but as the age of the former children is slightly greater, the correlations when corrected for age are slightly positive—i.e., there is slightly greater height and weight in the children of the sober. In the case of the father the correlations are not significant, having regard to their probable error; in the case of the mother they may be just significant, but they are so slight as to have no importance."

My practical clinical experience entirely endorses these scientists' findings. A few years ago I was surprised to find out of a large number of mothers visited in the Hoxton district what strong, well-developed infants these mothers had, although I knew that they were addicted to alcohol in excess. This difference between scientists requires more than a passing notice, and I trust that Professor Karl Pearson will reply to M. Juillerat and M. Filassier for the benefit of all impartial medical practitioners. I am, Sir, yours faithfully,

New Cavendish-street, W., July 18th, 1914. THOMAS DUTTON.

Medical News.

UNIVERSITY OF CAMBRIDGE.—The following medical degrees have been conferred:—

M.D.—F. R. Martin.
M.C.—W. S. Perrin, Caius.
M.B., B.C.—P. Stocks, King's; H. P. Dawson, Trinity; G. Askey, St. John's; and T. L. Hardy, Selwyn.
M.B.—F. E. W. Rogers, Emmanuel.
B.C.—H. Hartridge, King's; W. B. Gordon, Clare; W. F. B. Smith, Pembroke; J. W. Pigeon, Christ's; C. Mackenzie, Emmanuel; and R. A. Thacker, Downing.

UNIVERSITY OF BRISTOL.—At examinations held recently the following candidates were successful:—

SECOND EXAMINATION FOR THE DEGREES OF M.B., CH.B.
Edwin Jennings Ball, Reginald Bertram Britton, Norman Durant, Frederick Viel Jacques, and Ronald Henry Tasker.

FINAL EXAMINATION FOR THE DEGREES OF M.B., CH.B.
Part I. only.—Oliver Charles Minty Davis.

SECOND EXAMINATION FOR THE DEGREE OF B.D.S.
William John Langford.

DIPLOMA IN PUBLIC HEALTH.
William Teulon Torrance.
Part II. (completing examination).—John Richard Kay-Mouat.

SECOND EXAMINATION FOR THE DIPLOMA IN DENTAL SURGERY.
Roy Lugarde O'Sullivan.

UNIVERSITY COLLEGE, LONDON.—Mr. T. B. Johnston, M.B., Ch.B. Edin., lecturer on anatomy in the University of Edinburgh, has been appointed to the newly created office of lecturer and demonstrator in anatomy at University College, London.

UNIVERSITY OF LIVERPOOL.—Mr. John Smyth Macdonald, professor of physiology in the University of Sheffield, has been appointed to the Holt chair of Physiology in the University of Liverpool, vacated by Professor C. S. Sherrington.

VICTORIA UNIVERSITY OF MANCHESTER.—At examinations recently held the following were awarded certificates in School Hygiene and in Factory Hygiene:—G. D. Dawson, M.B., Ch.B., and W. M. MacIlraith, L.R.C.P., L.R.C.S.

IRISH MEDICAL SCHOOLS' AND GRADUATES' ASSOCIATION.—The summer general meeting and luncheon of this association will take place at the Grand Hotel, Aberdeen, on Wednesday next, July 29th, at 1.15 for 1.30 o'clock.

UNIVERSITY OF LONDON.—A meeting of the Senate was held on July 15th, Sir Wilmot Herringham, the Vice-Chancellor, being in the chair. It was resolved in response to a request from the Board of Control to suggest the following conditions for the grants allotted to the board by the Treasury encouraging scientific research into the causes and treatment of mental diseases and mental defect: (1) individual grants to be made to a few observers who have been thoroughly trained and who are capable of carrying out scientific investigations; (2) no grant under the scheme to be made merely to maintain or assist pathological laboratories or to be given to persons for the purpose of routine work; (3) grants to be given only to advance the study of fundamental problems connected with insanity mental deficiency. It was further resolved to inform Board of Control that the Senate would be pleased to ad them as to the objects towards which investigations aided might with most advantage be directed.

BRISTOL GENERAL HOSPITAL.—The president the hospital, Mr. George Alfred Wills, will open the wing and pathological laboratory on Monday next, July 27 at 3.30 P.M.

MEDICAL MAGISTRATES.—The following H practitioners have been made justices of the peace for city: Dr. Frank Nicholson, senior physician, Hull Ro Infirmary; Dr. George Gautby, ex-sheriff of Hull; a Mr. C. H. Milburn.

GLASGOW ROYAL INFIRMARY: POST-GRADUA CLASSES.—Autumn post-graduate classes in clinical medici surgery, and gynæcology, and in the various special depa ments, will be held at the infirmary during the month September. Full particulars may be obtained from superintendent, Dr. J. Maxtone Thom.

BRITISH SCIENCE GUILD.—At the last meeti of the executive committee of the guild a special committ with Sir Norman Lockyer as chairman, was appointed report upon various matters connected with science and State and the encouragement of discovery which w referred to by Sir Ronald Ross in his address delivered the annual meeting of the guild in May last.

THE trustees of the *American Medicine* G Medal have awarded the medal for 1914 to Dr. George Crile as the American doctor who in their judgment " performed the most conspicuous and noteworthy servic the domain of medicine and surgery during the past year."

ST. GEORGE'S HOSPITAL.—The annual din of the St. George's Hospital Medical School will be held Prince's Restaurant, Piccadilly, on Thursday, Oct. 1st, 6.30 for 7 o'clock, when the Right Hon. Sir Gerard Lowt joint treasurer of the hospital, will take the chair. The an introductory address will be delivered on the same day 3 P.M. in the hospital by Mr. A. E. Shipley, F.R.S., Mas of Christ's College, Cambridge.

DONATIONS AND BEQUESTS.—A further gift £10,000 has been made to Cardiff Medical School by anonymous donor who has previously made donati equivalent to £90,000.—Mr. Lynn Thomas, on giv up private practice, has presented to King Edward Hospital, Cardiff, his local private hospital for pay patients, the value of the gift being estimated at £4000

SOUTH-WEST LONDON MEDICAL SOCIETY.— the annual meeting of this society on July 8th the follow were elected as office-bearers for the 1914–15 session: President: Dr. W. D. Murray. Treasurer: Dr. C. J. Mart Secretaries: Mr. R. F. Chance and Mr. H. B. A. Pears Librarian: Dr. C. J. Martin. Council: Dr. E. H. Bro Dr. G. F. Hugill, Dr. G. Ross Laing, Surgeon-Major Robinson, and Dr. C. M. Young.

MEDICAL SICKNESS AND ACCIDENT SOCIETY.—The usual monthly meeting of the executive committee this society was held at 429, Strand, W.C., on July 17 Dr. F. J. Allan being in the chair. The half-yea balance-sheet submitted to this meeting showed t the society's reserves continue to expand. The fun amount to over £260,000, and the income of the soci is well over £35,000 per annum and shows a stea rise every year. The grateful letters from members attain the age of 65 and receive their bonus are hig satisfactory to those under whose careful management society has prospered sufficiently to enable this bonus be paid, and the amount actually paid increases every ye and reached £1500 in 1913. This fact proves that ma attain 65 years, and that insured medical men are, taken a whole, good lives. The claim account presented slightly lower than that of last year and was under expectation provided for by the tables. The new busin report was good and shows an increase over that for same month of the preceding year. A prospectus and information can be obtained from the secretary, 33, Chance lane, London, W.C.

Obituary.

THE RIGHT HON. SIR CHRISTOPHER NIXON, BART., P.C., D.L., LL.D., M.D. DUB., F.R.C.P. IREL.,

VICE-CHANCELLOR OF THE NATIONAL UNIVERSITY OF IRELAND; PAST PRESIDENT OF THE ROYAL COLLEGE OF PHYSICIANS OF IRELAND.

THE death of Sir Christopher Nixon occurred on Sunday, July 19th, at his residence, Roebuck Grove, Co. Dublin, at the age of 64 years. He had been seriously ill with disease of the heart for several months past, and it was known that his chance of ultimate recovery was small. Nevertheless, his death came as a surprise to all except his intimate friends.

SIR CHRISTOPHER NIXON.
(Photo by Lafayette, Dublin.)

Sir Christopher Nixon received his education at Trinity College, Dublin, and the Catholic University School of Medicine. He obtained the Licences of the Royal Colleges of Ireland at an early age, subsequently graduating B.A. and M.B. of Dublin University. He then studied for some years in Paris. On his return to Ireland he was appointed professor of anatomy and physiology in the Catholic University School of Medicine in Cecilia-street. This post did not occupy his entire time, and his appointment as physician to the Mater Misericordiæ Hospital gave him scope for his clinical abilities. To these two institutions and to the interests that arose out of them he gave the best of his life-work. To his gifts as a teacher both owed much, and for years he enjoyed the reputation of being the best clinical instructor among Dublin physicians. He soon changed the chair of anatomy for that of medicine, and his professorial lectures on that subject were attended by students from all the Dublin schools. As time passed his reputation as a practising physician became as great as his reputation as a teacher. Success came to him early, but this did not lead him to take his work lightly or to neglect self-improvement. Up to the failure of his health a year or two ago he took the utmost pains in the preparation of his clinical lectures. He carefully selected his cases for demonstration, and he made a habit of devoting the evening before his lecture to the perusal and even close study of the clinical notes of the cases selected, so that everything might be in order for his lecture. The same care distinguished the systematic course which it was his duty as professor of medicine to deliver. In such careful, honest teaching in the hospital and the school, and careful, honest work in the ward and the consulting-room, Nixon's purely professional activities were mainly expended. He found little time for writing. In his earlier days, indeed, he published several papers which showed not only accurate study but originality of thought. He wrote one book, "Handbook of Hospital Practice and Physical Diagnosis," which was published in 1889. Books on diagnosis are now plentiful enough, but a quarter of a century ago Nixon might fairly be regarded as a pioneer. The book was excellent for its purpose, clear, lucid, terse, and it proved its utility to many successive generations of students. It is to be regretted that lack of time prevented his revising it and bringing it into touch with current knowledge. In his clinical work Nixon took chief interest in the diseases of the heart—a fact which leads inevitably to the recollection that some of the most able students of, and trustworthy authorities on, diseases of the heart have themselves been sufferers from cardiac trouble. To go no further, we may add to Nixon, of Dublin, the names of Gairdner, of Glasgow, and Gibson, of Edinburgh.

Sir Christopher Nixon's teaching duties, together with his hospital work and large private practice, would have been to most men sufficient occupation, but, as a matter of fact, for many years past his extra professional activities occupied a large part of his time and thought. He took a great interest in the development of his school and hospital, and his power of organisation and business ability played an important part in leading to the success which has crowned the work of both these institutions. He felt keenly that his co-religionists in Ireland suffered some inequality in the matter of university education, and therefore he threw himself warmly into the working of the Royal University. At a later date he was active in the work which led up to the establishment of the National University, of which he became the first Vice-Chancellor. He was one of the first to take up warmly the question of establishing a veterinary college for Ireland. His efforts were successful, and when the Royal Veterinary College of Ireland was founded he was appointed first president. In addition to the posts already mentioned, he held several of the medical posts of importance. He was visiting physician to Dundrum Criminal Lunatic Asylum and to the College of Maynooth, and he was consulting physician in lunacy to the High Court of Chancery. Since the establishment of University College, Dublin, as a constituent college of the National University, he occupied its chair of medicine. He represented the Royal University, and more recently the National University on the General Medical Council. He was President of the Royal College of Physicians of Ireland, and was physician to more than one Viceroy of] Ireland, including the present Lord-Lieutenant, Lord Aberdeen.

Many public honours came to him. He was a magistrate and a deputy lieutenant for the county of Dublin. In 1885 the Royal University conferred on him the degree of M.D. *honoris causâ*, and in 1912, on the occasion of the bicentenary celebrations of the medical school of Trinity College, he received a similar honour from his *alma mater*. In 1895 he received the honour of knighthood, and in 1906 he became a baronet of the United Kingdom. Within the present year his name was added to the list of His Majesty's Privy Council in Ireland. He married in 1872 Mary Agnes, daughter of Dominick Edward Blake, of Castlegrove, county Galway, by whom he had issue one son and three daughters.

Sir Christopher Nixon performed an enormous amount of public work with ability and assiduity. He was a physician of skill and learning, and a teacher of the first order. It may be regretted by his friends that he did not find time to give to a wider audience, by means of his pen, the wealth of learning which he lavished on his class of students. That he could have increased his reputation by writing more is certain, but had he done so, much of what he actually accomplished must have been left undone. His was a fine practical career.

TWO DISTINGUISHED PHYSIOLOGISTS.

(FROM A CORRESPONDENT.)

THE physiological world has had to deplore recently the loss of two of its most distinguished continental representatives, Professor Dr. Ludimar Hermann, who for many years occupied with such *éclat* the chair of physiology in the University of Königsberg, and Professor Kronecker, professor of physiology in the University of Berne.

Dr. Ludimar Hermann was born in Berlin on Oct. 31st, 1838. He attended the university and took his degree in 1859, and afterwards as *privat-docent* dedicated himself to physiology in his native city. In 1868 he was called to Zürich as professor ordinarius of physiology, and reference to Pflüger's Archiv and Poggendorff's Annalen shows how active and fertile were both his brain and pen. Many of his contributions to physiology showed a distinctly physical bias, while some were largely chemical. Those physiologists who are old enough to recall the elaborate and vastly unsatisfactory theories of Professor du Bois Reymond, of Berlin, by way of explaining the "muscle current," the "nerve current," and the so-called "negative variation," may also recall how, as it were, with one illuminating suggestion Hermann swept away all this theorising. To-day Hermann's theory of the muscle current holds the field. Not the least of Hermann's services to physiology and to medicine in general is that he in 1863, along with von Recklinghausen, W. Kühne, and Ph. Munk, founded the *Centralblatt für die Medicinischen Wissenschaften*, the parent of *Centralblatts* galore. His "Grundriss der Physiologie," written in a terse, didactic style, ran into many editions, and two of these editions (fifth and sixth) were translated into elegant English by the late Professor Arthur Gamgee. It was also translated into several other languages. Following the idea of the first classic German "Handwörterbuch der Physiologie" (1842–53) and Todd and Bowman's "Cyclopedia of Anatomy and Physiology," Hermann edited as well as contributed to his well-known "Handbuch der Physiologie" which bears his name, and in which some of the epoch-marking contributions to physiology during the latter part of last century may still be read with profit. His "Lehrbuch der Allgemeinen Toxikologie" (1874) was a notable contribution to this subject in these now, alas, far-off days. In 1884 Hermann was called to succeed the versatile von Wittich in the Northern Prussian University of Königsberg, where for many years he added greatly by his contributions to the advancement of that science to which he had dedicated the highest efforts of his intellect. At this time when attacks are made against what is called "vivisection" in this country, it may not be amiss to recall that Hermann published a pamphlet, which was translated into English in 1877 by A. Dickson, of Edinburgh, under the title "The Vivisection Question Popularly Discussed," the original German title being somewhat more terse, to wit, "Die Vivisectionsfrage."

In Berne one day after the death of Hermann Dr. Hugo Kronecker, professor of physiology in the University of Berne, died. Hugo Kronecker was born in Liegnitz in Silesia in 1839. He studied in Heidelberg under Helmholtz and also in Berlin, and graduated in Berlin in 1863; his dissertation dealt with muscular fatigue. As private assistant to the world-renowned physician Traube, Kronecker acquired an intimate knowledge of practical medicine, which served him in good stead as an army surgeon during the campaigns of 1866 and 1870–71. For his services he was rewarded with the decoration of the Iron Cross. He also carried out chemical investigations under Willy Kühne, and in 1868 he went to Leipsic and became assistant to, as well as one of the most esteemed pupils and friend of, Carl Ludwig. He was *privat-docent* in 1872 in Leipsic, and his dissertation "On the Fatigue and Recovery of Cross-striped Muscle" became famous. In 1875 he was elected professor extraordinarius; in 1877 he was called to Berlin; and in 1885 he became professor in Berne, and was thus in the line of succession of the great Haller himself. He liked to call his institute the "Hallerianum." For some years along with Senator he edited the *Centralblatt für die Medicinischen Wissenschaften*. Kronecker's scientific activity was many-sided and catholic in its scope. His studies on muscle form the basis of our knowledge of the laws of muscular fatigue. He discovered that during the first part of a cardiac contraction the heart is inexcitable to stimuli, a phenomenon also discovered by Marey, and by him called the "refractory period." Kronecker's point in the heart is well known, and so are his researches on excised surviving organs, more especially the heart, uterus, and vagina. Reflex action, respiratory movements, swallowing of fluid, vaso-motor centre, sources of animal heat, the action of cardiac poisons, and many other subjects were studied by himself and his numerous pupils. Later in life he made important studies on the effects of rarefied air on the circulation, which have borne important practical results more especially in the process of tunnelling through mountain masses. Kronecker stood in the front rank of physiologists, and his influence on physiology was far greater than might be inferred from the list of papers published under his own name. Like his great master, C. Ludwig, much of the work he inspired was published in the names of his pupils. Everything he did was thorough, and because he had an almost encyclopædic knowledge he was able to give every question he handled an appropriate historical setting. He gave to all his co-workers and pupils "without money and without price" the benefits of his rich stores of knowledge. He was a most lovable, amiable, and generous-hearted man. He was an accomplished linguist, almost a polyglot. In Ludwig's laboratory he could be heard enlightening the latest Italian arrival, who knew no German, in accents as elegant as those spoken by any true-born son of Italy.

All who knew Kronecker—and his friends were legion—became attached to him, for he had a gracious winning personality, at once genial and kindly. He was a foreign member of the Royal Society, an LL.D. of the four Scottish Universities—Aberdeen, Edinburgh, Glasgow, and St. Andrews—as well as D.Sc. of Cambridge. Physiology is vastly the poorer for his death, and his friends will ever keep green the memory of this amiable, accomplished, genial, and erudite physiologist.

THE NATIONAL INSURANCE ACT.

THE WORKING OF THE ACT.

EXPERIENCE that is long enough to be of some service is now accumulating in respect of the working of the Act. With regard to the supply of drugs and appliances, for example, the settlement of the 1913 accounts discloses, as all our readers know, some heavy deficits. A discussion on the subject will be found in a leading article in THE LANCET of June 27th. The Commissioners have been considering steps to obviate the anticipated recurrence of similar deficits in the current year. At a conference with the medical and pharmaceutical members of the Advisory Committee the causes of these deficits were carefully considered, and the conclusion, we believe, was arrived at that a substantial part of the deficits could be traced to the lax methods of prescribing of a few practitioners. The Pharmaceutical Society is anxious, we know, not to attribute too much of the present situation to over-prescribing, and it must be remembered that the cost of the supply of drugs may sometimes have caused the deficits, while, of course, in certain areas the varying incidence of sickness must lead to extraordinary expenses. Lancashire was selected by the Pharmaceutical Society as the area in which to make an inquiry into the matter from the chemists' point of view, but a conference between insurance, panel, and pharmaceutical committees in that county has not resulted so far in any definite suggestions.

The safeguards against lax or excessive prescribing are contained in Article 40 of the Regulations under which a Pharmaceutical Committee by making representations to a Panel Committee may require the latter committee to investigate and report on the subject to the Insurance Committee concerned, and this last body can surcharge the practitioners responsible for the excess. We do not know how often Pharmaceutical Committees have made the necessary representations to Panel Committees, but the Panel Committees have failed to put machinery into operation. The responsibility for the situation appears, therefore, to lie to some extent at the door of the panel practitioners, but we can understand that they may find the *métier* of informer a very difficult and unpleasant one to exercise. This difficulty, we are informed, has been recognised by the Advisory Committee, and their recommendations to the Commissioners may result in some readjustment of the financial machinery of the Act. It seems that this is all the more necessary, inasmuch as a Panel Committee, though the only one of the three statutory bodies interested which can control prescribing is the particular one which is the least interested in the task of control, and more and more as the division between medical practice and the making up of prescriptions becomes pronounced will this position become confirmed. The Advisory Committee have advised the Commissioners that it is undesirable that panel practitioners should have a direct financial interest in the business of chemists on the panel in the same neighbourhood, and the probability is that the use by doctors of chemists' shops as surgeries or consulting-rooms will gradually decline.

Other matters which may call for revision of the Medical Benefit Regulations, and which were recently discussed between the Commissioners and the members of the Advisory Committee, included the procedure in regard to complaints by insured persons of the professional services of panel practitioners and the question of the utilisation of new machinery, such as medical refereeing and laboratory facilities, to the best advantage. It is a gratifying circumstance to note that the number of complaints against panel practitioners has been small and also that the character of these complaints has mostly been unimportant; but it is a fact that the existing machinery for dealing with offenders, whose errors are not sufficiently grave perhaps to warrant representations with a view to removal from the panel, is not satisfactory. For the good of the whole medical profession some of these lax practitioners ought none the less to receive some more effective check than a warning in which no publicity is given to their names, for undoubtedly the protection afforded by anonymity is almost complete. On the other hand, the punishment suggested by publication of names would be very great, and we can conceive grave hardship to follow any unfortunate error. The fact is that Insurance Committees would be well advised to shift the responsibility in really bad cases on to the shoulders of the General Medical Council. Where Insurance Committees are in full possession of facts which point to professional misbehaviour we think that it would be for the good of the public, of our calling, and of the panel service alike, if the cases were brought before the disciplinary body of the profession.

MR. MASTERMAN AND THE PHARMACEUTICAL SOCIETY.

Mr. Masterman, as chairman of the National Health Insurance Commissioners, together with some of his colleagues on the Commission, received a deputation from the Pharmaceutical Society on the subject of the insufficiency of the drug funds in several localities to pay in full the druggists who have undertaken to make up prescriptions under the Insurance Act. Mr. Edmund White, President of the society, on behalf of the deputation, spoke of the funds as being sufficient in about 150 areas out of 196, and of the deficiency where it existed as varying from 3 to 30 per cent. He referred to the high sickness rate among insured women as a contributing cause, and to the receipt of ordinary medical benefit by tuberculous patients who should be receiving sanatorium benefit as another. He said that the agreement by druggists to allow a discount when necessary had been entered into in error, and he urged that the profits on accounts were too small to allow any margin for discounts. Mr. Masterman, in reply, said that the conditions as to discount on druggists' accounts could not be reconsidered until the existing Regulations had been fully utilised. The Government had a small fund wherewith to meet the contingency of excessive sickness, but it was not intended to meet a demand due to excessive prescribing. He recognised that Pharmaceutical Committees in some areas were exercising their powers with regard to the supervision of prescriptions, and urged the Pharmaceutical Society to influence Pharmaceutical Committees to do the same. The matter concerned these and also Panel Committees and Insurance Committees. If the druggists later on satisfied him that the committees had used their utmost efforts under the Regulations, and that nothing had been done by way of surcharging the medical men responsible, a new situation would have arisen with which the Commissioners and the Government would have to deal. Upon the information before him he thought there were grave discrepancies between the cost of prescriptions in different areas and as between individual medical men. He thought these differences must in some cases be due to laxity on the part of a small number of individual medical practitioners. It appeared to him that the time had come to have the tariff for drugs examined by a Departmental Committee, and he would take account of the suggestions made by the deputation.

THE SANITARY CONGRESS AND NATIONAL INSURANCE.

At the twenty-ninth annual Congress of the Royal Sanitary Institute interesting references to the working of the National Insurance Act were made by many speakers. Dr. James Niven, medical officer of health of Manchester, said that it would not be claimed that the Act had produced any great immediate effect on public health administration except as regards tuberculosis, but it promised to do so. It had not hitherto diminished the difficulty of obtaining enough medical practitioners for poor areas to enable patients to receive the time and attention necessary. A State service by whole-time medical officers paid by salaries to attend a definite number of patients was a remedy suggested which was growing in favour. The public health staff had felt the strain of sanatorium benefit work added to their duties, and other public health work had to some extent suffered, but this difficulty was a temporary one only. Dr. Meredith Young spoke of the results of the Act in procuring the early diagnosis of such diseases as Bright's disease, cancer, and heart disease as not so far satisfactory, and Dr. Alfred Greenwood, medical officer of the Kent county council, described institutional treatment under the Act as not having had a fair chance of showing good results, as few sanatoriums as yet had been able to treat any large number of the early cases for which they were intended. In the course of a discussion upon the housing question some vigorous and suggestive observations were made by Dr. J. Holroyde upon the responsibility of the slum dweller for the conditions in which he lived, and upon "lazy and dirty tenants being allowed to be nuisances and breeders of disease, and to go unpunished" as such. He spoke of the slum dweller as unworthy, in the majority of instances, of the "sentimental utterances of a certain type of social reformer whose fetish was the 'liberty of the subject.'" Alderman J. W. Midgley said that the greatest difficulty was not in compelling owners to put their property in a sanitary condition, but in compelling the occupiers to keep it so.

THE LIFE ASSURANCE MEDICAL OFFICERS' ASSOCIATION AND THE ACTS.

A communication has been issued by the secretary of the Life Assurance Medical Officers' Association announcing the intention of the association to extend the scope of its work in order to include all medical questions connected with assurance. The next meeting of the association will be held in November, and will be devoted to a discussion on the Certification of Incapacity under the National Insurance Act. The honorary secretaries are Dr. R. A. Young, 57, Harley-street, W., and Dr. Otto May, 19, Well-walk, Hampstead, N.W.

BLACKBURN INSURANCE COMMITTEE.

At the quarterly meeting of the Blackburn Insurance Committee it was reported that the amount due to medical men on the panel for the year was £20,156, of which £19,644 had been paid, and of which the balance, representing money accumulated in respect of unallotted insured persons, would be divided among the practitioners on the panel in proportion to their lists. In consequence of a report of over-prescribing being made by the Pharmaceutical Committee it was resolved to go through all prescriptions and calculate in respect of each medical man on the panel the average price of prescriptions given by him, the average number of prescriptions issued per person, the average cost of drugs ordered, and also the averages for the same matters over the whole area. A letter was received from the Commissioners calling attention to the desirability of reminding medical men to comply with the conditions necessary for the protection of the drug fund.

DUNDEE INSURANCE COMMITTEE: PRIVACY IN CASES OF COMPLAINTS.

At a meeting of the Dundee Burgh Committee held last week the suggestion of the Medical Subcommittee of the Dundee Insurance Committee—viz., that "the names of persons concerned with cases of complaint reported on by the Medical Service Subcommittee shall not be printed in the reports of such committee, and the persons concerned shall only be referred to in any discussion in the Insurance Committee as 'the patient' and 'the doctor,' or such other terms as will assure that identification is impossible"—was under discussion. The chairman of the Medical Service Subcommittee wrote that he considered the motion *ultra vires*, because the Commissioners had issued regulations by which the proceedings of the subcommittee were regulated, and unnecessary because these regulations prescribed that the proceedings of the subcommittee were to be private. So far as he knew that condition had always been observed, and no name, either of the insured person or of the doctor, had appeared in any of the subcommittee's reports. Eventually the previous question received 16 votes to 11 for the Medical Committee's motion.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The Fate of Bills.

MR. ASQUITH, on Friday, July 17th, made a statement concerning the Bills with which the Government proposed to proceed this session and those which they would abandon. In the list of the abandoned measures are the Direct Representatives of the General Medical Council Bill, the Hops (Substitutes) Bill, and the Naval Medical Compassionate Fund Bill. Amongst the Bills which the Government hope to pass are the Milk and Dairies Bill, the Milk and Dairies (Scotland) Bill, the Inebriates Bill, and the Elementary Education (Defective and Epileptic Children) Bill. The last-mentioned measure was read a third time in the House of Commons on Friday, July 17th.

Asylum Officers' Superannuation Act.

Some negotiations have been taking place with the Home Secretary in regard to the amendment of the Asylum Officers' Superannuation Act. A private Member's Bill on this subject was introduced into the House of Commons this session, but it has not in all respects been acceptable to the Home Office.

Midwives (Scotland) Bill.

One amendment of substance has been introduced into the Midwives (Scotland) Bill which came before the Standing Committee on Scottish Bills of the House of Commons on Wednesday, July 22nd. Clause I., amongst its other provisions, laid down that after Jan. 1st, 1921, "no woman shall attend women in childbirth otherwise than under the direction of a registered medical practitioner unless she be certified under this Act." This provision was wider than the corresponding provision in the English Act. The prohibition there is that "no woman shall habitually and for gain attend," &c. In order to meet certain opposition in the House of Commons an arrangement was come to that the more restricted phraseology of the English statute should be introduced into the Bill in committee. Mr. BARNES, who is taking charge of the Bill, brought forward an amendment to give effect to the arrangements. He confessed that he did so with feelings of regret, but at this stage of the session there were only two alternatives. The Bill must either be sacrificed or the amendment introduced. Medical opinion, he said, preferred to take the Bill in its amended form than not at all. Several honourable Members took the same line, although they admitted that the introduction of the amendment would not conduce to the effective working of the Bill. Ultimately by 21 votes to 3 the committee decided to insert the words "habitually and for gain." The Bill as amended was ordered to be reported to the House.

Early Mental Cases.

Earl **RUSSELL** in the House of Lords on Wednesday, July 22nd, presented a Bill to deal with early mental cases. He said that its object was to enable persons who were in the early stages of lunacy to be placed under control on the authority of a medical man. The Bill avoided the use of the word "certificate" because it was desired that it should carry no stigma. The Bill was read a first time. It is not proposed to proceed further with it this session.

HOUSE OF COMMONS.

WEDNESDAY, JULY 15th.

Medical Inspectors under Mental Deficiency Act.

Mr. **SNOWDEN** asked the Home Secretary what appointments had been made to the posts of medical inspectors under the Mental Deficiency Act, whether all the persons appointed were men, at what salaries they had been appointed, whether the posts were advertised, whether it was intended to appoint a woman or women medical inspectors, and, if so, at what salaries.—Mr. **MCKENNA** replied: Three such appointments have been made, all of men, at the following salaries: chief inspector, £200, in addition to his salary as inspector under the Inebriates Act; one inspector, £500, rising to £800; one inspector, £400, rising to £600. The last two posts were advertised. It is intended to appoint a woman medical inspector, and provision is made in the Estimates for a salary of £350, rising to £550. The Board of Control has not yet secured the services of a suitable person.

Sanatorium Benefit Funds.

Major **HOPE** asked the honourable Member for St. George's-in-the-East, as representing the Insurance Commissioners, whether there was any limit to the percentage of the sanatorium benefit account for which Insurance Committees might take credit and expend on purposes of general administration expenses of the committees.—Mr. **WEDGWOOD BENN** answered: No part of the sanatorium benefit funds of an Insurance Committee may be applied to defray the cost of any administration expenses other than those actually incurred either directly or indirectly in the administration of sanatorium benefit. The amount so applied necessarily varies in different areas, but is in all cases subject to review by the Treasury auditors.

Major **HOPE**: Is it possible to keep the administration expenses of sanatorium and other benefits separate?—Mr. **WEDGWOOD BENN**: I do not think it is practicable to do so.

Unremunerative Scientific Work.

Mr. **COWAN** asked the Prime Minister whether any existing fund is available out of which men of science might be compensated for losses incurred by them in doing unremunerative scientific work when such work had proved to be of advantage to His Majesty's Government and subjects; and whether, if no such fund was available, he would consider the advisability of providing funds for meeting such cases in the future.—Mr. **ASQUITH** said in reply: I am not aware of any fund other than the Civil List. The conditions for the granting of Civil List pensions are laid down by Sections 5 and 6 of the Act I. and II. Vict. c. 2. I am not satisfied that further provision is necessary. I may add that nine pensions were awarded last year for scientific services, two to scientists themselves and seven to their widows or daughters.

Housing in Rural Districts.

Replying to Mr. **LANE-FOX**, Mr. **RUNCIMAN** (President of the Board of Agriculture) said that the number of local authorities carrying out building schemes in agricultural districts was extremely small. In selecting the agricultural districts in which cottages were to be built under the provisions of the Housing Bill the Board would have regard to the urgency of the demand and to the practicability of obtaining land at a reasonable price. He was prepared to consider any representations which might be made to him on behalf of local authorities, but the Board could not bind itself to refrain from exercising its powers in any particular district merely on the ground that the local authority had or had not taken action under the Housing and Town Planning Act. In reply to further questions the right honourable gentleman said that the experience in England was that the local authorities had done very little in the agricultural districts, but having embarked on this scheme proposals brought forward for agricultural or other districts would be considered on their merits.

Answering Mr. C. **BATHURST**, Mr. **ASQUITH** said that he hoped that the Government Housing Bill would be treated as a non-contentious measure and carried into law this session.

Medical Inspection in Secondary Schools.

Mr. **ASTOR** asked the President of the Board of Education whether any provision was made for the medical inspection and medical treatment of children attending secondary schools, and if so from what source was payment provided.—Mr. J. A. **PEASE** wrote in reply: Medical inspection is provided in some secondary schools, and is paid for out of the funds available for the maintenance of the school. Where medical treatment is provided it is generally, I think, provided at the cost of and by arrangement with the parent. The honourable Member will find some information on the subject in the annual report for 1912 of the chief officer of the Board.

Committee on Food Preservatives.

In reply to Colonel **IVOR PHILIPPS**, Mr. **HERBERT SAMUEL** (President of the Local Government Board) wrote that he hoped to be in a position very shortly to announce the names of the Committee on Preservatives in Cream and other Food.

THURSDAY, JULY 16TH.

Scottish Clerks' Association and Medical Benefit.

Mr. **NIELD** asked the honourable Member for St. George's-in-the-East, as representing the Insurance Commissioners, whether application was made by the Scottish Clerks' Association, whose head office was in Glasgow, to have their special medical scheme whereby a member had free choice of doctor, paid the charge incurred, and upon verification of such payment was reimbursed by the society, and which scheme the society had worked successfully for many years, recognised by the Commissioners in the event of them granting the application of the society to be an Approved Society under the Act; whether the society was informed, and when, that their medical scheme was accepted; whether such acceptance was subsequently repudiated; and, if so, when and for want reason.—Mr. **WEDGWOOD BENN** answered: The scheme referred to has at no time been approved by the Commissioners. The latter two parts of the question do not therefore arise.

Supply of Drugs by Panel Practitioners.

Mr. **WEDGWOOD BENN** informed Mr. **PRATT** that an arrangement was expressly provided for in the Regulations that in districts where there was no chemist available the Local Insurance Committee should arrange with the doctors on the panel for the supply of drugs and medicine for a capitation payment of 1*s*. 6*d*. per insured person. The arrangement had been found to work satisfactorily.

The Nursing Grant.

Major **HOPE** asked the Chancellor of the Exchequer whether the House would have the opportunity of considering any scheme for the allocation and administration of the Budget grant in aid of nursing for the current year before such scheme was finally approved.—Mr. **LLOYD GEORGE** replied: It is proposed to present a supplementary estimate to Parliament this session in respect of the service referred to, and I hope that there will be an opportunity for discussion upon it.

Health Lectures.

Answering Mr. **ASTOR**, Mr. **HERBERT SAMUEL** wrote: Section 60 (1) (*b*) of the National Insurance Act provides that the Insurance Committee of a county or county borough may make such provision for the giving of lectures and the publication of information on questions relating to health as it thinks necessary or desirable, and Section 61 (3) of that Act empowers any local authority to subscribe such sums as it may think fit towards the general purposes of the Insurance Committee. Subject to this I am not aware of any general statutory authority for county councils or sanitary authorities in England and Wales to provide lectures on matters relating to public health.

MONDAY, JULY 20TH.

Choice of Medical Man.

Mr. **NIELD** asked the honourable Member for St. George's-in-the-East, as representing the Insurance Commissioners, whether the Commissioners, or any of the Insurance Committees acting under their directions, claimed to have an arbitrary power to refuse an insured person the choice of a medical attendant; if so, was there any appeal, and to whom, from any decision come to; and had any regulations been made upon the subject of applications by insured persons to make their own arrangements, or any definite directions given as to what circumstances should be taken into account in considering such applications.—Mr. **WEDGWOOD BENN** replied: Section 15 (3) of the Act of 1911 lays upon Insurance Committees the duty of deciding in the first instance upon applications from insured persons to make their own arrangements. Regulations have been made in pursuance of the section and the provisions of Section 67 (2) are applicable to these cases.

Medical Treatment of Sailors in Port.

Mr. FRED HALL (Dulwich) asked the honourable Member for St. George's-in-the-East whether in cases in which insured seamen were taken ill in a British port and ordered by a doctor into hospital the expenses which the hospital authorities might require the ship-owner to guarantee were in any circumstances recoverable from the insurance authorities; if they were not so recoverable, whether the ship-owner could be compelled to pay such expenses; and whether, in any proposals brought forward for the amendment of Part I. of the National Insurance Act, consideration would be given to the question of at any rate relieving ship-owners of any responsibility for expenses incurred in connexion with the medical treatment of insured seamen while in British ports.—Mr. WEDGWOOD BENN said in reply: The liability of a ship-owner to provide surgical and medical advice and attendance and maintenance during periods of illness in respect of the seamen employed by him is determined by the Merchant Shipping Acts, and is not affected by the provisions of the National Insurance Acts. I cannot undertake to anticipate the provisions of future legislation with regard to the liabilities of ship-owners to their employees.

Middlesex Insurance Surplus Funds.

Mr. WORTHINGTON-EVANS asked the honourable Member for St. George's-in-the-East whether the Middlesex Insurance Committee had yet distributed among the panel doctors any of the surplus funds for 1913; if not, what was the reason of the delay; and, if so, would he say what addition it had made to the fixed remuneration per head of persons treated.—Mr. WEDGWOOD BENN answered: Advances had been made to a total amount in excess of the amounts due in respect of insured persons on doctors' lists only, but the difference between the amounts due on the latter basis and the amount due in respect of the total insured population of the area entitled to treatment by doctors on the panel cannot be ascertained until the completion of the settlement now in progress.

Tuberculosis Treatment in Middlesex.

Mr. WORTHINGTON-EVANS asked the honourable Member for St. George's-in-the East whether the Middlesex Insurance Committee had distributed among the panel doctors of their area any sum for tuberculosis treatment; and if no such distribution had taken place, would he say what was the cause of the delay.—Mr. WEDGWOOD BENN replied: The answer to the first part of the question is in the affirmative. The second does not therefore arise.

Baby Clinics and Infant Dispensaries.

Mr. RAMSAY MACDONALD asked the Prime Minister whether it had now been decided what departments were to be responsible for the administration of grants to baby clinics and schools for mothers; and whether he could say what the arrangement was.—Mr. ASQUITH said in reply: Any funds available for grants to institutions of the nature of baby clinics and infant dispensaries, whose primary object is to provide medical and surgical advice and treatment for infants and little children, will be administered by the Local Government Board. Grants to institutions of the nature of schools for mothers, the object of which is primarily educational, which provide training and instruction for mothers in the care and management of infants and little children, and which may include systematic classes or home visiting or infant consultations, the provision of specific medical and surgical advice and treatment, if any, being incidental, will be administered by the Board of Education. Any cases of doubt or difficulty will be investigated by a joint committee of officers of the two Boards, which will include women medical officers.

Urban Housing.

Sir A. GRIFFITH-BOSCAWEN asked the Prime Minister whether the Government intended to deal with the question of urban housing.—Mr. ASQUITH replied: Yes, sir.

Imperial Military Nursing Service.

Dr. CHAPPLE asked the Under Secretary for War whether, under the regulations of Queen Alexandra's Imperial Military Nursing Service, it was compulsory for a staff nurse or sister to hold a certificate of three years' training in a recognised hospital.—Mr. TENNANT answered: Yes, sir.

Medical Inspectors under Mental Deficiency Act.

Lord NINIAN CRICHTON-STUART asked the Secretary of State for the Home Department whether he could state the names of the medical inspectors lately appointed under the Mental Deficiency Act.—Mr. MCKENNA answered: The names of the inspectors in order of seniority are:—Dr. R. W. Branthwaite, Dr. A. E. Evans, and Dr. S. E. Gill.

Outbreaks of Cow-pox.

Mr. W. THORNE asked the President of the Local Government Board whether the reports of the medical inspectors of the Board who investigated the outbreaks of cow-pox at Frome in 1909, Sudbury in 1909, Oundle in 1911, and Ashton in 1911 had been published.—Mr. HERBERT SAMUEL replied: Of the outbreaks referred to in the question only one—namely, that at Frome—was investigated by an inspector of the Local Government Board. The origin of this outbreak of cow-pox could not definitely be ascertained, and it was not considered necessary to publish the report. There is no basis for the suggestion that the cows had been infected by the milkers, and I may mention that the affected cowmen were attacked subsequently to the cows on which they attended. No fresh strains of vaccine lymph were obtained in connexion with the outbreak.

TUESDAY, JULY 21ST.

Imperial Military Nursing Service.

Dr. CHAPPLE asked the Under Secretary for War whether there was an ample supply of applicants to fill staff nursing vacancies in Queen Alexandra's Imperial Military Nursing Service.—Mr. TENNANT replied: Yes, sir, the supply is ample.

WEDNESDAY, JULY 22ND.

Tenure of Medical Officers of Health.

Mr. CHARLES BATHURST asked the President of the Local Government Board whether he proposed to issue before the end of this session a general order which would secure for district medical officers of health and sanitary inspectors greater security in the tenure of their offices; and, if so, when such order would be issued.—Mr. HERBERT SAMUEL replied: The matter is still under consideration. I hope to be able to come to a conclusion on it at an early date.

BOOKS, ETC., RECEIVED.

BAUERMEISTER, F., 19, West Regent-street, Glasgow.

Lehrbuch der Grenzgebiete der Medizin und Zahnheilkunde für Studierende, Zahnärzte und Aerzte. Bearbeitet und herausgegeben von Dr. Julius Misch (Berlin). Price 36*s*.

GRIFFIN, CHARLES, AND CO., London.

Treatment of Diseases of the Digestive System. By Robert Saundby, M.D., M.Sc., LL.D., F.R.C.P. (Lond. et I.), Professor of Medicine in the University of Birmingham. Second edition, revised and enlarged. Price 4*s*. net.

HEINEMANN, WILLIAM, London.

The Salvarsan Treatment of Syphilis in Private Practice, with Some Account of the Modern Methods of Diagnosis. By George Stopford-Taylor, M.D., M.R.C.S., and Robert William Mackenna, M.A., M.D., B.Ch., Physicians to the Liverpool Skin Hospital. Price 5*s*. net.

HIRSCHWALD, AUGUST, Berlin.

Abwasserreinigungsanlagen ihre Leistungen und ihre Kontrolle vom chemisch-praktischen Standpunkt. Von Prof. Dr. K. Thumm. Price M.2.80.

HIGGINBOTHAMS, LIMITED, Madras.

Diabetes: Its Nature and Treatment. What Diabetic Patients ought to Know. By the Honourable Dr. T. M. Nair, M.D.

HOLDER, ALFRED, Wien und Leipzig.

Die Krankheiten des hoheren Lebensalters. Von Prof. Hermann Schlesinger (Wien) 1. Teil: Allgemeines, Bewegungsapparat, Blut und Blutdrüsen, Stoffwechsel, Respirations- und Zirkulationstrakt. Price M.12.

KING, P. S., AND SON, London.

The Probation System. By Cecil Leeson. With an Introduction by J. H. Muirhead, LL.D., Professor of Mental and Moral Philosophy, University of Birmingham. Price 3*s*. 6*d*. net.

LAUPP'SCHEN, H., Tübingen.

Festschrift Herrn Dr. Heinrich Bircher, Direktor der Kantonalen Krankenanstalt Aaran (Schweiz) und Chefarzt der Chirurgischen Abteilung zu Seiner 25 Jährigen Amtstätigkeit Uberreicht. Von Freunden und Ehemaligen Assistenten 1887–1912. Price M.18.

LEHMANN, J. F., München.

Chirurgische Diagnostik in Tabellenform für Studierende und Arzte. Von Dr. med. J. Cemach. 100 Tabellen. 10 Seiten fortlaufender Text und 440 schwarze und farbige Abbildungen auf 112 Tafeln. Price M.14.

Lehmann's Medizinische Atlanten. Band XII. Die Fadenpilzerkrankungen des Menschen. Von Dr. Robert Otto Stein, Assistent der Wiener Universitätsklinik für Geschlechts- und Hautkrankheiten. Mit 78 Abbildungen auf 3 schwarzen, 18 Drei- und 11 Vierfarbdrucktafeln. Geh. Price M.10.

Abhandlungen über Salvarsan. Herausgegeben von Professor Paul Ehrli Band IV. Price M.9.

LITTLE, JAMES, Collins-street, Melbourne.

Therapeutics, Dietetics, and Hygiene: An Australian Text-book. By John William Springthorpe, M.A., M.D. Melb., M.R.C.P. Lond., Senior Physician to the Melbourne Hospital. Vol. II.: Therapeutics. Price 25*s*.

MACMILLAN COMPANY, New York.

Bacteriology for Nurses. By Isabel McIsaac, R.N. Second edition, revised. Price 5*s*. 6*d*. net.

Materia Medica for Nurses. By A. S. Blumgarten, M.D., Instructor in Materia Medica at the German Hospital Training School for Nurses, New York. Price 10*s*. 6*d*. net.

MACMILLAN AND CO., London.
Florence Nightingale to her Nurses: a Selection from Miss Nightingale's Addresses to Probationers and Nurses of the Nightingale School at St. Thomas's Hospital. Price 1*s*.

MALOINE, A., Paris.
L'Infection Puerpérale Diagnostic-Traitement. Par Prof. Constantin Daniel (Bucarest).
Les Caractères Médicaux dans l'Ecriture Chionoise. Par le Dr. Lucien-Graux. Price Fr. 4.

MARCUS, LOUIS, Berlin.
Geburten-Rückgang und Geburten-Regelung. Im Lichte der individuellen und der sozialen Hygiene. Von Prof. Dr. med A. Grotjahn (Berlin). Price M.6.

MARLBOROUGH, E., AND CO., London.
Chinese Self Taught. By John Darroch, Litt.D. Price 5*s*.

NERVOUS AND MENTAL DISEASE PUBLISHING COMPANY, New York.
The Myth and Birth of the Hero: a Psychological Interpretation of Mythology. By Dr. Otto Rank, of Vienna. Authorised translation by Drs. F. Robbins and Smith Ely Jelliffe. Price $1.

OPHTHALMOSCOPE PRESS, Thayer-street, W.
Eye-strain in Everyday Practice. By Sydney Stephenson, M.B., C.M. Edin., D.O. Oxon., F.R.C.S. Edin., Surgeon to Queen's Hospital for Children. Second edition. Price 3*s*. 6*d*. net.

ST. CATHERINE PRESS, THE, 34, Norfolk-street, Strand, W.C.
Pride of Body. By Hugh de Sélincourt. Price 1*s*. net.

SCIENTIFIC PRESS, LIMITED, London.
Medical Homes for Private Patients, 1914, with Alphabetically Arranged List of Medical Consultants. Edited by R. Pritchard Binnie. Price 6*d*. net.

THIEME, GEORG, Leipzig.
Uber die Ernährung des Auges. Von Dr. med. C. Hamburger (Berlin). Price M.8.

TOPELMANN, ALFRED, Giessen.
Zur historischen Biologie der Krankheitserreger. Materialien, Studien und Abhandlungen. Herausgegeben von Karl Sudhoff und Georg Sticker. Heft 7. Die Variolation im achtzehnten Jahrhundert. Ein historischer Beitrag zur Immunitätsforschung. Price M.3.

UNIVERSITY TUTORIAL PRESS, W. B. CLIVE, High-street, Oxford-street, W.C.
The London Matriculation Directory, June, 1914, containing Examination Papers with Answers. Price 1*s*. net.

URBAN UND SCHWARZENBERG, Berlin und Vienna.
Technik der Speziellen Klinischen Untersuchungsmethoden. Herausgegeben von Professor Dr. T. Brugsch (Berlin) und Professor Dr. A. Schittenhelm (Königsberg). II. Teil. Preis des kompletten Werkes, M.36.
Compendium der Arzneimittellehre mit besonderer Berücksichtigung der neuen Arzneimittel, der Organotherapie, Serologie und Nährpräparate. Von Dr. Lipowski. Price M.5.
Oesterreichisches Bäderbuch. Offizielles Handbuch der Bäder, Kurorte und Heilanstalten Oesterreichs. Herausgegeben von kais. Rat Dr. Karl Diem. Two volumes.

WRIGHT, JOHN, AND SONS, LIMITED, Bristol.
The Newer Physiology in Surgical and General Practice. By A. Rendle Short, M.D., B.S., B.Sc. Lond., F.R.C.S.Eng., Hunterian Professor, Royal College of Surgeons. Third edition, revised and enlarged. Price 5*s*. net.

VOGEL, F. C. W., Leipzig.
Kurzgefasstes Handbuch der gesamten Frauenheilkunde Gynäkologie und Geburtshilfe für den praktischen Arzt. Herausgegeben von Privatdozent Dr. W. Liepmann in Berlin. Band II. Pathologische Anatomie und Histologie. Von Privatdozent Dr. O. Frankl, Wien. Price M.30.

YEAR BOOK PRESS, 31, Museum-street, W.C.
Girls' School Year Book, 1914. Price 3*s*. 6*d*. net.

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BEATH, R. M., M.B. Belf., has been appointed House Surgeon at the Royal Victoria Hospital, Belfast.

DIXON, GERALD C., M.B., Ch.B. Manch., has been appointed Second House Surgeon to the Manchester Royal Eye Hospital.

FLEMING, G., M.B., C.M., M.R.C.P.E., has been appointed Medical Superintendent to the Durham County Sanatorium.

JOHNSTON, T. B., M.B., Ch.B. Edin., has been appointed to the newly created office of Lecturer and Demonstrator in Anatomy at University College, London.

KINLOCH, J. PARLANE, M.D. Glasg., D.P.H. Cantab., has been appointed to the newly created Lectureship in Public Health at the University of Aberdeen.

LOOSELY, CHARLES J., L.R.C.P. Lond., M.R.C.S., has been appointed Honorary Assistant Anæsthetist to the Royal Dental Hospital, London.

MILLER, S., M.B. Belf., has been appointed House Surgeon at the Royal Victoria Hospital, Belfast.

MUNBY, W. MAXWELL, M.B., Ch.M. Edin., F.R.C.S., has been appointed Surgeon to the Ear, Nose, and Throat Department at the Dewsbury and District Infirmary.

OLIVER, M. W. B., M.A., M.B., B.C. Camb., F.R.C.S. Eng., has been appointed Assistant Ophthalmic Surgeon to the Miller General Hospital.

PURCE, G. R. B., M.B. Belf., has been appointed House Surgeon at the Royal Victoria Hospital, Belfast.

STIRLING, WILLIAM, M.B., Ch.B. Manch., has been appointed Resident Surgical Officer to the Manchester Royal Eye Hospital.

WILLIAMSON, JAMES, M.B., Ch.B. Glasg., has been appointed Senior House Surgeon to the Manchester Royal Eye Hospital.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BANBURY, HORTON INFIRMARY.—House Surgeon. Salary £120 per annum, with board and residence.

BARROW-IN-FURNESS, NORTH LONSDALE HOSPITAL.—House Surgeon. Salary £150 per annum, with residence, board, and laundry.

BEDFORD COUNTY HOSPITAL.—Assistant House Surgeon. Salary £100 per annum, with board, lodging, and laundry.

BETHNAL GREEN INFIRMARY, Cambridge Heath, E.—Second and Third Assistant Medical Officers. Salary at rate of £180 and £160 per annum respectively, with apartments, board, and washing.

BIRKENHEAD BOROUGH HOSPITAL.—Senior House Surgeon. Salary £120 per annum, with board and laundry.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Locum Tenens as Junior House Surgeon. Salary 5 guineas weekly, with board and lodging.

BIRMINGHAM, QUEEN'S HOSPITAL.—House Surgeon for six months. Salary at rate of £50 per annum, with board, lodging, and washing. Also Secretary and General Superintendent. Salary £400 per annum.

BIRMINGHAM, ROMSLEY HILL SANATORIUM FOR CONSUMPTIVES.—Assistant Resident Medical Officer, unmarried. Salary £200 per annum, with board, apartments, and laundry.

BIRMINGHAM UNION, SELLY OAK INFIRMARY.—Resident Assistant Medical Officer. Salary £160 per annum.

BLACKBURN AND EAST LANCASHIRE ROYAL INFIRMARY.—Junior House Surgeon. Salary £100 per annum, with board, residence, &c.

BOOTLE BOROUGH HOSPITAL.—Senior and Junior House Surgeons. Salaries £120 and £100 respectively, with residence, board, and laundry.

BRADFORD ROYAL INFIRMARY.—House Surgeons, unmarried. Salary £100 per annum, with board, residence, and washing. Also Locum House Surgeon. Salary 6 guineas per week, with board, residence, and washing.

BRIGHTON THROAT AND EAR HOSPITAL, Church-street, Queen's-road.—Non-Resident House Surgeon for six months. Salary at rate of £150 per annum.

BRISTOL CITY ASYLUM.—Second Assistant Medical Officer, unmarried. Salary £200 per annum, with apartments, board, washing, and attendance.

CAMBERWELL INFIRMARY AND GORDON-ROAD INSTITUTION.—Assistant Medical Officer. Salary £200 per annum. Also Assistant Medical Officer for Infirmary. Salary £190 per annum. Apartments, board, and washing in each case.

CARDIFF, KING EDWARD VII.'S HOSPITAL.—Two House Surgeons for six months. Salary at rate of £100 per annum, with board, residence, and laundry.

CHELSEA INFIRMARY, Cale-street, S.W.—Second Assistant Medical Officer. Salary £160 per annum, with board, washing, apartments, &c.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—House Physician for six months. Salary at rate of £75 per annum, with board, residence, and washing.

COLCHESTER, ESSEX COUNTY HOSPITAL.—House Surgeon and House Physician. Salary £100 per annum each, with board, residence, and washing.

DEVONPORT, ROYAL ALBERT HOSPITAL.—House Surgeon, unmarried. Salary £150 per annum, with board and laundry.

DORCHESTER COUNTY ASYLUM.—Second Assistant Medical Officer. Salary £300 per annum, with board, &c.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, S.E.—House Physician. Salary at rate of £75 per annum, with board, residence, and washing.

GLASGOW UNIVERSITY.—Lecturer in Pharmacology. Salary £350 to £400 per annum. Also Assistant in Department of Physiology. Salary £150 per annum.

GRIMSBY AND DISTRICT HOSPITAL.—Senior House Surgeon. Also Junior House Surgeon. Salaries £100 and £80 per annum respectively, with board, lodging, attendance, and washing.

HARTLEPOOL, BOROUGH OF.—Medical Officer of Health and School Medical Officer. Salary for combined appointment £400 per annum.

HELLINGLY, EAST SUSSEX COUNTY ASYLUM.—Assistant Medical Officer.

HEXHAM RURAL DISTRICT COUNCIL.—Medical Officer of Health. Salary at rate of 250 guineas per annum.

HULL ROYAL INFIRMARY.—Senior House Surgeon, unmarried. Salary £150 per annum, with board and apartments. Also Assistant House Surgeon. Salary at rate of £100 per annum, with board and lodging.

HULL, VICTORIA CHILDREN'S HOSPITAL, Park-street.—Female Assistant Resident House Surgeon. Salary £45 per annum, with board and laundry.

INVERNESS, NORTHERN INFIRMARY.—House Surgeon. Salary £100 per annum, with board, &c.

JOHANNESBURG, SOUTH AFRICAN INSTITUTE FOR MEDICAL RESEARCH.—Superintendent of Routine Division. Salary £700 per annum. Also Curator of Museum, Photographer, and Photomicrographer, unmarried. Salary £400 per annum.

LEAMINGTON SPA, WARNEFORD, LEAMINGTON, AND SOUTH WARWICKSHIRE GENERAL HOSPITAL.—House Surgeon and House Physician. Salary £100 and £85 respectively, with board, residence, and laundry.

LEEDS, CITY HOSPITALS FOR INFECTIOUS DISEASES AND TUBERCULOSIS.—Two Assistant Medical Officers, unmarried, for six months. Salary at rate of £130 per annum each, with board, lodging, and washing.

LEEDS GENERAL INFIRMARY.—Two House Physicians for six months, without salary, but with board, residence, and laundry. Also Assistant Clinical Pathologist. Salary £150 per annum and luncheon. Also Resident Medical Officer at the Ida and Robert Arthington Hospitals for six months. Salary £60 per annum, with board, residence, and laundry.

LEEDS TUBERCULOSIS ASSOCIATION SANATORIUM, Gateforth, near Selby.—Resident Medical Officer for six months. Salary at rate of £100 per annum, with board, lodging, and washing.

LEICESTER ROYAL INFIRMARY.—Assistant House Surgeon and Assistant House Physician for six months. Salary at rate of £100 per annum, with board, apartments, and washing.

LIVERPOOL SCHOOL OF TROPICAL MEDICINE.—Research Assistant at Runcorn Research Laboratory. Salary £150 per annum.

LONDON LOCK HOSPITAL.—House Surgeon to Female Hospital, Harrow-road, W. Salary £100 per annum, with board, residence, and washing.

LONDON TEMPERANCE HOSPITAL, Hampstead-road, N.W.—Assistant House Surgeon for six months. Salary at rate of £105 per annum. Also Assistant Resident Medical Officer for six months. Salary at rate of £80 per annum, with board and residence.

MAIDSTONE, KENT COUNTY ASYLUM.—Fourth Assistant Medical Officer, unmarried. Salary £250 per annum, with quarters, board, attendance, washing, &c.

MAIDSTONE, KENT COUNTY OPHTHALMIC HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board, residence, and laundry.

MAIDSTONE, WEST KENT GENERAL HOSPITAL.—Assistant House Surgeon, unmarried. Salary £80 per annum, with board, lodging, &c.

MANCHESTER CHILDREN'S HOSPITAL, Pendlebury.—Secretary. Salary £250 per annum. Also Resident Medical Officer, unmarried, for six months. Salary at rate of £100 per annum.

MANCHESTER HOSPITAL FOR CONSUMPTION AND DISEASES OF THE THROAT AND CHEST.—Assistant Medical Officer and Pathologist. Salary £60 per annum. Also Resident Medical Officer for Inpatient Department, Bowdon, Cheshire. Salary £100 per annum, with board, apartments, washing, &c.

MANCHESTER, HULME DISPENSARY, Dale-street, Stretford-road.—House Surgeon. Salary £180 per annum, with apartments, attendance, coal, and gas.

MANCHESTER, MONSALL FEVER HOSPITAL.—Fourth Medical Assistant. Salary £150 per annum, with board, lodging, and washing.

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN, Park-place, Cheetham Hill-road.—House Surgeon. Salary £120 per annum, with apartments and board.

MANCHESTER ROYAL EYE HOSPITAL.—Junior House Surgeon. Salary £80 per annum, with residence, board, and washing.

MANCHESTER ROYAL INFIRMARY.—Medical Officer for Out-Patients and Accidents for six months. Salary at rate of £100 per annum, with board and residence.

MANCHESTER, ST. MARY'S HOSPITALS FOR WOMEN AND CHILDREN.—Four House Surgeons.

METROPOLITAN HOSPITAL, Kingsland-road, N.E.—House Surgeon and Assistant House Surgeon for six months. Salary at rate of £60 and £40 respectively, with board and washing.

NATAL, PROVINCE OF.—Medical Officer for Medical Inspection of Schools. Salary £700 per annum.

NEWARK-UPON-TRENT HOSPITAL.—Resident Medical Officer, unmarried. Board, lodging, and laundry provided.

NEWCASTLE-UPON-TYNE, ROYAL VICTORIA INFIRMARY.—Medical Registrars and Surgical Registrars. Salary at rate of £50 per annum.

NORTHAMPTON GENERAL HOSPITAL.—House Surgeon. Salary £120 per annum, with apartments, board, washing, attendance, &c.

NOTTINGHAM, BAGTHORPE INSTITUTION AND INFIRMARY.—Resident Assistant Medical Officer, unmarried, for six months. Salary at rate of £165 per annum, with apartments, &c.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon, unmarried. Salary £180 per annum, with apartments (not board), attendance, light, and fuel.

NOTTINGHAM GENERAL HOSPITAL.—Assistant House Physician for six months. Salary at rate of £100 per annum, with board, residence, and laundry.

OLDHAM ROYAL INFIRMARY.—Senior House Surgeon and Third House Surgeon for six months. Salary at rate of £140 and £100 per annum respectively, with residence, board, and laundry.

OXFORD, CITY OF.—Assistant Medical Officer of Health and School Medical Officer. Salary £300 per annum.

PADDINGTON GREEN CHILDREN'S HOSPITAL, London, W.—House Surgeon. Salary at rate of £80 per annum, with board, residence, and washing.

PLYMOUTH INCORPORATION OF GUARDIANS WORKHOUSE AND INFIRMARY.—Resident Assistant Medical Officer. Salary £200 per annum, with apartments, rations, and washing.

PORTSMOUTH ROYAL HOSPITAL.—House Surgeon for six months. Salary £90 per annum, with board, &c.

PUTNEY HOSPITAL, Putney Common, S.W.—Resident Medical Officer. Salary £100 per annum, with rooms, board, and laundry.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E.—House Surgeon for six months. Salary £80 per annum, with board, residence, and washing. Also Female House Physician and Casualty House Surgeon for six months. Salary £80 per annum, with board, residence, and washing.

READING EDUCATION COMMITTEE.—Assistant Medical Officer. Salary £300 per annum.

RETFORD, STATE CRIMINAL LUNATIC ASYLUM.—Assistant Medical Officer, unmarried. Salary £225 per annum, with quarters, coals, light, and attendance.

ROCHDALE INFIRMARY AND DISPENSARY.—Senior House Surgeon, unmarried. Salary £120 per annum, with board, residence, and laundry.

ROYAL DENTAL HOSPITAL, Leicester-square, W.C.—Two House Anæsthetists.

ROYAL EYE HOSPITAL, Southwark, S.E.—Junior House Surgeon. Salary £50 per annum, with board and quarters.

ROYAL NAVAL MEDICAL SERVICE.—Twenty-five Appointments.

ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN, Plaistow, E.—Assistant Resident Medical Officer. Salary at rate of £100 per annum, with board, residence, and laundry.

ST. MARY'S HOSPITAL MEDICAL SCHOOL, Paddington, W.—Demonstrator of Physiology. Salary £150 per annum.

ST. MARY'S HOSPITAL, Paddington, W.—Resident Assistant Anæsthetist for six months. Salary at rate of £100 per annum, with board and residence.

SALFORD ROYAL HOSPITAL.—Junior House Surgeon and Casualty House Surgeon. Salary at rate of £100 per annum each, with board and residence.

SALFORD UNION INFIRMARY.—Resident Assistant Medical Officer, unmarried. Salary £150 per annum, with apartments, attendance, and rations.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Senior and Junior House Surgeons. Salaries £100 and £80 per annum respectively, with board, residence, &c.

SHEFFIELD CITY HOSPITALS (INFECTIOUS DISEASES AND TUBERCULOSIS).—Assistant Medical Officer. Salary £150 per annum, with board, lodging, and washing.

SHEFFIELD, EAST END BRANCH OF THE CHILDREN'S HOSPITAL (OUT-PATIENT DEPARTMENT).—House Surgeon. Salary £120 per annum, with board and residence.

SIAMESE GOVERNMENT.—Two Medical Officers.

SOUTH SHIELDS, INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY.—Junior House Surgeon. Salary £115 per annum, with residence, board, and washing.

SOUTHWARK UNION INFIRMARY, East Dulwich-grove, S.E.—Thir Assistant Medical Officer. Salary at rate of £160 per annum, with board, lodging, and washing.

STOKE-UPON-TRENT UNION INSTITUTE AND HOSPITAL, London-road, Newcastle, Staffs.—Assistant Resident Medical Officer, unmarried. Salary £160 per annum, with rations, apartments, and washing.

SUNDERLAND ROYAL INFIRMARY.—House Physician. Salary £120 per annum, with board, residence, and laundry.

SWANSEA GENERAL AND EYE HOSPITAL.—House Surgeon. Salary £125 per annum, with board, washing, and attendance. Also House Physician. Salary £125 per annum, with board, apartments, and laundry.

TRURO, ROYAL CORNWALL INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with rooms, board, and washing.

WALSALL AND DISTRICT HOSPITAL.—Junior House Surgeon and Anæsthetist. Salary £110 per annum, with board, residence, and laundry.

WANDSWORTH UNION INFIRMARY, Ouseley-road, Balham, S.W.—Second Assistant Medical Officer, unmarried. Salary at rate of £150 per annum, with board, lodging, and washing.

WEST BROMWICH AND DISTRICT HOSPITAL.—Assistant Resident House Surgeon and Anæsthetist, unmarried. Salary £100 per annum, with board, residence, and washing.

WEST HAM AND EASTERN GENERAL HOSPITAL, Stratford, E.—Resident Medical Officer. Salary £160 per annum. Also Senior House Physician and Senior House Surgeon. Salary £120 per annum. Also Junior House Physician and Junior House Surgeon. Salary £100 per annum. Board, residence, and washing provided in each case.

WEST LONDON HOSPITAL, Hammersmith-road, W.—Resident Casualty Officer and Anæsthetist. Salary at rate of £40 per annum, with board, lodging, &c.

WEST RIDING COUNTY COUNCIL.—School Medical Inspector. Salary £325 per annum.

WEST RIDING OF THE COUNTY OF YORK, STORTHES HALL ASYLUM, Kirkburton, near Huddersfield.—Assistant Medical Officer. Salary £230 per annum, with rooms, board, attendance, and washing.

WESTON-SUPER-MARE HOSPITAL.—House Surgeon, unmarried. Salary £120 per annum, with residence, board, and laundry.

WINCHESTER, ROYAL HAMPSHIRE COUNTY HOSPITAL.—House Physician. Salary £80 per annum.

WOOLWICH INFIRMARY, Plumstead.—Resident Assistant Medical Officer, unmarried. Salary £180 per annum, with apartments, rations, and washing.

YORK COUNTY HOSPITAL.—House Physician for six months. Salary at rate of £100 per annum, with board, residence, &c.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies for Certifying Surgeons under the Factory and Workshop Acts at Ashton-under-Lyne, in the county of Lancaster; and at Uppingham, in the county of Rutland.

Births, Marriages, and Deaths.

BIRTHS.

HOLLAND.—On July 21st, at 55, Queen Anne-street, W., the wife of Eardley Holland, M.D., of a daughter.

MCCARDIE.—On July 12th, at Frederick-road, Edgbaston, Birmingham, the wife of Dr. W. J. McCardie, of a son.

MARRIAGES.

FREER—PARKER.—On July 18th, at the Parish Church, Arbory, Isle of Man, Robert Mylcraine Freer, M.D., M.S., D.P.H., to Dorothy, daughter of George and Edith Parker, of Balladoole, Castletown, Isle of Man.

DEATHS.

MASON.—On July 19th, at York-road, Birmingham, Hugh Herbert Mason, M.R.C.S., aged 66 years.

NIXON.—On July 19th, at his residence, Co. Dublin, the Right Hon. Sir Christopher Nixon, Bart., P.C., D.L., LL.D., M.D. Dub., F.R.C.P. Irel., aged 64.

REITH.—On July 14th, at Gilcomston Park, Aberdeen, Alexander Reith, M.D., aged 84 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

HEALTH AND SANITATION IN NORTHERN NIGERIA.

THE latest detailed report received at the Colonial Office on the affairs of Northern Nigeria states that malaria continues to be the most prevalent cause of ill-health. It has been pointed out by medical and sanitary authorities that the steadily increasing mining and commercial activities of the country have been responsible for the introduction of numbers of Europeans who have never previously served in the tropics, while the number of natives who invoke the aid of the medical department is yearly growing. It follows that it is quite possible that for some years to come malarial fever may increase statistically while in point of fact it may be really decreasing. The efforts of medical officers and residents to combat small-pox amongst the natives by vaccination continue to be successful; tactful handling yearly induces a larger number to offer themselves for vaccination. The infant mortality from small-pox and fever is enormous, and though the native is slow to take any precaution for himself he is easily approached when the danger to his children is made manifest to him. Only ocular demonstrations, however, will induce him to believe that "water grubs," as he knows them, become mosquitoes, and, as ocular demonstration of the further connexion between mosquitoes and fever cannot yet be given, progress in combating fever must be slow.

Sleeping sickness is well known in the valley of the Niger and in the southern provinces generally, and its existence is also reported in the Central Province. The native "cure" is the application of raw rubber to an incision in the neck which exposes the gland; rubber and gland together are torn off when the rubber has coagulated. Several provinces have established segregation villages for lepers, and in Yola the results are reported to be satisfactory, but the Resident of Bornu states that segregation there is extremely unpopular, and this may probably be taken as the general attitude.

The time of the two European officers of the Sanitary Department has been occupied principally in advising the executive on all matters affecting hygiene and sanitation, and in visiting the provinces and reporting on the sites of Government stations, or advising where future sites should be, and particular spots on which residential quarters should be erected. With the active coöperation of the political officers the sanitary officers are endeavouring to impress on native chiefs the need for, and benefits that will accrue from, the proper sanitation of their towns. In the more enlightened northern provinces possessing effective native administrations much progress is being made, but it will be difficult to induce the natives of the southern pagan belts to make improvements until effective native administrations have been created in those districts. The disposal of sewage and refuse are matters in which the native generally is not concerned, but in many of the native towns of the north, notably Kano, where intensive cultivation is practised, the demand for manure tends to the removal of insanitary refuse, and the cultivators in those districts understand the manurial value of combustible rubbish burned on the ground. The water-supply is principally derived from springs, streams, wells, and marshes. Excepting in the case of well-built European dwellings the houses have thatched roofs, so that any large collection of rain water is not possible. At most of the stations Europeans are daily supplied with condensed water for drinking and cooking purposes. All the water supplied to prisons and native hospitals is boiled. Everything possible is being done to induce the natives to safeguard their wells by the construction of parapets to keep out the surface drainage, and by selecting sites for the sinking of wells away from the neighbourhood of salgas (native latrines) to guard against contamination. There is no system of pipe or other form of underground drainage, and surface drainage is effected by the natural fall of the ground towards streams, but over the greater part of the country percolation is free and, as a rule, fairly rapid. A considerable amount of labour is expended on clearing operations at the various stations during the months of July, August, September, and October, the vegetation then being exuberant. Bush is cleared from the inhabited parts of stations, and the clearing is made more extensive in regions where tsetse flies prevail. At the native towns the practice of keeping undergrowth away by surrounding the town with short crops, such as ground-nuts, sweet potatoes, and beans, is steadily spreading. Elementary hygiene is being taught at the Government schools at Nassarawa, and one of the medical officers at Kano is now attached to the schools and Kano City, his duties being tutorial as well as medical.

FORCIBLE FEEDING: A SIDE ISSUE.

A COMMUNICATION has been sent to us for publication signed by Dr. James W. McIntosh (chairman), Dr. L. Haden Guest, Sir Victor Horsley, Mr. C. Mansell Moullin, and Dr. Frank Moxon, of the Forcible Feeding Protest Committee of Medical Men, which refers to the possibility that prisoners if they do not give up voluntary starvation might be certified as insane and incarcerated in an asylum. The communication encloses a copy of a letter received on July 14th from a convicted male criminal who had refused food and undergone forcible feeding (according to his own account) 238 times at Northampton and Wormwood Scrubbs prisons, and had then been transferred to the Bucks County Asylum on a warrant of detention by order of the Home Secretary. Dr. McIntosh, Sir Victor Horsley and Dr. Guest state that they visited the asylum last week and found no evidence of insanity in this prisoner, but that he had been certified on the reception order by the medical men as insane on the ground that he refused food. They further allege that a week after transference to the asylum the medical superintendent made a report which not only contained no evidence of the prisoner being insane, but definitely stated that he talked quite coherently, that his memory was good, and that he had eaten his food since admission.

GLYCOSURIA AND THE SUGAR INDUSTRY.

To the Editor of THE LANCET.

SIR,—In your issue of April 18th there is a question from Dr. F. C. MacNalty, of Winchester, as to the occurrence of glycosuria amongst those working on sugar-cane estates. One of the hospital assistants here, a Chinaman, on his own initiative, examined some years ago many specimens of urine obtained from men engaged in the crushing of sugar-cane. He found that Fehling's solution was reduced by every specimen he tested. There is no muzzling of the ox that turns the stones between which the cane is crushed, and equally little restraint is put upon the men and boys engaged in the work.

I am, Sir, yours faithfully,

Swatow, China, June 29th, 1914. G. DUNCAN WHYTE.

PLAGUE IN JAVA.

A CONSULAR report on the affairs of Java (Dutch East Indies) states that there have been epidemics of cholera and small-pox, but that the health of the island was, on the whole, better in 1913 than in 1912. The measures taken to combat the plague in East Java have been continued vigorously, but the disease shows no signs of abatement. The number of cases of plague during 1913 was 12,055, and the number of deaths 11,305. There were about 600 European British subjects in Java at the end of 1913.

CONJUNCTIVITIS DUE TO FACE POWDER.

IN the *Journal of the American Medical Association* of April 8th, Dr. N. M. Black has called attention to a cause of conjunctivitis which appears not to have been previously recognised—the use of "face powder." For several years cases have come under his observation with a similar train of symptoms and microscopic appearances of the conjunctival secretion. The patients, invariably women, complain of vision frequently being blurred, inability to use the eyes for any length of time for near vision, and severe itching of the lids. The slightest rubbing of the lids produces marked bulbar hyperæmia and only aggravates the itching. In severe cases the lids become œdematous from the constant rubbing. There is a mucilaginous secretion in varying amounts, which is elastic, and on removal pulls out in long strings. Microscopic examination of the secretion shows numerous epithelial cells mixed with what appear to be pentagonal crystals, the majority having a central black spot. In a few cases many fine amorphous crystals are also present. Smears taken from these cases were shown to a number of pathologists, bacteriologists, and chemists, but a satisfactory explanation could not be obtained. Some suggested that the "crystals" might be secreted by the lacrymal gland, others that they were artefacts. Slides prepared from the eyes of two sisters having the usual train of symptoms were submitted to Dr. C. H. Bunting, professor of pathology in the University of Wisconsin College of Medicine. He wrote as follows: "After trying various solvents I found that strong alkalies caused the crystals to swell and become spherical, with a doubly contoured wall. When they swelled enough to rupture, iodine showed that they discharged soluble starch into the surrounding fluid. So you are dealing with plant cells, probably from face powder. They are not lycopodium." After examining various face and dusting powders Dr. Bunting said that the "crystals" came from rice powder. He thought they must be the cells from the hard exterior. The fine "amorphous crystals" mentioned above he found in face but not in rice powder. He could not determine their nature. Several other patients presenting the same symptoms and microscopic conditions used face powder made by the same firm. Dr. Black gives the following explanation. When the powder is applied to the face with a puff some fine dust arises and lodges on the moist conjunctiva. The rice flour, rendered mucilaginous by the tears, is not washed away. The woody cells of the hard exterior of the rice grain swell, and, being angular, produce conjunctival irritation, which is aggravated by rubbing. Those who use chamois to apply the powder are less likely to cause fine dust to arise. This accounts for the conjunctivitis not being produced in every person using face powder. The symptoms are quickly relieved by flushing the conjunctival sac with boric or normal saline solution and the use of an ointment made of equal parts of lanoline and petrolatum, which seems to agglutinate the cells and allow their being easily flushed out.

A DISCLAIMER.

To the Editor of THE LANCET.

SIR,—May I ask the courtesy of your columns to state that an article purporting to express my opinions, and quoting from my medical writings, which has appeared yesterday in a daily journal, has been issued entirely without my consent or authority, and to my great annoyance.

I am, Sir, yours faithfully,
London, July 15th, 1914. R. FORTESCUE FOX.

GOGGLES FOR POLAR EXPLORERS.

THE officers of the forthcoming Antarctic Expedition, which is to be led by Sir Ernest Shackleton, have devoted special attention to the question of protection against snow blindness, which, as is well-known, has caused a great deal of suffering and inconvenience in previous expeditions to the Antarctic. Every member of the expedition has been supplied with a special pair of goggles, which it is anticipated will provide all possible protection. The form of these goggles in ordinary cases is a pair of gauze eye cups made of aluminium-nickel alloy, joined together by an adjustable leather bridge. The edges of the cups which touch the skin are leather bound and the goggle is fixed by an adjustable leather strap passing round the head. Each goggle has been glazed with lenses ground in euphos glass made to the formula of Professor Schantz, in the tint commercially known as No. 4. This glass has been proved experimentally at the National Physical Laboratory and elsewhere to absorb the whole of the ultraviolet rays. Up to the present the only instance recorded in which this glass has been used in polar exploration was on Amundsen's Expedition, when he and his assistant, Hansen, both wore Professor Schantz's glass, and were the only two members of the expedition doing so. They record that they were the only two members that did not suffer from snow blindness in any degree. In the case of one of the surgeons of the expedition, who is astigmatic to the extent of 3½ diopters, the only difference made has been to fix a leather-bound rigid bridge instead of the adjustable one so that the whole goggle front itself will be perfectly rigid, all minor adjustments for axis can be easily made in fixing the leather strap round the head. In the case of one of the geologists, who is myopic to the extent of 4 diopters, a film of euphos glass has been fused on to a white blank, on which blank the whole of the correction has been ground, so that equal tint protection is provided from centre to edge, irrespective of the varying thicknesses of the glass. Each man has been provided with a spare pair of lenses, and the frame is so made that on levering up a little of the leather binding on the edge of the cup a pin can be easily removed which opens the rims, and after replacing the broken lens the rims can be just as easily fastened together again by re-insertion of the pin. The expedition has also been supplied with tubes of a special preparation with which the lenses can be cleaned and polished, and which will prevent the condensation of the wearer's breath on the glass. Sir Ernest Shackleton has reported, after using specimen goggles made for experiment on his Norway Test Expedition, that they proved to be satisfactory in every particular, and it is anticipated that as a result of the wearing of these glasses there will be very little trouble caused by the effects of snow glare on the eyes of the members of the expedition.

URINE-COLLECTING BOTTLES.

IN reply to U.C.B.'s inquiry in THE LANCET of July 18th, a correspondent writes to say that the urine bottle referred to was suggested by Dr. H. Carter Thorp, of Ryde, and described in THE LANCET of August 23rd, 1902. It is made by Messrs. Down Bros., Limited, St. Thomas's-street, S.E., and shown in their catalogue.

PARTNERSHIP.[1]

Mr. H. C. Emery has in a recent book compiled a handy and convenient summary of the law of partnerships under the Partnership Act, 1890, and the Limited Partnership Act, 1907, which should be of use to persons entering upon commercial partnerships as well as to lawyers in practice. The facts and circumstances of medical partnership have little relation to those dealt with in such a volume, but it may be suggested that the provisions of the Limited Partnership Act may sometimes be of use to medical men who desire to invest capital in minor commercial undertakings.

Messrs. Angus and Co., of 83, Wigmore-street, London, W., have issued an abridged catalogue of the microscopes and accessory apparatus manufactured by the firm of C. Reichert, of Vienna, for whom they are the agents in this country. It is interesting to note that since the foundation of the firm in 1876 they have produced and sold some 55,000 microscopes—a testimony to the scientific accuracy of their instruments.

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Mr. Boulton Hall.—The passage is correctly quoted from THE LANCET, but much has since been written on the subject, indicating that nicotine is not the only harmful ingredient in tobacco-smoke.

A. V. (Barcelona).—This treatment is no longer regarded seriously. The last reference was a special article on Some Constituents of Violet Leaves, which appeared in THE LANCET of April 22nd, 1905.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

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[1] Partnership: A Concise Treatise on the Law and Practice Relating to Partnerships. London: Effingham Wilson. 1914. Pp. 117. Price 5s. net.

Medical Diary for the ensuing Week.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Dr. Pritchard: Bacterial Therapy Department. Mr. B. Harman and Mr. Gibb: Diseases of the Eye.

TUESDAY.—10 A.M., Dr. Simson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations. Dr. Simson: Diseases of Women. Mr. Gibb: Diseases of the Eye.

THURSDAY.—9 A.M., Dr. Bernstein: Bacterial Therapy Department. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Mr. B. Harman: Diseases of the Eye.

FRIDAY.—10 A.M., Dr. Simson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Eye Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10.30 A.M., Surgical Out-patient (Mr. E. Gillespie). 2.30 P.M.. Medical Out-patient (Dr. T. R. Whipham); Gynæcological (Dr. Banister). 3 P.M., Medical In-patients (Dr. R. M. Leslie).

TUESDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. Howell Evans); Nose, Throat, and Ear (Mr. H. D. Gillies). X Ray and Electrical Methods (Dr. Metcalfe). 3.30 P.M., Medical In-patient (Dr. A. J. Whiting).

WEDNESDAY.—Clinics:—2 P.M., Throat Operations (Mr. Gillies). 2.30 P.M., Children's Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. Dorell).

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson); X Rays and Electrical Methods (Dr. Metcalfe).

FRIDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld): Surgical (Mr. E. Gillespie); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. G. P. Chappel).

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, Medical School, City-road, E.C.

MONDAY.—1.30 P.M., Department for the Prevention of Consumption. 2 P.M., Cardiac Department, Dr. Stott; Out-patient Department, Dr. Phear, Dr. S. Thompson. 3 P.M., Wards, Dr. Phear.

TUESDAY.—9 A.M., Laryngological Department, Mr. Mant. 1.30 P.M., Department for the Prevention of Consumption. 2 P.M., Out-patient Department, Dr. M. Leslie, Dr. B. King; Operations, Mr. A. Evans. 3 P.M., Wards, Dr. White. 4 P.M., Wards, Dr. M. Leslie.

WEDNESDAY.—2 P.M, Wards, Dr. A. Davies; Out-patient Department, Dr. Drysdale, Dr. Kellie. 4 P.M., Wards, Dr. Drysdale. 4.30 P.M., Roentgen Ray Department, Dr. Jordan.

THURSDAY.—9.30 A.M., Dental Department, Mr. G. Thomson. 10 A.M., Cardiac Department, Dr. Stott. 1.30 P.M., Department for the Prevention of Consumption. 2 P.M., Out-patient Department, Dr. Phear, Dr. S. Thompson. 4.30 P.M. Laryngological Department, Mr. Mant.

FRIDAY.—1.30 P.M., Department for the Prevention of Consumption. 2 P.M., Wards, Dr. Calvert; Out-patient Department, Dr. M. Leslie, Dr. B. King.

CENTRAL LONDON THROAT. NOSE, AND EAR HOSPITAL, Gray's Inn-road, W.C.

TUESDAY AND FRIDAY.—3 P.M., Dr. A. Wylie: Diseases of the Larynx. 4 P.M., Dr. D. McKenzie: Endoscopy.

THE THROAT HOSPITAL, Golden-square, W.

MONDAY.—5.15 P.M., Special Demonstration of Selected Cases.
THURSDAY.—5.15 P.M., Clinical Lecture.

For further particulars of the above Lectures, &c., see Advertisement Pages.

A DIARY OF CONGRESSES.

THE following Congresses, Conferences, and Exhibitions are announced. In 1914:—

May 1st–Nov. 1st (Lyons).—International Town Hygiene Exhibition.
„ 15th–Oct. 15th (Berne).—Swiss National Exhibition.
May–October (London, Shepherd's Bush).—Anglo-American Exposition.
June–July (Groningen).—University of Groningen 300th Anniversary Celebration.
July 27th–31st (London).—Fifth Annual Session of the Clinical Congress of Surgeons of North America.
„ 28th–31st (Aberdeen).—Eighty-second Annual Meeting of the British Medical Association.
July–September (Australia).—Eighty-fourth Annual Meeting of the British Association for the Advancement of Science. (July 28th to August 3rd at Perth, August 8th to 12th at Adelaide, August 13th to 19th at Melbourne, August 20th to 26th at Sydney, August 27th to Sept. 1st at Brisbane).
Aug. 2nd–10th (Paris).—Tenth Congress of Esperantists.
„ 3rd–8th (London).—Sixth International Dental Congress.
„ 10th–15th (St. Petersburg).—Twelfth International Congress of Ophthalmology.
„ 29th–Sept. 14th (Toronto).—Canadian National Exhibition.
Sept. 7th–12th (Berne).—International Congress for Neurology, Psychiatry, and Psychology.
„ 10th–12th (Fort William and Port Arthur, Ontario).—Fourth Annual Congress of the Canadian Public Health Association.
„ 21st–26th (Victoria, B.C.).—Dominion Exhibition.
„ 21st–26th (Vienna).—Third International Congress on Diseases of Occupation.
„ 30th–Oct. 4th (Brussels). Fourteenth French (de langue française) Congress of Medicine.
Oct. 31st–Nov. 2nd (Berlin).—First Congress of the International Society for Sexual Research.
Nov. 15th–21st (London).—Health Week. (Under the direction of the Health Week Committee appointed by the Royal Sanitary Institute.)
(St. Petersburg).—Third Mendeléeff Congress of Pure and Applied Chemistry and Physics.

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MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. I. of 1914, which was completed with the issue of June 27th, were given in THE LANCET of July 4th.

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(Taken daily at 8.30 a.m. by Steward's Instruments.)
THE LANCET Office, July 22nd, 1914.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remark
July 16	29·95	W.	0·01	125	71	57	59	64	Cloudy
„ 17	30·00	W.	...	123	75	58	59	64	Cloudy
„ 18	30·02	S.W.	...	131	76	57	61	65	Cloudy
„ 19	29·84	S.	0·05	112	74	62	64	66	Cloudy
„ 20	29·65	S.E.	...	119	75	62	65	67	Cloudy
„ 21	29·73	E.	...	111	76	65	62	67	Overcast
„ 22	29·68	S.W.	...	113	73	62	65	68	Cloudy

The following magazines, journals, &c., have been received:— Clinique Ophthalmologique, American Journal of Obstetrics, Journal of Physiology, Albany Medical Annals, Medical Review of Reviews, British Journal of Dental Science, Calcutta Medical Journal, Midland Medical Journal, Indian Journal of Medical Research, American Medicine, American Journal of Gastro-Enterology, Therapist, Proceedings of the Royal Society of Medicine, Medical Journal of South Africa, British Journal of Dermatology, British Dental Journal, Canadian Medical Association Journal.

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Address in Medicine

ON

MEDICINE FROM THE CHEMICAL STANDPOINT.

Delivered at the Eighty-second Annual Meeting of the British Medical Association

By ARCHIBALD E. GARROD, D.M.,
M.A. Oxon., F.R.C.P. Lond., F.R.S ,
PHYSICIAN TO ST. BARTHOLOMEW'S HOSPITAL.

Mr. President, Ladies, and Gentlemen,—So rapidly is our field being extended that year by year it becomes more difficult to deliver an address in medicine which shall treat of the subject in any of its wider aspects. None the less I would express my sincere gratitude to the Council of the British Medical Association for the honour which it has done me in inviting me to essay the task.

Seeing that we are met together within the precincts of an ancient seat of learning which was the first of all British universities to establish a chair of medicine, it might be fitting that I should take as my subject some phases of the past history of our science and art. However, we see around us so many signs of a spirit of emulation and progress, and of a vitality which has been stimulated rather than inhibited by the lapse of centuries, that I have no fear lest, in selecting as my theme some of the most recently acquired aspects of medicine, I shall be in less complete accord with the *genius loci*.

The Foundations of Medicine.

The curriculum laid down for our students bears witness to the complexity of medical science. No student is held competent to enter upon his clinical studies until he has acquired some grounding in chemistry, physics, and biology, and a more detailed knowledge of human anatomy and physiology. In a word, medicine rests upon a substructure of other sciences, and the entire system of medical education is based upon the fundamental truth that a knowledge of the normal must needs precede any profitable study of the abnormal.

It need hardly be pointed out that such a curriculum in no way reflects the path along which medicine, as we know it, has been evolved. Hippocrates, Galen, and their contemporaries enjoyed no such advantages as do our students of to-day. They initiated the study of clinical medicine at a time when the very foundations of chemistry and physics were as yet unlaid—when the anatomy of the human body was, to all intents and purposes, a sealed book, and when physiology, pathology, and pharmacology did not yet exist. At a later period, and with the passing of the Dark Ages, science began to awaken from her long sleep, and there came, with the revival of learning, a realisation of the need of a new medicine, freed from the trammels of tradition, and based upon observation and experiment. Physicians began to observe for themselves once more, and no longer relied almost wholly upon the teachings of the ancients. Step by step the study of those primary branches of science upon which rational medicine needs must rest was pursued, to a large extent by medical men who recognised, and strove to supply, the growing demands of the healing art. Thus it has come about that, immense as is the debt of medicine to the pure sciences, the reciprocal debt of those sciences to medicine is hardly, if at all, less.

The more ancient sciences were studied at the outset merely as stepping-stones to practical ends—ends which were, for the most part, far less worthy than those of medicine—were sometimes grotesque, and usually unattainable. Thus astronomy had its origin in astrology; the earliest chemists were alchemists who were intent upon the discovery of the philosopher's stone and the elixir of life; and physics is beholden, in no small degree, to the futile quest of perpetual motion. Then came a time when knowledge began to be pursued for its own sake, and the true scientific spirit was born. But progress was for a long time slow, and only now, when chemistry has advanced beyond all recognition, when every detail of structure of the human body has been revealed by anatomy, and when physiology and pathology find many who make them the study of their lives, are the foundations of the clinical edifice being securely laid.

So complex is modern medicine, and so diverse are its aspects, that we cannot hope to attain to any comprehensive notion thereof if we regard it from any single point of view. We need to adopt, on the one hand, the standpoint of the human organism engaged in its unceasing struggle to ward off the assaults of disease, and, on the other hand, that of the agents of disease which are as incessantly striving to gain a foothold. The clinical worker whose task it is to diagnose the nature and seat of the malady, and to intervene in the interests of the patient, has *his* special outlook; and the pathologist, who studies the havoc worked by disease, has *his*. Again, we may contemplate the human organism as a whole, or as a complex structure built up of diverse organs and tissues, each with its assigned functions, or once again, as a nation of cell units endowed with manifold activities. Lastly, we have to picture each individual cell as a congeries of chemical molecules which are being continually pieced together and broken down by the agency of intracellular enzymes. Thus physician and physicist, physiologist and pathologist, biologist, bacteriologist, and chemist, each looks out upon the field of medicine from his own standpoint, and to each it wears a different aspect. Only by the combination of the several mental pictures can a stereoscopic presentation be obtained.

The Progress of Chemical Science.

Many of the early chemists were practitioners of medicine, and from the days of that eccentric genius who assumed the name of Paracelsus, and of van Helmont, the father of physiological chemistry, down to the earlier years of the nineteenth century, the chemical outlook was that most widely adopted by medical men. But in those earlier days chemistry itself was in far too embryonic a stage to lend much aid to the elucidation of the problems of disease, and, as time went on, the chemical outlook was abandoned to a large extent in favour of that afforded by the rapidly advancing study of morbid anatomy. Throughout the greater part of the last century morbid anatomy and histology held the field unchallenged; and they were justly entitled to do so in view of the progress made in the macroscopic and microscopic study of diseased structures, upon which was reared the imposing edifice of cellular pathology.

If, of recent years, morbid anatomy has yielded the foremost place to other branches of pathology, this should not be interpreted as showing that the subject is exhausted, nor that its value is less than used to be supposed, but rather as evidence of the need to bring forward the less advanced branches to the same level. The advance guard is being strengthened by calling up the supports in order that the army of progress may present an even front. Yet, during the period when morbid anatomy and pathology were synonymous terms, the science of chemistry, both in its inorganic and organic branches, was making rapid strides, and when medical investigators turned back once more to pick up the chemical threads they found, in the chemistry of that later day, a mass of systematised knowledge ready prepared to aid them in their advance. This new science—for such it is—had its birth in the epoch-making discoveries of Priestley and Lavoisier.

Nor had that side of chemistry which bears most directly upon medicine been neglected. The syntheses of urea, by Wöhler in 1828, brought the products of life within the province of the pure chemist, and there had always been investigators who, with Liebig, studied the intake and output of living organisms, and who added to our knowledge of the chemistry of the urine, and of the problems presented by such maladies as diabetes and gout. Amongst these not a few countrymen of our own will always be remembered with honour. In any modern treatise on chemistry the section which deals with the compounds of carbon far exceeds in bulk that which is devoted to the inorganic branch. Carbon compounds of ever greater complexity have been built up, step by step, from their elements, and even the synthesis of proteins is being brought within our reach, thanks to the labours of Emil Fischer and of a body of workers who have derived their inspiration from him.

BIOCHEMISTRY.

Thus have been gained possibilities of fresh and conspicuous advances in the field of physiology. A new era of pathology has dawned. Side by side with the new science of bacteriology, which has already, in but a few years, transformed our conceptions of disease, there is growing up a vigorous science of chemical pathology, and, for the moment, morbid anatomy is resting upon its laurels.

The provinces of bacteriology and pathological chemistry are very different. Whereas the former investigates the actual agents of disease, the latter reveals the disturbances which result from their invasion. If I may venture to employ again an analogy already used elsewhere, the bacteriologist deals with a stone which, falling into the pool, ruffles its surface, whereas the chemist directs his attention to the ripples which spread outwards, in expanding circles, from the point of impact of the stone. Yet bacteriology is ever setting new tasks for the chemist, who just as he is coming to grips with the older problems of the structure of proteins, carbohydrates and fats, and of the chemical changes which constitute the life of the tissues, is confronted with a demand for information regarding substances and processes which are still beyond his reach—intangible entities revealed as yet by single properties. As he surmounts the foothills there open upon his view loftier heights beyond.

Biochemistry presents itself under two aspects: a static, which is concerned with the study of chemical structure, and a dynamic, which deals with the chemical changes of which the living tissues are the seats. Thus we may wander among the streets of some deserted city of the past, may study the fabric of its buildings—the stones, bricks, and mortar employed in their construction, and in this way may gain some knowledge of the uses for which the several buildings were designed. Just so the anatomist investigates the structure of the organs of the dead body, and the chemist, by his analyses, gains a minute insight into the molecular groupings of the materials of which its tissues are composed. Even in the dead city all is not still and at rest. The ancient walls are subject to weathering and decay, and gradually crumble under the influence of air and rain. Yet other changes are wrought by lowly forms of animal and vegetable life, which undermine the ruins and, in the end, bring about their downfall. So, too, in the dead body, destructive agencies are constantly at work until the dust returns to its dust again.

Once more we may tread the street of a city of to-day, may watch the movements of the crowds as they pass, the gathering and dispersal of groups of people. We may study the arrangements for the disposal of waste products, the ways in which food supplies are brought in, dealt with, and distributed. Or we may investigate the police arrangements, the sanitary services, and the various devices resorted to by the community for its protection. The study of the human organism on such lines is the province of physiology, and it is to designate the sum total of the manifold chemical processes in action within the living organism, and which constitute its life, that the term "metabolism" is employed.

But the chemical physiologist is far from sharing the opportunities afforded to our wayfarer. He is hardly permitted to set foot within the walls of the living city, and on that account his investigations are carried on under serious disadvantage. Determination of the balance of intake and output affords clear indication of the grosser chemical interchanges in the body, but the study of the intermediate stages is a far more difficult task, and only now are we beginning to gain an insight into the details of metabolism. Such knowledge of these details as we have acquired is largely based upon circumstantial rather than upon direct evidence. But here, as in so many other fields, pathology lends valuable aid to physiology, and Nature's experiments and her mistakes afford, to him who is able to read them aright, insight into the methods of her orderly working.

INVESTIGATIONS INTO THE PROTEINS AND OTHER COMPOUNDS.

Among the building materials employed in the construction of living organisms the proteins hold a place apart. They are the actual vehicles of life, and upon their properties the very possibility of life depends. Important, and indeed essential, as are the parts played by compounds of other kinds, carbohydrates, fats, water, and inorganic salts, their functions within the organism are secondary. They are employed in the service of the proteins of the tissues. Fats and carbohydrates are in part burned to supply the daily demand for kinetic energy, the energy expended in muscular action, in glandular activities, and in the maintenance of the temperature of the body, and are in part stored for future use. Even much of the protein of the food is, as we now believe, stripped of its nitrogen and utilized as fuel, whereas another portion is employed in the reconstruction of the tissues. No less essential to the organism are the inorganic salts, in the regulation of the osmotic phenomena, in the maintenance of the alkalinity of the body fluids and the acidity of the gastric juice, in conferring the required rigidity upon the skeleton, and in a hundred other ways.

The more intimate knowledge of the structure of protein molecules which we now possess is an acquisition of the still young twentieth century. The huge molecules have been teased out—to borrow a term from histology—and as a result the conception of an unwieldy group of atoms has been replaced by that of an orderly structure composed of comparatively simple building stones of a neatly constructed block of masonry rather than an amorphous mass of concrete. These building stones are the now familiar protein fractions. Some of them have long been known as rare ingredients of the excreta—such, for instance, as tyrosin, leucin, and cystin—but whence they came and how they were formed in the body was, until recently, unknown.

Widely as the protein fractions differ in their structure they have this in common—that they are amino- or diamino-acids. Seeing that they share the properties of acids and bases, they are capable of combining with each other to form the complicated chains or networks which constitute the protein molecules; and since they admit of combination into many different groupings, there is a possibility of almost infinite varieties of protein structure. The number of distinct fractions is by no means large, but every change of grouping, however slight, brings into existence a new protein. The poet Lucretius, whose marvellous insight led him as by instinct to views of the constitution of matter which science has only reached after centuries of observation and experiment, was fully alive to these capabilities of atomic rearrangement. Writing before the commencement of the Christian era he tells us how just as in his verses many different words are formed by the rearrangement of but a small number of letters, with the result that word from word and verse from verse differs both in sense and sound, so also by the various groupings of a few essentials are built up all the objects of animate and inanimate nature: "Tantum elementa queunt mutato ordine solo."

Abderhalden has estimated that the possible combinations of the 20 known protein fractions, in which each individual fraction is represented once and only once, need for their expression a number composed of no less than 13 digits. When we consider that from some proteins one or more of the animo-acid fractions are missing, and that in almost all of them the representation of the several fractions differs widely from that assumed in the calculation, we can realise that the number of possible varieties of grouping can only be expressed by figures which surpass those with which the astronomer is wont to deal. Nor is evidence lacking that the proteins of living organisms do actually differ among themselves in ways not dreamed of until quite recent times.

THE SPECIFICITY OF CHEMICAL STRUCTURE.

The dictum, so painfully familiar, that "all flesh is not the same flesh, but there is one kind of flesh of men, another flesh of beasts, another of fishes, and another of birds," has acquired a new reality. We are learning, upon evidence which admits of no question, that the very proteins which perform identical functions in different animals are not themselves identical, but differ from genus to genus, from species to species, and differ the more widely the further the several species are separated from each other in the evolutionary scheme.

Much of this evidence is derived from delicate and subtle reactions, such as the precipitin test, and from the study of the response of the organism to the introduction of foreign proteins, the phenomena of anaphylaxis, and the formation of protective enzymes; but some facts which have been demonstrated to generations of students, such as the differences in the crystalline forms of the hæmoglobins of animals of different species, bear witness to specificity of chemical structure. Nor can we suppose that the differentiation stops short at the boundaries of species; chemical individuality follows, as a necessary corollary, to chemical specificity.

The effect upon physiological thought of this conception of chemical specificity has already been far-reaching. We no longer think of the proteins of food as utilised, after comparatively slight change, and in such complex forms as albumose and peptone. The differences between the food proteins and those of the animal fed necessitate the assumption that their disintegration by the digestive juices is far more thorough than used to be supposed, and that reconstruction of the proteins in the organism fed starts from the primary amino-acid fractions. That the primary fractions are able to be so utilised has been demonstrated by experiment.

During the earliest period of life, when the digestive functions are as yet but imperfectly performed, nature supplies for the infant organism a natural diet exactly adapted to its requirements, and containing, in due proportions, all the materials necessary for its nutrition. Mother's milk has the additional advantage that its components have the specific stamp, an advantage which is, in all probability, connected with the phenomenon known as anaphylaxis. In later life any such exact adaptation is clearly unnecessary, and vegetivorous animals, whose earliest food was mother's milk, thrive upon a diet of which the protein constituents are not even of animal kinds.

Even this does not exhaust the complexity of protein structure, for each tissue-protein bears not only the impress of the specific stamp, but also of a second stamp derived from the organ of which it forms part. The recent work of Abderhalden and the study of cytolysins afford evidence that the proteins of the liver, spleen, pancreas, or any other organ have their special peculiarities. It seems probable that the liver proteins of the sheep and dog, although they exhibit specific differences, agree in containing in their molecules some particular group of atoms the possession of which confers the hepatic impress. Thus an independent system of cross classification is indicated.

It has long been known that sulphur is a constituent of proteins, and that in some of them phosphorus is also contained, We have now learnt that the small quantity of sulphur met with is contained in one particularly amino-acid fraction—namely, cystin—and that an unusually large proportion of sulphur indicates a large cystin content. The phosphorus, on the other hand, is a constituent of the nucleo-proteins which, as essential constituents of the cell nuclei, may lay claim to an importance second to that of no members of the protein group. In them also is included the purin grouping, the parent complex of most of the uric acid of the urine. As another example of a protein to which a special atomic group is attached hæmoglobin calls for mention, seeing that, in virtue of the iron-containing hæmatin which it includes, it is able to fulfil the all-important function of carrier of oxygen to the tissues.

The highly complicated protein molecules naturally afford the greatest scope for specific differentiation, but differences of a like type are exhibited by the fats of different animals, and are manifested not only in the results of chemical analysis, but also in such naked-eye appearances as depend upon a lower or higher melting point. The far simpler carbohydrates admit of but slight variations, and the inorganic salts of *none at all.* However, in some species of animals elements which but seldom enter into the composition of organic compounds are embodied in the tissues, as, for example, copper, which is a constituent of the blood pigments of some lowly animal forms, and of the red pigment turacin which colours the feathers of certain birds.

THE METABOLIC ACTIVITIES OF THE LIVING ORGANISM.

The flight of time forbids me to dwell at greater length upon the diversity of the chemical structure of the animal organism, but enough has been said to show how essential is an acquaintance with the leading facts of the statical side of biochemistry, if we are to gain any adequate conception of metabolism, of that bewildering whirl of chemical activities of which the tissues are the seat. In every organ and every cell in the body chemical changes are constantly in progress. Processes of synthesis and of analysis, of oxidation and reduction, of anabolism and katabolism, proceed side by side in the same tissue, and even in the same cell, smoothly and without clashing or mutual disturbance.

The foodstuffs which enter the alimentary canal are dealt with by the digestive juices, are broken down into their simple fractions, and are so prepared for absorption. The products thus yielded are employed in part for the maintenance of the optimum body temperature and for the supply of kinetic energy of muscular movements, both voluntary and involuntary. Another portion is stored for future use, either in the fat depôts, storehouses of potential energy which serve the additional purpose of providing a warm covering for the deeper structures, or as glycogen in the liver and muscles. From the glycogen reservoirs glucose is distributed in a continuous, regulated supply to meet the requirements of the tissues. Some of the protein fractions are built up anew into specific proteins to replace the loss which results from the wear and tear of metabolism, and may be utilised in other ways. The remainder, and probably the greater part, are stripped of their amino-groups and used as fuel.

What has been learnt of the intermediate steps of metabolism has already served to modify profoundly our conceptions of the metabolic processes. We no longer think of the foodstuffs as so much gross fuel cast into a furnace, but of each kind of foodstuff, and indeed of each individual protein fraction, as following its own special metabolic path. Moreover, there are paths for fats and paths for carbohydrates, and it is evident that even dextrose and lævulose are dealt with in different manners, for a patient whose power of burning dextrose is grossly impaired may deal with lævulose with far better success. In the same way the power of katabolising a single protein fraction may be lacking in an individual who is able to dispose of the other protein fractions in a normal manner.

It is believed that these changes are wrought by specialised enzymes, many, if not all, of which are capable of reversed action. We may picture to ourselves the individual protein fraction as handed on from enzyme to enzyme, each responsible for some particular step in the series of changes, until the series is completed and the specific protein has been built up, or the final excretory product has been reached. Thus are produced numbers of intermediate products which are subjected to further changes as soon as they come into existence, and which call to mind a moving staircase rather than a flight of steps. Most of these intermediate products are never met with in an examination of the excreta, or only when the further transformations which they naturally undergo are in some way arrested.

Regarded from the chemical standpoint, each cell in the body is an individual member of a community, although, in all organisms but the simplest, the various cells are differentiated for the performance of special functions, and to that extent have sacrificed their individuality. Each product of glandular activity bears witness to specialised metabolic processes in the cells by which it is produced. So far is the differentiation carried out that, as in a highly civilised community, the destruction of a single part may suffice to bring the life of the community to a standstill. We may ponder over this conception of the elaborate metabolic activities carried on in the living organism until the brain reels, and the imagination is no longer able to cope with their infinite variety.

It is only to be expected that, in the course of evolution, a state will have been brought about in which the end products of metabolism will be harmless to the organism in which they are formed; but so delicately are the relations of tissue change adapted to the requirements of the organism that any deviation from health which disturbs the chemical processes, however slight the disturbance may be, leads to the formation of products which are less well adapted and tend to do harm. Some are so little noxious that their deleterious action is only manifested after the lapse of many years, whereas others, such as the substances of the acetone group, lose no time in working mischief. This harmonious working, side by side, of antagonistic processes will continue for many years, unless it be disturbed by influences from without. But such are the conditions of life upon this planet that the vital processes seldom have the chance of working themselves out to their natural termination in death from sheer old age—their natural ending, because the human machine is not perfect, and gradually deteriorates from the cumulative effects of infinitesimal errors of experiment, until it is brought to a standstill at last.

THE REGULATION OF METABOLISM.

Obviously, it is only by a rigid system of control that the orderly working of the intricate metabolic changes can be maintained, and the working of regulating mechanisms in the animal body is made manifest in a variety of different ways. Only by strict regulation can the breakdown of tissues be kept within bounds; can the uniform composition of the blood be maintained, and the optimum temperature of the body be insured—to quote only a few examples out of many. Yet the regulator mechanisms are not devoid of flexibility, as witness the phenomena of fever, the growth of the body in early life, the developments which constitute puberty, the coming into play and passing into abeyance of specialised functions, and the adaptation of the organism to changes of environment.

In recent years we have gained some insight into the mechanisms by which regulation is effected, and of the importance in this connexion of the internal secretions of glands, ductless and others. We see how disease of a gland which yields such a secretion may disturb the metabolic balance in the direction of excess or defect, and in so doing may influence growth and development. Such studies are profoundly modifying our conceptions of such anomalies as obesity and infantilism, and we are learning that the glands which may be classed together as members of a hormonopoietic system constitute a group of balanced regulators of metabolism, although it may be conceded that, in this connexion, theory tends for the moment to outstrip established fact. However, the internal secretions are implements rather than originators of control. The hormones are themselves but chemical products of certain specialised cells, and the activities of the glands which produce them are themselves under the control of the vegetative nervous system, which transmits to them impulses in response to the chemical demands of the tissues. Thus, in a sense, the regulation of metabolism is automatic.

INBORN ERRORS OF METABOLISM.

The chemical processes in the tissue are not moulded upon uniform lines throughout the animal kingdom, any more than is chemical structure. Evidence of this is afforded by the formation of special protective secretions, of specific bile acids, and of peculiar excretory products, such as the kynurenic acid found in the urine of members of the canine tribe. Moreover, just as certain individuals of a species exhibit conspicuous deviations from the structure of the species, malformations by arrest, or of other kinds, so also individuals are met with who exhibit some striking metabolic anomaly, a chemical freak. These inborn errors of metabolism are individually as rare as structural malformations and much more liable to be overlooked. Their scientific value far exceeds their clinical importance, for they constitute true natural experiments. Those which are known advertise themselves in conspicuous ways and appear to have their bases in failures to carry out some special catabolic process rather than in a deflexion of metabolism into unusual paths. Thus, in cystinuria cystin and sometimes other protein fractions also escape their normal fate and appear unchanged or only slightly changed in the urine. In alkaptonuria, on the other hand, there is a failure to complete the breakdown of the aromatic protein fractions, and the homogentisic acid which is excreted is thought, with good reason, to be an intermediate product of normal metabolism. From the study of alkaptonuria we have learnt nearly all such details as we know of the fate of tyrosin and phenyl-alanin in the body, and have gained an insight into the differential treatment of the protein fractions in general and into the intermediate steps of their catabolism.

I set out to draw a sketch of the normal metabolic processes; the outcome of the attempt is but a crude diagram. Time will not permit of any attempt to fill in details, nor to put before you the evidence upon which the outlines of my description are grounded. I am content if I have succeeded in conveying some notion of the ceaseless chemical turmoil in the living human organism.

PROTECTIVE MECHANISMS AGAINST TOXIC AGENTS.

When into this field of intricate but orderly metabolic activities there intrude the agents of disease, a new set of phenomena is brought into action. The entire community bestirs itself to beat off the intruders, and there are called into play protective mechanisms of immense variety and displays of infinite resource; just as a national community, whose members are at ordinary times engaged in the calmer pursuits of commerce and agriculture, may, on the occurrence of a hostile invasion, assume the attitude of a nation in arms. Such a transformation involves profound disturbance of the ordinary life of the people, and so, too, the invasion of morbific agents produces derangements of metabolism which are the more profound and far-reaching the greater the danger to be faced. We must suppose that in many, and indeed in most, instances the forces of defence gain the upper hand, and the invaders are beaten off. When the first line of defence is overcome disease results, but even then the defences of the second line usually suffice to counter the attack and the patient recovers.

The mechanisms of defence are of various kinds. Some are comparatively simple chemical reactions, as when free acids are neutralised by ammonia diverted from its ordinary path to the formation of urea, or when aromatic poisons are combined up with sulphates and are excreted in harmless forms. But aromatic poisons are also combined with products of protein or carbohydrate metabolism, with the protein fraction glycin to form the harmless hippuric acid and its allies, or with glycuronic acid to form compound glycuronates. Other mechanisms are far less simple, and the very nature of the protective agents is beyond the ken of the chemist. These are the agents known as antitoxins, agglutinins, precipitins, opsonins, and the like. Quite recently the researches of Abderhalden have opened up a new field of such studies by revealing the production of protective ferments capable of destroying protein substances foreign to the organism. It would seem, indeed, that each constituent cell of the body brings into play its enzyme-forming powers to meet an emergency.

It is a question of much interest whether or no the various protective mechanisms have been evolved to meet the assaults of those toxic agencies to which the organism is specially exposed, or whether an entirely new mechanism can be devised at any moment to meet an unforeseen emergency. Evidence may be adduced in support of either hypothesis. The laws of chemistry are so immutable that, given certain conditions, definite reactions may be expected to occur. We are able to predict the formation of compounds which may never have existed previously and to foretell their properties with some degree of accuracy. So we might expect that a given poison launched into a medium in which a number of metabolic products are present will combine with one or other of these. But in the human organism the conditions are far less simple than in the laboratory, and we are driven to suppose that enzyme action is concerned in the production of such compounds as hippuric acid or a compound glycuronate; and we may well imagine that even when the requisite materials are forthcoming combination may fail for lack of the required enzyme. As Hopkins has pointed out, it is unlikely that until Baumann administered brombenzine to a dog that compound had ever found its way into the canine organism. Yet any dog to which that substance is given excretes it in combination with the metabolic product cystein in the form of a so-called mercapturic acid. The mechanism is ready to hand, although we can hardly suppose that special provision is made for the contingency. The simpler mechanism for the neutralisation of acids by ammonia supplies an argument in support of the alternative theory, for this is not developed in herbivorous animals, which, from the nature of their diet, are far less exposed than the carnivora to poisoning by acids.

METABOLIC DISTURBANCES DUE TO DISEASE OF ORGANS.

There are many other ways in which derangements of metabolism are brought about by disease apart from the calling into play of protective mechanisms. When an important organ becomes the seat of structural changes its functions become disturbed and their normal orderly working is put out of gear, either permanently or only for a time. Thus if the lungs are rendered inefficient the respiratory interchange is interfered with, and deficient supply of oxygen to the tissues and imperfect removal of carbon dioxide bring in their train obvious and well-recognised results. Diseases of the heart muscle produce similar effects by impairing the circulation in the lungs and elsewhere. When the liver is attacked, either primarily or as the result of circulatory disturbances, the assault falls upon an organ which is the seat of more multifarious chemical activities than any other in the body. When the bile-ducts are blocked the absence of bile from the intestine grossly impairs the absorption of fats, and the constituents of the retained bile fluid find their way into the circulation and are deposited in the tissues. When the parenchyma suffers many metabolic processes which are carried out in the liver are disturbed, yet the effects of these disturbances are less conspicuous than might be expected.

The effects of disease of the pancreas are less obvious, but the absence of pancreatic juice from the intestine causes profound derangement of the digestion of proteins and fats, and the effects of the failure of its internal secretion upon carbohydrate metabolism are familiar to all. Diseases of the alimentary tract cause impairment of the intake of nutritive materials, and changes wrought by the bacteria which inhabit the intestines upon the intestinal contents may result in the formation of poisonous products which undergo absorption, to the great detriment of the organism. When the kidneys are the seats of disease, the elimination of waste products—the hygiene of the tissues—is impaired, to a greater or less extent, and these products accumulate in the organism where they induce a chain of morbid effects which culminate in the stormy symptoms of uræmia.

It is because disease of glands of internal secretion produces such profound disturbance in the chemical field that we have learnt to recognise the important part which they play as regulators of metabolism. We see how functional inactivity of the thyroid gland renders sluggish the metabolic processes as a whole, whereas its over-activity—if that be the correct interpretation of the phenomena of exophthalmic goitre—causes the metabolic fires to burn too brightly. We see also how a too active pituitary gland stimulates the organism to abnormal growth, whereas loss of its functional activity brings in its train obesity and recessive infantilism. Phenomena of a like order result from diseases of the adrenal and pineal glands, and we are only beginning to learn how great a part variations in the secretion of adrenalin by the chromaffin tissues may play in connexion with a number of maladies in which the adrenals themselves are not primarily implicated. Indeed, it may be said that all diseases, whether they affect the organism as a whole or whether their brunt be borne by single organs, bring about greater or less disturbance of metabolism. The field of chemical pathology is practically coextensive with the field of medicine.

In the case of many maladies, even of the more acute and graver ones, the chemical disturbances which they bring in their train are far less conspicuous than the structural changes. In others, again, the metabolic disorders occupy the forefront of the clinical picture, as is the case in those maladies which we are accustomed to group together under the collective name of "diabetes." In not a few cases of diabetes grave, and even fatal, metabolic disturbances are attended by no structural lesions which we can detect. It is natural that the attention of chemical workers in medicine has always been directed to such "diseases of metabolism," and the problems which they present are still very far from solution.

DEFICIENCY DISEASES.

Hitherto we have been considering what may be described as *positive* diseases, which result from attacks upon the organism by morbific agents introduced from without; but there remains to be considered a group of maladies which may be classed as *negative*, seeing that they have their origin in the withholding of some portion of the supplies which the organism derives from external sources, and upon which its wellbeing depends. The extreme example of such a disease is starvation—a condition in which the body, being deprived of its food supplies, lives for a time upon its own fats and carbohydrates, and ultimately upon the proteins of its tissues. Minor degrees of the same condition are induced by restriction of the intake below an adequate calorie value, of proteins below the amount compatible with maintenance of nitrogen balance or by complete deprivation of carbohydrate foods.

The cutting off of carbohydrates, or failure to assimilate them, is promptly responded to by disturbance of fat and protein metabolism, with the result that the substances of the acetone group, aceto-acetic and β-oxybutyric acids are formed and excreted in large quantities. This condition of acetonæmia, which plays so important a part in diabetes, and is met with in children suffering from many diseases, affords the most conspicuous example known of the formation of actively harmful products as a result of the throwing out of gear of the normal metabolic processes. There is much that is still obscure in the pathology of acetonæmia, and it is probable that future researches will profoundly modify the current views in acidosis. This much is certain—that many facts of clinical observation can with difficulty be reconciled with the prevalent theories.

Of equal interest are certain maladies which result from dietetic shortcomings of far less obvious kinds—defects which cannot be estimated in terms of calorie value or nitrogen balance. It is becoming evident that a normal dietary must contain constituents of which we have hitherto taken no reckoning, just as the air which we breathe contains gases of the existence of which we had no inkling until recent years. The new study of vitamines and of the effects of a diet consisting of pure proteins, fats, and carbohydrates upon the growth of young animals is beginning to throw light upon the nature of such factors—exogenous hormones, if I may so style them. That scurvy results from errors of diet has long been known, but the dietetic factor in the causation of beri-beri is of far more recent recognition.

It is not surprising that such diseases of defect, when once recognised as such, are far more readily amenable to treatment than any others. The missing factor supplies the specific remedy. Starvation is readily cured by food and scurvy by a diet of fresh meat and vegetables, just as myxœdema yields to treatment by thyroid extract, but in all such cases continuous administration of the missing factor is essential for the continuance of well-being.

INFLUENCE OF CHEMICAL KNOWLEDGE ON THE PRACTICE OF MEDICINE.

Thus we see how delicate a matter is the maintenance of the integrity of the metabolic processes in the human body, and how slight disturbing influences may lead to their derangement. Any failure of adaptation to environment, any attack from without, any failure of supply of foodstuffs, water, or oxygen, produces effects which are not merely local, but which awaken chemical echoes throughout the entire organism.

To us who are engaged in the practice of medicine, the knowledge which has been gained of the chemical structure of the human body, and of the dynamic chemistry of its tissues, has no mere academic interest. It cannot fail to influence profoundly our conceptions of disease, and no less profoundly our therapeutic measures. At the outset the feeling induced by such studies is one of awe. We are impressed by the infinite complexity of the mechanism with which it is our business to interfere, as would be a man ignorant of horology who undertook to repair a watch. No less profound is the feeling of admiration aroused by the contemplation of Nature's methods for the combating of disease. We appreciate the force of Paracelsus's rebuke to his professional brethren: "Nature is the physician, not thou. Thou must learn of her, not of thyself." We realise how inefficient are our therapeutic efforts as compared with the powers of protection with which our patients are themselves endowed. Yet the physician has the satisfaction of knowing that he can often render valuable aid, and that by his care many a life is saved. In some maladies, due to animal parasites, he can even attain to the final aim of therapeutics—namely, to destroy the agents of disease without damage to the tissues of their host. But Nature has means by which to parry each stroke in detail, can produce antidotes to specific toxins or substances lethal to specific bacteria, and can sometimes protect the patient from a repetition of a particular infection for the remainder of his life.

CHEMISTRY IN DIAGNOSIS.

It is in the field of diagnosis that the practical utility of chemical knowledge is most obvious. The derangements of metabolism caused by disease are reflected in the excreta. In these, and especially in the urine, are found abnormal ingredients indicative of the nature of the disturbance at work. Some are substances which are present in normal urine, but in traces so small as to escape detection by the simpler methods of analysis; others are intermediate products of metabolism which have escaped destruction, and are excreted as such or in slightly altered forms, or in combination with toxic substances, which they render innocuous. In the urine, too, we find evidences of undue waste of tissues, or of failure to eliminate waste products. Methods of ever greater delicacy and precision are being applied to urinary analysis. Quantitative estimations supplement qualitative findings, and many of the modern methods can only be carried out in a well-equipped laboratory.

By examination of the urine we learn much concerning the condition of the kidneys and urinary tract, and by the application of functional tests we may get to know something of the incidence of disease upon different parts of the renal apparatus. Indications are afforded of the activities of intestinal bacteria and of the absorption of toxic substances from the alimentary canal. We can trace the development of acetonæmia in the maladies in which it occurs, and can obtain evidence of disease of the liver, pancreas, and other glands, and even of the bone marrow, in certain cases. Analysis of the gastric contents is giving us a new insight into diseases of the stomach, and the chemical examination of the fæces affords indications of hardly less diagnostic value, amongst others, of the presence of occult blood, and of derangements of the splitting and absorption of fats.

But perhaps the greatest recent advance in diagnosis by chemical means is the perfecting of methods which enable accurate and reliable estimations to be carried out, of such substances as glucose and uric acid, in small quantities of blood drawn from a vein, and even in a few drops of blood from a prick in the finger. Now that it has become possible to estimate the glucose content of the blood from day to day a new chapter in the study of diabetes is being opened. Again, the diagnostic methods of Abderhalden, which reveal the workings of protective ferments, afford means of diagnosis of a subtlety hitherto not dreamed of, and give promise of widely extended utility in the near future. However, these methods are complicated in technique, and reliable results can only be got by those who have had experience of their working.

Although there are few diseases in which, as in diabetes, chemical findings supply the diagnosis, shape the prognosis, and guide our treatment from day to day, it may be asserted with confidence that there is no branch of medical practice in which a knowledge of chemistry and of its methods is not of service to the practitioner of medicine.

DIETETICS.

To turn to the field of therapeutics, there is no branch of treatment in which chemistry should help us more than in dietetics, but there is none in which we rely less upon the guidance of science, and in which the influence of tradition is so powerful. In so far as tradition embodies the accumulated experience of mankind, and of generations of sufferers from particular maladies, it is entitled to our fullest respect, and is sometimes our safest guide. But too often it rests upon the dicta of some teacher of the past, which have been repeated so frequently that they assume an authority to which they have no real claim. I am far from maintaining that our dietetic prescriptions must always have a scientific basis, for our knowledge does not suffice to render this possible. Indeed, in matters of treatment there is danger in setting up too rigid a standard. A prescription which aims at the attaining of some particular object, although based upon scientific reasoning, may fail because we are not able to take into account all the conditions of the experiment. Not a few therapeutic measures have been introduced in deference to scientific reasoning which has since been shown to be unsound, and some of these, such is the irony of things, have nevertheless proved of real value.

There are scientific grounds for the belief that mankind habitually takes more protein food than is required for the due nutrition of the tissues, and undoubtedly the amount taken habitually exceeds that required for the maintenance of nitrogen balance. When, however, it is realised that the lower animals and savage races have adopted a standard of diet quite apart from medical advice, and presumably in accord with their needs, it seems more probable that our reasoning fails to take into account some unknown factors than that the instinct of whole races is at fault. But when we find bodies of men living under conditions which are in no sense natural, men leading sedentary city lives, but who habitually consume quantities of protein food suited to the strenuous existence of members of nomad races who seek their meat from day to day, we are certainly called upon to interfere, and can do so with confidence in the strength derived from the teachings of experience and the knowledge which physiology supplies.

As regards details of dietary, I would venture to assert that two-thirds of the restrictions imposed upon sufferers from particular maladies find no real justification in the teachings of science or of experience. How contradictory are the directions given by different advisers to gouty patients as to details of dietary, and how few of them can be justified by argument when called into question!

Certain general principles are clearly defined. We should aim at a diet of adequate calorie value, with due representation of the main classes of foodstuffs. The food should be so prepared as to be easily assimilable, and with due regard to the condition of the patient's alimentary canal. Some at least of it should be in a fresh state, and special restrictions are often desirable in view of defects of excretion, to rest damaged mechanisms, or to limit accumulation in the blood of metabolic products which fail to be dealt with in the normal ways. Yet it should be realised that, in prescribing a restricted diet, we incur serious responsibility. A diet from which one of the chief food factors is missing can hardly be maintained with impunity over long periods. Thus, although there can be no doubt that restriction of carbohydrates is of great value in the treatment of diabetes, a restricted dietary, if imposed by rule of thumb, and unless carefully watched, may do far more harm than good. In any case of diabetes a careful study of the response of the patient to carbohydrate restriction is desirable; a strict diet should only be reached by degrees, and throughout the course of the case the medical attendant needs to keep his hand on the tiller, ready to turn now in the direction of increased strictness, now to relax.

THERAPEUTICS, EMPIRIC AND SCIENTIFIC.

So, too, as regards treatment by drugs. Throughout the centuries drugs have been employed in the treatment of disease, and we almost forget that the control of disease by such means was a discovery and not part of instinctive knowledge. Remedies introduced on empirical grounds, or in deference to superstition or fantastic hypothesis, have nevertheless proved valuable weapons in the hands of many generations of medical men. In default of knowledge of anatomy and physiology therapeutics could not be other than empirical; but step by step, as we learn more of the ways in which drugs act, and of the morbid processes which we seek to influence by their means, a scientific system of therapeutics is being built up. We are learning of Nature, as Paracelsus bade us do. When we administer a serum or a vaccine, or such a drug, as thyroid extract, we are copying Nature's methods and employing her own weapons; and even when the results do not come up to our hopes, we have the satisfaction of knowing that we are working upon sound lines, and may expect that, as technique improves, many difficulties will disappear.

When, on the other hand, the drugs which we employ are toxic substances, foreign to the organism, we need to realise that in giving them we often produce not only the effect aimed at, but by-effects which we cannot fully estimate. Pharmacology is teaching us how such drugs act, the limitations of their utility, the nature of their active principles, and how they may best be employed. In this way the discoveries of empirical therapeutics are being placed upon a scientific footing, and the blunderbuss prescription is giving place to the employment of single drugs of known efficiency.

Not only are the weapons improved but the progress of knowledge is making our aim more sure. We have learnt that, although it often is necessary to treat special symptoms, all morbid symptoms do not call for treatment, since many of them are manifestations of protective mechanisms; and even pain leads to the saving of many lives. But in guarding against a particular danger Nature sometimes imperils the organism as a whole. Thus increased blood pressure is doubtless advantageous to many who possess it, but when it reaches such a degree as to endanger the integrity of the arteries, or to cause symptoms distressing to the patient, we feel justified in attempting to lower it.

CONCLUDING REMARKS.

Nor must mention be omitted of the triumphs of preventive medicine, which bear eloquent witness to what science can accomplish in the medical field: triumphs exemplified by the guarding of communities from epidemic diseases, and the ridding of huge tracts in tropical lands of insect-borne maladies. Modern hygiene is a vast protective mechanism which aims at doing for the community what Nature does for the individual.

It is clear that we shall err greatly if, to quote the words of Kipling, "We are afflicted by what we can prove, we are distracted by what we know"; and if we allow our sense of the boundless complexity of the human organism to engender undue timidity in interference. That in proportion as we know more we can better diagnose disease, and can the more prudently and efficiently help our patients, daily experience teaches us. The immense progress of surgery in recent years, which has resulted from the strictly scientific work of Pasteur and Lister, impresses profession and laity alike, but the advances of medicine can challenge comparison even with those of surgery. Modern diagnostic methods enable us to recognise diseases of which our fathers never dreamed, and to detect the more familiar maladies in those early stages in which they are most amenable to control. So long as they are used in conjunction with the older clinical methods, and not merely as short cuts to diagnosis, they prove unqualified boons. Nor can it be questioned that the range of efficient treatment is being extended widely.

But let us not forget how much we owe to the work done by our fathers with the less efficient methods at their disposal. We begin where they left off; the harvest which we are reaping they sowed; thanks to their advances we are able to advance yet further. If they knew less than we do, they had one great advantage over us, in that they had more time for thought.

That the progress of medicine has been more rapid in recent years than ever before is due to the cumulative advance of science as a whole. Modern physics and chemistry, and the borderland science of physical chemistry, have rendered possible modern physiology and pathology, and upon the foundations thus provided is being raised the stately edifice of a modern medicine, in which the scientific spirit shall have freer play than heretofore. Just as the spirit which animated those who worked and those who taught in the humbler buildings of the ancient Marischal College finds in these noble halls more ample opportunity and wider scope.

Address in Surgery

ON

THE SURGEON OF THE FUTURE.

Delivered at the Eighty-second Annual Meeting of the British Medical Association

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MR. PRESIDENT, LADIES, AND GENTLEMEN,—The perusal of addresses in surgery delivered at annual meetings of the Association during the last ten years leaves an impression on the mind that some of the surgeons who delivered them resembled proud conquerors on a battlefield, vain of their victories, brandishing their swords, and sighing for more foes to vanquish. Accounts of battles contain sickening lists of the killed and wounded and longer lists of those who die from infectious diseases in camps; records of surgical procedures always contain a mortality bill even for the most trifling operation.

The art of surgery is probably as ancient as the art of war, and is practised by warlike savages who have never been influenced by civilisation. The antagonistic callings of the soldier and the surgeon have been markedly modified by the progress of science. It is believed by many that the ingenuity exercised in the invention of methods for destroying life will make war impossible, and the discovery of the causes of diseases and the perfection of preventive medicine will render physicians and surgeons unnecessary. The belief in each instance is futile. Soldiers and surgeons will be required as long as civilisation endures; but their methods have undergone great changes and greater are impending. Gunpowder revolutionised warfare; the discovery of anæsthetics and the invention of the microscope completely changed surgical methods.

SURGERY AND THE DISCOVERY OF ANÆSTHETICS.

The enormous impetus which the discovery of anæsthetics gave to surgery threatened to extinguish it as an art, for post-operative suppuration and pyæmia became endemic plagues in all populous cities where the surgeon plied his craft. It was on this unfavourable flood that some of the most notable ventures of modern surgery were launched, but their progress was slow. Traditions and methods die hard! A famous surgeon told me that when he began to perform operations under chloroform an old pupil of Guy's Hospital came in to see a leg amputated under the new conditions. When the surgeon pointed out the merciful nature of anæsthetic sleep and the change it had wrought in the methods of removing limbs, the old fellow sighed, and said he had a fancy for the old ways, and liked to see some blood and sawdust about! Sir William Fergusson delivered some lectures on the progress of anatomy and surgery at the Royal College of Surgeons of England in 1855 and described operations performed at that date in London, in this rough and ready style. You will acquit me of exaggeration when I state that the arena of an operating theatre in the first half of the nineteenth century smacked of the bull-ring, and the board in the old operating theatre, that bore a notice regarding the reservation of the arena for the surgeons and the first two rows of stalls for privileged spectators, recalls the notices *Sol* and *Sombra* in the Plaza de Toros.

In the early stage of a great discovery few men perceive its significance. When anæsthesia began to make progress, although surgeons recognised its importance, many years elapsed before it was fully utilised. Chloroform had been in constant use for operations before its usefulness in the reduction of dislocations was recognised. Operating theatres had iron bars and racks fixed to the walls and ring-bolts let into the floor for the attachment of cords and pulleys employed in the forcible reduction of dislocated shoulders and hips. In the Middlesex Hospital the dislocation fixtures and tackling were abolished with the old operating theatre in 1895. To-day a dislocated hip is reduced with the help of chloroform without pulleys, almost in the twinkling of an eye. When done expertly it resembles a conjuring trick. Let me briefly describe an actual case to show what harm sometimes followed the use of pulleys in reducing a dislocated hip. In 1889 the chief officer of a ship had his hip dislocated by a derrick-boom falling upon him during a voyage in the Atlantic Ocean. The captain attempted to reduce it. As a preliminary the patient drank half a bottle of brandy and 50 drops of laudanum. Being drunk he was fastened by a perineal band to a ring-bolt on the deck and ten seamen under the superintendence of the captain hauled steadily on the leg. Their efforts were unavailing. Four days later the ship touched the Canary Isles and the officer was sent ashore; the head of the thigh bone was promptly reduced by a surgeon under chloroform. On recovering the patient was unable to walk without pain. When the limb was extended he felt a pricking pain down the back of the thigh to the knee, then it divided and "one stream of painful sensations" ran down the back of the leg and the other along the front of the leg to the toes, and the sailor found it hard to kick against the pricks. I saw him in London and came to the opinion that the efforts of his shipmates had broken the rim of the acetabulum and a spicule of bone interfered with the great sciatic nerve. By means of an incision in the buttock the nerve was exposed as it issues from the great sciatic foramen. I found a hook-shaped piece of bone on the rim of the acetabulum in such a position that its sharp end pricked the nerve when the limb was extended. This piece of bone was removed. The officer recovered and reported himself in good health 20 years afterwards.

The utility of chloroform in the diagnosis of hysterical contractures, phantom tumours and spurious pregnancy was its last merit to be appreciated. The surgery of the viscera is one of the remarkable extensions that followed the introduction of anæsthetics. Abdominal organs such as the spleen and omentum were removed when extruded through accidental rents made by knives, spears, swords, scythes, sickles, cart wheels, or similar forms of violence, and extruded intestines were returned with success centuries before the discovery of ether and chloroform. Cæsarean section was successfully performed in Roman times, and, many a child, to use Shakespeare's phrase, "was from his mother's womb untimely ripp'd." This form of delivery has been effected by midwives and butchers; by a patient on herself, and by the horn of a mad bull; in some instances mother and child survived. The success that followed this inartistic mode of delivery is instructive; 40 years ago Cæsarean section had an astounding mortality when performed by surgeons, whilst the spayer and gelder carried out his calling with almost invariable success. Lister unravelled the riddle. To-day wounds made and closed in the course of a surgical operation unite with a certainty that ceases to attract attention. Surgeons rarely pause to think on what would happen if surgical wounds failed to heal. In the pioneer days of abdominal surgery the incisions often failed to unite and such patients frequently died. I shall later on place facts before you to show that failure of intestinal wounds to unite is one cause of the high mortality following operations for cancer of the colon. Union of healthy intestine takes place quickly and perfectly.

NEW DISEASES AND THE PLAGUES OF EGYPT.

We marvel to-day at the frequency of the disease called appendicitis that became endemic in great centres of civilization in the last quarter of the nineteenth century. This disease occurred sporadically, and had been known as perityphlitis and iliac abscess for many years, but the cause of the present epidemic has not been discovered by pathologists or bacteriologists. A study of the history of diseases shows that they wax and wane. In the fourteenth century lepers were common, and leper houses were as numerous in Europe and the British Isles as lunatic asylums to-day. Leprosy lingered longest in Scotland. I thought it probable, reflecting on the prevalence of leprosy in Iceland and Norway, that there may be some lepers in the northern islands of Scotland. I have been assured on reliable authority that there is no leprosy in the Orkneys. Whilst pondering on the absence of this disease in Britain, doubts arose in my mind on reading in Lord Strathcona's will[1] a bequest of £5000 to the Right Hon. John Burns for a home for 50 lepers in the United Kingdom, none of the sum to be expended upon lepers coming into the kingdom.

In Europe, generally, leprosy diminished greatly without any recognised cause in the fifteenth century, but its decline was coincident with a great increase in syphilis. One disease tramples out another. In the vegetable world grass, and what we call weeds and the Bible tares, choke the nobler plants. When from accidental causes weeds are held in check, the suppressed plants revive and flourish again. It was a great discovery to detect the part played by insects as unconscious pimps in the fertilisation of flowers. No one can doubt that the disappearance of many species of flowering plants and variations in the abundance or the scarcity of particular species of flowering plants depend not merely on favouring conditions of weather, but on the abundance or scarcity of the insects that act as vectors of the precious pollen from the flowers of one plant to the flowers of another of the same species. Diseases supply parallels. To-day we are staggered by the important observations that many infections are conveyed from man to man, man to beast, and from beast to man by insect agency. Flies act as vectors of the parasites of sleeping sickness, gnats spread filaria, malaria, and yellow fever; fleas infect man with plague; and bugs can convey the leprosy bacillus.

The famous plagues of Egypt, fraught with such important consequences to the Israelites, were intensified by flies. When the narrative is considered in the light of modern knowledge it is a fair inference that the dust storm which fouled the Nile water and rendered it undrinkable killed the fishes and caused the frogs to take refuge on the land. The dead fishes and frogs provided breeding places for flies, and they hatched out in myriads.

During the last decade the fly has come to be regarded as a conveyor of disease, and the indictment is very strong. The biting fly conveys parasites in its proboscis, and the common non-biting fly carries on its body, legs, and wings the infective agents of typhoid fever, tuberculosis, ophthalmia, and perhaps small-pox. The sequence of the Mosaic visitations is significant; the plague of flies was followed by a murrain among beasts and boils and blains on the Egyptians. The death of the children was the last plague, and it is the last to be explained by modern science. Dr. E. H. Ross was medical officer in Cairo in 1909. He tells us the spring of that year was ushered in by a heat wave on May 1st, and the temperature rose to 102° F. in the shade. Fourteen days later the greatest plague of flies ever remembered appeared in the city. Food, milk, and fruit were contaminated by them. In two months 3000 children under 5 years succumbed to enteritis—a disease due to infection. It is not an unreasonable assumption that the death of the Egyptian children, which induced Pharaoh to let the Children of Israel go, was due to an epidemic of infantile enteritis spread by an enormous swarm of "divers sorts of flies."

One of the greatest plagues which troubled surgeons and destroyed millions of lives is known as suppuration or pyosis; it was spread widely by surgeons. When Pasteur discovered the cause of fermentation and Lister gave this discovery a practical application in the daily work of the surgeon, it was not suspected for many years that the most dangerous items in a surgical operation were the infected instruments and fingers of the surgeon. The importance of this observation cannot be over-estimated; surgeons admit its truth by wearing sterilised rubber gloves when performing operations.

THE MICROSCOPE IN SURGERY.

It is usual to ascribe the remarkable progress of surgery to the discovery of anæsthesia and the perfection of methods designed to prevent wound infection, but we must not forget the most important was the invention of the microscope; without its assistance the minute bodies which effect such great changes in organic and inorganic nature, and cause so many varieties of infective disease in animals and plants, would have remained not only hidden but unsuspected. This important instrument of research, perfected by earnest workers mocked at as "brass and glass men," is now indispensable in clinical research. Every improvement in the construction of the microscope has led to an increase in knowledge of the cause of disease. It has also become a means of popular instruction and amusement. Even embryologic processes are displayed to interested pleasure seekers on kinematographic films in "picture palaces," and school children are instructed in physiology, including the microscopic features of the blood. The numerical estimation of blood corpuscles is a regular exercise for the clinical clerk, and corpuscles are scrutinised in the laboratory by experts with microscopes as diligently as physicists examine the solar disc with telescopes for sunspots. Specks in the white and in the red corpuscles, barely visible to the highest powers of the microscope, may have more influence for evil on the health of a community than a sunspot big enough to be visible to the naked-eye exercises on the weather.

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[1] The Times, May 28th, 1914.

Derangements of the functions of blood-forming organs, especially the red marrow, and the significance of an excessive production of leucocytes have come to be so thoroughly appreciated by surgeons that under certain conditions an excessive proportion of white corpuscles in the blood is a more emphatic bar to a surgical operation than sugar in the urine. It is in this direction that the increase of pathological knowledge, especially the form of it called clinical pathology, will influence operative surgery in the future. The light microscopic studies of the blood throw on leukæmia acts as a danger signal to the surgeon when contemplating the removal of an enlarged spleen. The extirpation of a leukæmic spleen is always followed by death, and this experience is crystallised in practice, for an abdominal tumour resembling a spleen always suggests a blood count.

THE INFLUENCE OF CHEMIOTHERAPY ON THE SURGERY OF THE CENTRAL NERVOUS SYSTEM.

Disease was formerly regarded as something that entered the body, and the idea of evil spirits or devils entering men and women led, even before the dawn of Christianity, to surgical practice consistent with such belief, for there is evidence that the skulls of epileptics were trephined to afford incarcerated evil spirits a chance of escape. Fifty years ago our knowledge regarding the physical condition of the brain and spinal cord was of an elementary kind. It was the custom to teach that the cerebro-spinal fluid served as a waterbed for the brain in order to preserve it from harmful concussions. In my student days this teleological explanation tickled my fancy, and I suggested to the lecturer on anatomy when he waxed enthusiastic, after the style of Hilton, on this wise precaution of nature, that the explanation was absurd, for the relative bulk of brain and cerebro-spinal fluid resembled an ironclad in a duck pond. Now cerebro-spinal fluid is used as a medium for inducing temporary paraplegic analgesia—a method of conscious anæsthesia of great advantage to the surgeon when he is called upon to operate in conditions where a general anæsthetic would be attended with unusual risks. The diagnostic importance of cerebro-spinal fluid obtained by lumbar puncture is not only great, but its utility is increasing. Examination of samples of the cerebro-spinal fluid obtained by tapping the spinal theca is a routine in diagnosis.

Flexner's demonstrations, that the olfactory nerves are routes by which the microbes of influenza and cerebro-spinal fever infect the central nervous system, add a new interest to the physiology of those remarkable secretory organs in the brain called "choroid plexuses." In discussing influenzal meningitis he tells us that the fluid secreted by the choroid plexuses in infected monkeys contains an antiserum which escapes by the meningeal veins, and it may become possible to arrest the development of bacilli in the blood by means of compounds injected into the cerebro-spinal fluid. Here is a method of specific therapy unsuspected in our wildest dreams: Science transforming the cerebro-spinal fluid into a pool of Bethesda! Enterprising surgeons are now devising methods by which they can "trouble" the pool to the best advantage. No one can doubt that bacteriologists are in their methods as ingenious as surgeons. Crowe and Cushing ascertained that urotropin (hexamethylenamin) given by the mouth is excreted into the cerebro-spinal fluid and inhibits the growth of pyogenic bacteria. Surgeons turn this observation into practical account; it is now the custom to administer urotropin internally two or three days before an operation on the brain or spinal cord, and continuing it for a few days afterwards. Post-operative meningitis occurs occasionally in spite of it!

Orr and Rows have found that micro-organisms use neural lymphatics as routes for infecting the cord. Thus a bedsore or any septic area of the skin can lead to an infection of the spinal cord at a spot corresponding to the roots of origin of the implicated nerves. This will intensify the interest of surgeons in neuritis complicating septic lesions. The brilliant demonstrations that spirochætes use the lymphatics of nerves as avenues for invading the spinal cord will modify the treatment of syphilitic diseases of the cord. Intrathecal injections of salvarsan, in common with all arsenical compounds, irritate the spinal cord. To overcome this difficulty salvarsanised serum obtained from the patient is injected into his cerebro-spinal fluid and tolerated. This is a good example of practical ingenuity.

The results of surgical enterprise on cerebral tumours are unsatisfactory; the mortality is great and the condition of the survivors in many instances sad. The indefiniteness of gliomatous formations makes them extremely unfavourable for operation, to say nothing of the difficulty in localising cerebral tumours in non-motor areas. It is probable that compounds will be discovered that can be injected into the cerebro-spinal fluid and cause gliomas to shrivel in the same way that gummas disappear under potassium iodide, mercury, or salvarsan, and thus abolish some of the most uncompromising operations of modern surgery.

SURGICAL GAMBLING WITH MALIGNANT DISEASE.

Investigations of the minute structure of morbid growths have been mainly useful in separating the so-called benign tumours from those which inevitably destroy life. Thirty years ago the two groups were regarded as distinct. It is true that type forms can be distinguished as innocent or malignant, but each genus of the so-called innocent group, with the exception of lipomas, contains species in which the histolgoical features of innocency shade away into those indicating malignancy. This is a matter of great importance when a declaration of malignancy entails the sacrifice of an organ or a limb. The horror patients entertain of malignant disease and the stigma they think it imprints on the family reputation lead to willing submission when the surgeon offers operative treatment. It is an impression deeply ingrained in the profession that the presence of malignant disease justifies an operation, however extensive or dangerous, for its relief. Let us satisfy ourselves that surgical gambling with malignant disease is justified. There are two organs in the body often the seat of cancer and often attacked by surgeons—the uterus and colon—in connexion with which this question may be fairly considered.

The results of removal of the uterus for cancer in its neck are by no means uniform even when the conditions are apparently similar. The microscopic features of cancerous growths do not help in explaining variations in the clinical course of the disease. There are intrinsic and extrinsic factors concerned in estimating the malignancy of uterine cancer which have only recently been appreciated. Our predecessors in the art of surgery recognised a remarkable alteration in the appearance of patients the subjects of advanced malignant disease, which they expressed by the phrase "cancerous cachexia." This "bad habit" of body has no special relation to cancer; it is due to the entrance into the circulating blood of toxic substances secreted by the bacteria and cocci which colonise cancerous growths in exposed situations. The relation of bacteria to cancer is a matter of first-rate importance to the surgeon, and influences his work very markedly. I find, as a rule, that non-ulcerating cancers of the breast are sterile. Cancer of the tongue usually swarms with streptococci, and the neck of the uterus when cancerous is colonised by staphylococci or streptococci, and the coli group. This led me to make bacteriological investigations of the necks of cancerous uteri before undertaking their removal; I quickly found that the fate of a patient submitted to operation for this disease depends not so much on the skill of the surgeon as on the nature of the infecting micro-organism. Many patients submitted to hysterectomy for cancer of the neck of the uterus die within a few days of the operation from septic peritonitis, pulmonary embolism, or acute bacteriæmia if the cancerous tissues are colonised by streptococci.

In the general hospitals of London during the year 1912 the mortality of radical hysterectomy for cancer of the neck of the uterus varied from 10 to 48 per cent. This forms a striking contrast to hysterectomy for fibroids of the uterus, for the mortality of this operation in the general hospitals of London is about 2 per cent., the difference being almost entirely due to the presence of bacteria and cocci in the cancerous tissues. It cannot be too emphatically stated that the virulence of cancer, as a rule, depends on its septicity, and cancers in exposed situations are rapidly destroyed by bacteria.

SEPSIS IN RELATION TO CANCER OF THE LARGE INTESTINE.

The relationship of sepsis and cancer is an important matter for the surgeon. During the last ten years there has been great activity in developing radical measures for the treatment of cancer of the large intestine. The results are not gratifying. Resections of the cæcum, or portions of the colon, are attended with a high rate of mortality, and of those who survive operation early recurrence or dissemination is the rule. Surgeons know this, and in order to improve the results of operative treatment painstaking investigations have been made on the distribution of the blood- and lymph-vessels of the colon. In spite of much admirable work and surgical enterprise, cancer of the large intestine is as opprobrious to the surgeon as hysterectomy for cancer of the neck of the uterus to the gynæcologist, and for the same reason—sepsis. The mortality of radical operations for cancer of the cæcum and colon in London during 1912 was 30 per cent. In the London Hospital during the years 1901–11 resection of cancerous portions of the large bowel was performed on 95 patients; 49 recovered and 46 died. (Sir Frederic Eve.) In these days of boastful surgery this may be called a superlative death-rate.

The radical method of dealing with cancer of the colon consists in free resection of the cancerous portion in favourable cases; this requires a complicated operation for the reunion of the bowel, entailing a sutural junction that must be not only watertight but gastight. One of the first requisites for immediate union is the absence of pyogenic bacteria. In operations for intestinal anastomosis success depends on early and firm union of the apposed surfaces of the bowel. There is nothing more amazing in relation to the healing of wounds than the rapidity with which peritoneal surfaces join when they are carefully sewn together with sterile sutures. In regions of the gastro-intestinal tract free from pyogenic bacteria union occurs after surgical operations safely and quickly; thus a gastro-jejunostomy in the hands of competent surgeons is devoid of risk from septic peritonitis. How different the picture for radical operations performed for cancer of the colon! Septic peritonitis destroys the lives of at least 30 per cent. of those who submit to it. Death is due to septic peritonitis from infection during operation, leakage at the junctions, or failure of union due to the colon bacillus and its congeners.

Cancer of the colon is an extremely insidious disease; in the early stages it is symptomless until it becomes septic or obstructs the flow of fæces, then the patient complains of pain. When cancer becomes septic it sloughs and bleeds. Infected cancer impairs the patient's health because the toxins brewed by the schizomycetes colonising it enter the circulation. Colic cancer sometimes leads to abscess when it is infected by the coli group The frequency with which visceral cancer mimics inflammatory conditions and misleads physicians and surgeons alike is due to sepsis. The appreciation of the causes of failure in the surgical treatment of colic cancer should exercise some influence for good. Statistics indicate that the risks of operations performed for cancer of the colon are as great as for the operations of general surgery in pre-Listerian days, with this difference—the mortality of that period was due to sepsis from infection of the wound that often arose from the use of dirty sponges, instruments, sutures, and the septic fingers of the surgeon and assistants. In operations on cancerous viscera the diseased tissues are already infected, and taint the fingers and instruments of the surgeon, hence the danger of such operations.

SURGICAL COQUETRY.

It is by no means uncommon to see surgeons clad in sterilised overalls, gloves, caps, masks, and top-boots, resecting a cancerous segment of colon swarming with pyogenic micro-organisms. This can only be described as surgical coquetry. Some of our methods for destroying bacteria in the course of an operation are almost as clumsy as attempts to kill fleas with bludgeons.

In order to improve the results of operations for visceral cancer means must be devised for sterilising them, or a specific remedy found for cancer. There are indications that both methods will be available. Cancerous organs are sometimes submitted to the action of radium as a preliminary to operation, and histological examinations of malignant tumours affected by radium emanations show that the gamma rays find distinctions in tissue cells imperceptible to the microscope. We need a compound which can be introduced into the circulation to destroy streptococci and its kind. This is no idle dream. Huxley suggested that it would become possible in view of the discoveries in therapeutics "to introduce into the economy a molecular mechanism which like a very cunningly contrived torpedo shall find its way to some particular group of living elements, and cause an explosion among them, leaving the rest untouched." This sounded fantastical in 1881, but Ehrlich has discovered "molecular mechanisms" more subtle. There are drugs (organotropic) which injuriously affect the organs of the body and fasten on them like aniline staining reagents cling to special tissues. He speaks of compounds that injure the intestinal tract of mice, and they die from profuse diarrhœa. Sometimes the red blood corpuscles are attacked, and the animal dies from severe anæmia. Curious drug affinities occur in the central nervous system; in mice the vestibular nerve is attacked, and they gyrate like Japanese waltzing mice. The derivatives of phenylarsin acid attack the optic nerve, and large doses of atoxyl produce blindness.

What surgeons urgently need is a molecular compound which will either kill the bacteria and cocci that colonise cancer or neutralise their harmful toxins in the same way that salvarsan renders the spirochætes inert without destroying the organs or tissues of their host.

THE SURGEON OF THE FUTURE.

In pre-Listerian days the path to surgery lay through the dissecting room. A thorough practical knowledge of the anatomy of man was and is indispensable to a sound surgeon. Many surgeons whose names are prominent in the history of surgery—from John Hunter to Fergusson—taught anatomy by dissection. Surgeons no longer act as demonstrators of anatomy or conduct post-mortem examinations; the principles of antiseptic surgery forbid such occupations. The practical training in the dissecting room and post-mortem room teaches men something they cannot learn from books—the appreciation of tissue; this means, in plain terms, the power to recognise organs and tissues, normal and abnormal, at sight or by touch in the course of an operation.

Surgeons are of two types: they are either craftsmen or biologists. The surgical craftsman invents variations in technique—metal plates, wires, and screws for bones; or fancy methods of suturing wounds. Some expend their ingenuity on surgical cutlery and improve the knives and needles. The utility of a simple tool such as the clip forceps is inestimable. In spite of much ingenuity among surgeons an ideal ligature material awaits discovery. Clever contrivances like the laryngoscope, bronchoscope, and cystoscope have revolutionised special branches of surgery. Another useful instrument, the œsophagoscope, requires for its successful use a surgeon with the instincts of the sword swallower and the eye of a hawk. Recently, through the kindness of my colleague, Alfred Johnson, I witnessed through the cystoscope a stone slowly extruded from the vesical orifice of the ureter.

The biological surgeon studies pathology in its broadest aspect and investigates, in the laboratory, problems of morbid anatomy and bacteriology. The diagnostic value of reports issued from the laboratory by the pathologist and the bacteriologist, to be of value, must be estimated with the help of clinical experience. If the surgeon has had no experience in bacteriological methods he must accept the reports from the laboratory with the hopefulness of a patient swallowing physic compounded from a prescription he does not understand and which he is often unable to read. The training of surgeons in clinical pathology is of great importance, and it requires little foresight to recognise that for men ambitious to attain high places in surgery the high road lies through the pathological institute.

Morbid histology has been and still is of great use in classification, diagnosis, and prognosis of morbid growths; for a knowledge of their cause new methods are required. For these we fix our attention on the men along the sky-line—bacteriologists, experimental physiologists, physiological chemists, and physicists; the future lies with them. As it is of the utmost importance that surgeons shall have a practical knowledge of clinical pathology, it becomes essential to bring the wards, operating theatres, and laboratories into the closest intimacy. From this union of workers means will be found for curing diseased organs by chemiotherapy rather than by extirpating them. Until the right compound for curing cancer has been discovered surgeons will continue to excise cancerous viscera, and this makes it more necessary to discover means for ridding cancer of pyogenic bacteria.

The skill, ability, and dexterity with which surgeons remove a kidney, the uterus, or perform extensive resection of the intestine, great and small, can be witnessed almost daily in the splendid hospitals of large cities, but surgical effort is handicapped by streptococci and the coli group, which are very resistant to chemiotherapy. There is something fascinating in submitting septic morbid growths to what Ehrlich picturesquely terms a "bacteriological siege." Our difficulty is to destroy these seeds of disease without serious damage to the organs and the delicate tissues in which they flourish. The antiseptic solutions employed against bacteria are powerful cell poisons. We need therapeutic agents which destroy parasites but do not kill the tissues of the host. Acute minds are busy with these problems, and surgeons may hope to remove visceral cancer with no more risks than attend gastro-jejunostomy or hysterectomy for fibroids.

The magical effects of salvarsan on the lesions of syphilis, acute and chronic, lead us to hope that this compound will assist in the elimination of cancer of the mouth and tongue, for in these situations cancer is often engrafted on chronic syphilitic lesions. It is reasonable to believe that within a few years surgeons will notice a marked decrease in the number of men with cancer of the lips, gum, tongue, and pharynx, and of women with cancer of the vulva. The extinction of these forms of cancer will relieve surgeons of some of the most distressing and unsatisfactory operations they are called upon to perform.

In regard to the cure of malignant disease, there is most hope in chemiotherapy. In detecting the cause of cancer histology has proved a false dawn, but, like that peculiar light which precedes the dawn in the tropics, it is very fascinating. Who can tell how long we shall have to wait for the real dawn! We need not despair; the zeal, enthusiasm, and acumen of laboratory workers fill us with the hope that the ideal of all practitioners of medicine and surgery is attainable—the control of all forms of infective disease.

ON GASTRIC ULCER, WITH SPECIAL REFERENCE TO ITS TREATMENT BY GASTROSTOMY.[1]

BY SIR W. WATSON CHEYNE, BART., F.R.C.S. ENG.

IN thinking over the question of ulcer of the stomach the first point which occurs to me is, What are the chances of an ulcer in this situation healing if left to itself? Opinions on this point vary very much; some physicians say that the chances are good, while many surgeons take a much more pessimistic view. In considering this matter we must bear in mind that our conclusions are apt to be based to a large extent on experience in hospitals, and that it is only as a rule the most severe cases which find their way into these institutions.

In one of his numerous and enlightening articles on the subject of gastric ulcer Dr. W. J. Mayo gives various statistics by different pathologists of post-mortem findings, in which evidences of old ulceration of the stomach were present. Such evidences have been found in a surprisingly large number of cases, varying from 1·32 per cent. at the lowest estimate up to as many as 20 per cent. of all post-mortem examinations. The numbers seem to rise according to the amount of attention which the pathologist pays to this point; in other words, the traces of old ulceration are often not easy to find; hence the diversity in the results of different observers. Now a very large proportion of these post-mortem findings are healed ulcers, and as the number of persons who die from gastric ulcer and its sequelæ, including malignant disease, is very much less than the above findings, it follows that a very large proportion of gastric ulcers must heal without any special treatment. I have not been able to get out the proportions of deaths from gastric ulcer and its sequelæ, for they are not clearly stated in the statistical returns, but those from gastric cancer in proportion to other causes of death are about 0·034 per cent., and of perforation of the stomach probably rather more. I do not think, therefore, that we should take too gloomy a view of the possibility of healing of these ulcers.

A second question follows on this—viz., if an ulcer heals, what are the chances of its remaining permanently healed? We know that on the external surface of the body ulcers may break down from time to time if the original causes again come into play, and the history which we so often get in cases of gastric ulcer points to a similar course in many cases, a history of intervals, sometimes long intervals of comfort, during which presumably the ulcer has healed, followed by outbreaks indicating that the ulcer has broken down again. I often wonder whether the same thing may not occur in cases where healing of the ulcer has been brought about by surgical procedures such as gastro-enterostomy. (I use the term "gastro-enterostomy" here so as to include gastro-duodenostomy as well as gastrojejunostomy, the former being to my mind the best operation in cases where it can be performed.) I am afraid that there is already evidence that this may happen, and if so it becomes a question how far we should go in the direction of such procedures as artificial closure of the pylorus in order to make the new gastro-enterostomy opening act satisfactorily, thus producing a permanent pyloric obstruction and destroying the natural action of the stomach for ever.

Now let me recall to your minds the natural history of ulcers on the skin and the causes which interfere with healing. Take the case of an ulcer of the leg. In that case we find that there are various obstacles to healing. Thus the cause of the ulceration may be the growth of some specific organism which the natural defensive powers of the body are unable to overcome. Such causes are tubercle, syphilis, or bad infective conditions. Again, very potent hindrances to healing are movements of the parts and irritation by chemical agents, the latter being either applied with the view of promoting healing or developed in the part as the result of decomposition. A third cause is imperfect nutrition of the part, either from some local trouble, such as varicose veins or induration of the tissues around the ulcer, or from some general condition. And, lastly, various circumstances preventing contraction of the sore, such as the aforesaid induration or the adhesion of the base of the ulcer to surrounding structures, also form a serious obstacle to healing. Remove these various causes and healing rapidly occurs.

Now if we take the case of ulcer of the stomach, infective conditions interfering with healing, such as tubercle and syphilis, are comparatively rare and may be left out of account in the present discussion, and I believe that the chief causes which interfere with healing are the constant movements of the stomach in connexion with the digestion of the food, the presence of the acid gastric juice, and the malnutrition of the patient. For some hours after taking food the stomach is in constant movement, triturating the food and mixing it with the gastric juice, and during that time the ulcer is being torn and moved in a way which cannot be conducive to healing, and these movements are apparently more marked when ulceration is present. And, further, the presence of an ulcer sets up pyloric spasm which, apart from any cicatricial contraction in the neighbourhood of the pylorus, still further increases the muscular activity of the stomach. Again, the irritation of the ulcer by the acid gastric juice forms a very important obstacle to healing, and this acid secretion is increased by the presence of the ulcer, as shown by the constant occurrence of hyperchlorhydria. Although the normal epithelial cells are no doubt specially endowed with the power of resisting the action of the gastric juice, this can hardly be the case when they become weakened or diseased, nor is the granulation tissue on the surface of the ulcer likely to possess the same power. A further unfavourable circumstance in the case of gastric ulcer is the general malnutrition of the body from the want of food and the anæmia from loss of blood. Additional obstacles are the induration of the tissues around the ulcer which occurs in bad cases, and adhesion of the ulcer to surrounding parts.

Now our present methods of treatment, whether surgical or medical, do not fully meet the requirements for healing in all cases. Of the medical methods the best is no doubt to abstain altogether from feeding by the mouth and to substitute rectal feeding, but experience shows that the nutrition of the patient cannot be maintained for any length of time by rectal feeding, while the rest given to the stomach, especially as regards chemical irritation, is very imperfect.

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[1] Some remarks made at the discussion on the Treatment of Gastric Ulcer at the meeting of the Clinical Congress of Surgeons of North America, London, July 27th, 1914.

Nor are our present methods of surgical treatment altogether satisfactory. Gastro-enterostomy does not place the stomach at rest, the food is still churned in the stomach, and the artificial opening is presumably closed by muscular action while this trituration is going on; indeed, I should think that there must be increased muscular action in order to close the artificial opening and so prevent the food passing out of the stomach too soon. On the other hand, by circumventing pyloric obstruction gastro-enterostomy no doubt diminishes the hyperchlorhydria to a large extent, and I believe that it is chiefly to this action that the good results which follow gastro-enterostomy in suitable cases are due. Excision of the ulcer is no doubt more efficient, and is quite rightly taking a more and more prominent place in our procedures, but it is a severe operation and not applicable to all cases, and it may leave other troubles behind.

On the whole, I think we may truly say that while one or other of the various methods of surgical treatment at present in vogue will generally rectify a good many cases of gastric ulcer, they do not meet all cases, and it cannot be said that they imitate the natural methods of cure, which I think is what we ought always to aim at. A certain number of cases still remain in which the results are not altogether satisfactory, in which the ulceration is not completely arrested, or in which fresh ulcers form or other inconveniences result. And further, there is a considerable number of cases in which none of the present surgical methods of treatment are really satisfactory; for example, ulcers situated near the cardiac end of the stomach, adherent ulcers on the posterior wall, and small multiple ulcers or erosions of the mucous membrane.

This being the case the question arises, Are we at the end of our surgical resources for the treatment of this condition? Is the only problem of the future to improve our technique? I do not think so. For a considerable time I have thought that in cases unsuitable for our present methods it might be worth while to perform gastrostomy and give the stomach a much more complete rest than can be obtained in any other way. In April last a case turned up in which I thought it justifiable to depart from the usual surgical procedures and put this idea into practice. The patient was a lady, aged 65, who presented the various symptoms typical of ulcer of the stomach, but there was no evidence of organic obstruction. The pain was high up and to the left side, and while it was aggravated by taking food the patient also suffered constant pain referred to the left side of the middle line. A bismuth meal indicated that an ulcer was situated towards the cardiac end of the stomach, a small portion of the bismuth remaining in a pocket at that part of the stomach for a long time, while the rest of the stomach was emptied more quickly than normal.

I operated and found an ulcer of considerable size on the posterior surface of the stomach, high up near the cardiac end and firmly adherent to the parts behind, and on the anterior wall of the stomach at the same point there was also a commencing contact ulcer. Now the conditions were most unfavourable for excision; indeed, I doubt if it was at all possible, and certainly it would have been a most dangerous procedure. I have also long ago come to the conclusion that gastro-enterostomy on the distal side of an ulcer is useless, and that to block the pylorus in order to make the gastro-enterostomy opening functionate is not a satisfactory method of treatment in these cases. What I did, therefore, was to leave the ulcer alone and to perform gastrostomy beyond the ulcer by Witzel's method, pushing the catheter through the pylorus and for about three inches along the duodenum.

The patient was fed through the tube very soon after the operation, and the tube was left *in situ* for six weeks, when it was removed and the wound allowed to heal up. No food was given by the mouth for five weeks, and then small quantities of peptonised milk, Benger's food, &c., were commenced, in order to see if any discomfort resulted. For the whole of the six weeks the patient was given carbonate of bismuth and bicarbonate of soda by the mouth, partly as an antacid in case any hydrochloric acid was present in the stomach, and partly as an antiseptic and a good application to the ulcer (this especially refers to the bismuth). I chose six weeks as the period for keeping the gastrostomy wound open, because, as a rule, that length of time is more than sufficient for the healing of a much larger callous ulcer under favourable circumstances on the surface of the body. The immediate result of the operation was that the patient at once lost all the pain and discomfort from which she had previously suffered, and rapidly began to put on flesh and regain strength, and there was no trouble about the wound which healed in a few days, except where the tube passed down to the stomach. When tested with food by the mouth at the end of five weeks no discomfort was caused, and on leaving out the tube a week later the wound closed in a few days and since then she has had no further trouble.

Now, if we consider the effect of the gastrostomy in this case, the first point is that the stomach was placed completely at rest both mechanically and chemically. No food was introduced into it, for the food introduced through the tube passed directly into the duodenum about the point of entrance of the bile and pancreatic juice. There was therefore no necessity for any churning movements and presumably the muscle remained inactive. As food was not introduced into the stomach it did not come in contact with the ulcer and did not undergo any decomposition in the stomach, and I fancy little or no gastric juice was secreted; whatever secretion there was evidently escaped easily through the pylorus alongside the tube. Further, the patient was nourished satisfactorily, so that as far as health and resisting power were concerned, everything was most favourable for the rapid healing of the ulcer. Contrast this result with that after gastro-enterostomy. The main point in favour of the latter operation would be that the remedy is a permanent one. The result after gastro-enterostomy is, however, not always permanent, and I can, of course, say nothing about the permanency of the result after gastrostomy. Apart from ulcers unsuitable for excision by reason of their situation near the cardiac end of the stomach and their fixation to important structures, there is a considerable class of ulcers which are small and not easily detectable, merely superficial erosions, which nevertheless may give rise to a good deal of hæmorrhage, and which are unsuitable either for excision or for gastro-enterostomy. It seems to me that gastrostomy is eminently suited for such cases.

Further, I believe that the question of gastrostomy is worth while considering in cases of adherent ulcers nearer the pyloric end which cannot be excised in preference to gastro-enterostomy and closure of the pylorus. The advantages which I have just pointed out are very great, and I do not believe that the tube lying in contact with the ulcer would be any disadvantage. Indeed, we know that in the case of stricture of the urethra the quickest way of getting rid of the induration of the walls is to tie in a catheter for a few days, and it seems to me that the same result would probably follow in an indurated ulcer of the stomach. I should, of course, combine infolding of the ulcer with the gastrostomy whenever possible. I venture to bring this suggestion before you because I should like those who have greater opportunities than I have to give it their most careful consideration. It seems to me that it is more on natural lines than some of our present procedures, especially that of artificial closure of the pylorus.

While, so far as I know, gastrostomy has not previously been suggested as a method of treating gastric ulcer, jejunostomy has been carried out in a considerable number of cases of ulcer of the duodenum on much the same principles, but although it has its warm advocates the idea does not seem to have taken hold. It seems to me that jejunostomy for duodenal ulcer does not possess the advantages that gastrostomy offers in the case of certain gastric ulcers. Ulcer in the duodenum seems to set up, and keep up, hyperchlorhydria and movements of the stomach, and this may continue even though the patient is fed through a jejunostomy opening. Indeed, I should not be surprised if, even in the cases of duodenal ulcer, a gastrostomy with passage of the tube well down the duodenum, combined with infolding of the ulcer, might not act better than jejunostomy, and might possibly take the place of gastro-enterostomy and occlusion of the pylorus in cases where the infolding of the ulcer did not produce serious constriction of the lumen of the duodenum.

Central Midwives Board.—A special meeting of the Central Midwives Board was held at Caxton House, Westminster, on July 22nd, with Sir Francis H. Champneys in the chair, when a number of midwives were struck off the roll.—A meeting of the Board was held at the same place on the following day, with Sir Francis H. Champneys in the chair, when a case of falsified birth certificate was considered. The secretary reported that the matron of a recognised training school had, with the examination schedule of one of her pupils, tendered a certificate of birth that had been tampered with. The Board directed (*a*) that the candidate be not admitted to the examination until a satisfactory explanation of the alteration of the birth certificate be furnished to the Board; and (*b*) that the attention of the matron be called to this matter in which she has failed in her responsibility, and that she be warned that serious notice will be taken of any failure in her duties to the Board in future. A request by the examiners of the Bristol examination centre asking the Board to hold examinations in Bristol every two months instead of every four months as at present was granted. A letter was considered from a certified midwife complaining of the conditions of midwifery practice in Bangor and the absence of inspection by the local supervising authority. The Board directed that the midwife be informed that the Board regrets the difficulties incidental to the practice of midwifery in Bangor, but has no jurisdiction over the county councils, which appoint inspectors, but they are referring the matter to the County Councils Association.

THE SELECTION OF THE METHOD OF OPERATION IN THE TREATMENT OF GASTRIC AND DUODENAL ULCERS.[1]

By Professor Freih. A. von EISELSBERG.

In spite of all the progress in diagnostics the method of operation in the treatment of gastric and duodenal ulcer can be selected only after the abdominal cavity has been opened. In the work of collecting my series of 434 patients on whom operations have been undertaken for ulcerative processes of the stomach my pupil, Professor Clairmont, has rendered me very special assistance, and in the following paper I shall refer to many interesting details in the work he is about to publish. Here in a few words is a summary of the result of our observations:—

1. Symptoms of perforation of the ulcer into the general peritoneal cavity call for immediate operation, irrigation of the peritoneal cavity, closure of the perforation, and in bad cases jejunostomy in addition for the purpose of administering nourishment.

2. In the other complication of ulcer which we fear so much—namely, hæmorrhage—operation is in most cases better left alone.

3. In typical stenosis of the pylorus, especially when in the case of a long-standing ulcer no new symptoms have occurred, gastro-enterostomy is the operation to be chosen. 60 per cent. of cases of stricture of the pylorus are completely cured by gastro-enterostomy, while in the cases of open ulcer gastro-enterostomy is only successful in 41 per cent. Among 334 gastro-enterostomies for ulcer of the stomach and duodenum and its complications 17 deaths occurred. Of these, 8 (nearly half) occurred through continued bleeding from the ulcer; therefore gastro-enterostomy is not in all cases a complete protection against continuance of the hæmorrhage.

4. Unilateral pylorus exclusion (which I did first in 1894) offers the greatest security in dealing with ulcer and its complications. It should receive special consideration if the ulcer is still fresh and causing much pain, and finally in cases of duodenal ulcer. It seems to offer better guarantee of stopping hæmorrhage, even though this guarantee is no complete one.

5. For ulcer situated at a distance from the pylorus simple gastro-enterostomy is not so feasible as in cases of ulcer of the pylorus itself. This Professor Clairmont was the first to show on the evidence of the collected experience of the clinic. It offers only 34 per cent. of successes as contrasted with 54 per cent. successful cases of pylorus ulcer.

6. High hydrochloric acid values of the gastric juice, by distinctly favouring the development of post-operative peptic ulcer, detract very much from the value of gastro-enterostomy and exclusion.

7. I have seen this post-operative peptic ulcer after operations done by myself and my assistants

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[1] A paper read before the Clinical Congress of Surgeons of North America, London, on July 27th, 1914.

in the hospital as well as in patients who had been operated on by other surgeons, so that the growth of such an ulcer cannot have been attributed to our perhaps faulty technique. The danger of the formation of peptic ulcer occurs in the cases of high hydrochloric acid especially apparent in such cases where gastro-enterostomy was not strictly indicated. There are cases in which the history of the patient given by himself points to a gastric ulcer, but in which the signs of gastric ulcer are wanting at the laparotomy. There may be, perhaps, merely a relatively small stenosis of the pylorus—some adhesions or cicatricial tissue in the stomach. In former years it was more easy to decide on gastro-enterostomy in such cases. One regarded it as a safety valve, also a prophylactic against a stenosis occurring later and therefore being more serious. Since H. Braun made us familiar with the serious complication of post-operative peptic ulcer of the jejunum great care is necessary with reference to it. In cases when by autopsy *in vivo* I have found no tangible condition to indicate what one had expected to find judging from the history of the case, and nothing to show what sort of an ulcer it was, I have done an exploratory laparotomy simply and have refrained from doing what we may term a "concession gastro-enterostomy." Among 16 cases of post-operative peptic ulcers of the jejunum which I have seen following gastro-enterostomies performed in my own clinic and some by other surgeons, a whole series of measures, some of them very complicated, were tried to reproduce normal conditions. Only 2 patients were cured, 4 improved, 3 unknown, 2 unrelieved, and 5 died. So we see that peptic ulcer represents a very serious complication.

8. In cases of ulcer situated at a distance from the pylorus, as well as in cases where there is a high hydrochloric acid value, transverse resection seems to me the operation of choice, as this of all other resections—as, for instance, extirpation methods of operation—gives the best security against subsequent complications. It must be made wherever there is the least suspicion that the tumour under consideration may be of a malignant nature. Of 269 patients on whom gastro-enterostomy was performed in my clinic, and who could be kept under observation for some time after, 41 died at a later stage of the disease, 13 from carcinoma, whilst 6 died with continuance of the symptoms of the ulcer. These later deaths speak decidedly in favour of the radical operation. Transverse stomach resection is also the correct operation when the ulcer has invaded neighbouring organs, as nothing except removal of the ulcer will be of any real assistance. Transverse resection as planned by Riedel, also warmly advocated by Payr and Küttner, is a relatively safe operation. We have up to January, 1914, done 11 transverse resections, to which 6 more cases can be added up to July 1st, making 17, and not a single death. I have never seen a peptic ulcer or any other harm after this operation. When transverse resection cannot be done method Billroth II. should be employed. Method Billroth I. is the third in order to be considered. Partial excision is to be entirely rejected.

In extreme cases only when other operations are not feasible, jejunostomy may be considered —as has been already suggested in cases of perforated ulcer, when the patient is so weak that he must be fed immediately after the operation. Jejunostomy makes it possible for nourishment to be given even on the operation table. Further, in cases of peptic ulcer in which for exceptional reasons excision is not possible, it is the easiest and most rapid of all operations for gastric ulcers, and above all it leaves the stomach undisturbed. As it has only been done in extreme cases one cannot wonder it has met with so little success, and that it is noticeable that so many cases of peritonitis have been associated with it. They were patients whose peritoneum had lost its power of resistance.

Vienna.

INTERNAL DERANGEMENTS OF THE KNEE.[1]

By ROBERT JONES, F.R.C.S. IREL. (HON.), F.R.C.S.EDIN., CH.M. LIVERP.,
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WHEN your indefatigable and most persuasive secretary commanded me to deliver a short address before this large and representative body of surgeons I was elated by the honour but oppressed by the responsibility, but Dr. Martin told me that all I had to do was to relate my experiences, tersely and authoritatively. Twenty years ago I could have been as authoritative as one wished, for at that time I was less conscious of the need of experience. I have chosen the subject of derangement of the knee-joint because comparatively so little has been written about it in your own country, and this has always been a matter of great surprise to me, for your games like our own are rough, and we in England know to our cost that your youth are very skilled and very strenuous. I am credibly informed that the anatomy of their knee-joints differs but little from our own, and I am forced to conclude either that their cartilages are more securely placed than ours, or, which is most unlikely, that the condition is not so generally recognised as it should be.

By far the most common derangement of the knee is injury to the internal semilunar cartilage. It occurs eight times as often as does injury to the external meniscus. The internal cartilage is more firmly fixed and is not allowed the give-and-take movement vouchsafed the external, and in addition it bears a greater strain during the normal movements of the joint, often becoming thinned and frayed along its inner margin. The line of force is carried through the inner side of the knee in the normal relation of the femur to the tibia, while the abducted position of the foot when exaggerated produces outward rotation of the leg. The disproportion may be also due to the shape of the internal articular surface of the tibia which allows the internal condyle of the femur to glide backwards; thus the range of internal rotation of the femur on the tibia, which is a direct strain on the semilunar, is greater than that of external rotation. In nearly all cases the cartilage is displaced inwards, and on those rare occasions where a protrusion has been felt from the outside it is due to hæmorrhage following a tear, a localised bruising of tissue or a buckling of cartilage accompanied by effusion which gives rise to an irregular outline of the articular margin. The most constant symptom of a displaced or fractured semilunar is a sudden inability to extend the knee. This generally comes on immediately after injury, and the fact is important from its legal aspect. The most frequent cause of the displacement or fracture is strain thrown on the internal lateral ligament while the knee is flexed and the tibia rotated outwards. In rare instances I have known a displacement occur while the knee is fully extended. The force necessary to cause the derangement in a first injury is usually severe, and the pain is acute. The injury may often be met with on the football field. The athlete drops, rolls on the ground nursing his knee. Assisted he hobbles off the ground with his knee flexed. When he arrives home the joint is painful and distended. If the cartilage is still displaced its reduction gives considerable relief from pain. The tender points of pressure are found over the internal lateral ligament and over the anterior horn of the internal semilunar. Any attempt to abduct the limb at the knee is acutely painful. Forced extension of the knee is painful over the site of displacement. If an injured semilunar is rationally treated after its initial displacement it stands a good chance of being completely cured. The first displacement is not often accompanied by any degenerative change; reduction, however, must be absolute. All movements of the cartilage must be prevented until union of the torn structures is complete, and no lateral strain must be allowed until the lateral ligament, so often injured, has had time to effect a recovery. There are many ways of reducing a cartilage, but if no anæsthetic be used I have always thought it wise to summon the assistance of the patient himself. I first fully flex his knee and rotate it inwards. I then tell him at the count of "three" to forcibly extend his own knee while we help him by pressure from above. In this way he materially assists the surgeon and simplifies the reduction. I have often in this way reduced displacements of several weeks' duration, and the reduction can usually be felt by the surgeon. If the displacement be corrected the patient usually knows definitely and at once, and the surgeon, if wise, will abide by his verdict. If the patient tells you the cartilage is still out he is generally right, and it is best to believe him. The knee should remain fully extended after reduction in all recent displacements. If the knee does not voluntarily remain completely extended the displacement is not corrected. Such a joint, with a clear history of semilunar injury, and strained or ruptured internal lateral ligament, should be treated by complete rest in full extension for four or five weeks. Instead of this, the patient is usually allowed to get up and walk in a week or a fortnight. This is a grave mistake, and in a majority of instances lays the foundation for a series of recurrences. The cartilages can only be retained in a fixed position when the limb is fully extended; they participate in all rotary and lateral movements of the joint. Rest of the limb in the fully extended position is therefore indicated, and as long as the effusion lasts the patient should be recumbent. Prolonged effusion relaxes by elongation all the protective structures of the joint; we should therefore aspirate if absorption be retarded. Elongation of the quadriceps with a subsequent weak knee is closely associated with prolonged and recurrent effusions. Massage can be employed while the knee is being rested in extension, and it is still more valuable to encourage the patient to practise contracting his quadriceps without flexing the joint. When the patient is up we should guard his internal lateral ligament from strain during walking, by directing him to walk with his toe slightly turned in and his foot inverted. This is made easy by raising the heel of his boot a third of an inch on the inner side to deviate body weight from the inner to the outer lateral ligament, just as we would do in an early case of knock-knee.

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[1] A paper read before the Clinical Congress of Surgeons of North America, London, July 28th, 1914.

It is more common to see the case when the acute symptoms are over or when several recurrences have taken place, and we have to depend then upon the history which is usually definite enough. First we hear of an injury, it may be severe or very slight, it usually refers to abduction of the foot, to flexion and external rotation of the tibia. Locking of the knee may have occurred on the first occasion or not—synovitis practically *always* does, but even when locking has not occurred a giving way or slipping is referred to. The story of a reduction makes the diagnosis complete. If the knee be examined a few weeks after the accident the effusion will have gone, but there is often pain on pressure over the internal lateral ligament and above the tibial margin over the anterior horn of the semilunar. Pain is frequently felt in front of the joint on slight hyper-extension of the knee. At a still later stage recurrences and fresh effusions may have occurred accompanied by locking of the joint, the pain on each occasion being capable of definite localisation. Locking is the most definite and reliable symptom, and unless it occurs an element of doubt must always remain. On exploring the knee one frequently finds a fractured or displaced semilunar where there has been no clear history of locking, but the discovery is made, if not with surprise, with a distinct sense of relief. The patient will often only be prepared to admit to a something yielding on the inner side of the knee which gives him a sense of insecurity. This may involve only a momentary inconvenience, or it may occasionally be accompanied by synovitis. He may state that he feels something slip in and out, merely giving him a sense of insecurity. However these symptoms may differ, the one constant fact should remain—namely, that the patient is always definitely clear that the sensation does not change from place to place. The various displacements are often said to be accompanied by a click.

There is no time to deal with the exceptional case which makes the surgery of the knee-joint so fascinating. It is often impossible to diagnose accurately without an operation. Among such abnormal cases I have found the external cartilage on the inner side of the knee, and I have found the fractured end of an internal cartilage lying on the outer side just internal to the external lateral ligament; also cartilages so split up that different segments of the same cartilage would become displaced at separate times, giving rise to distinctive symptoms. Frequently I have found two separate lesions, either of which would account for the symptoms, and unless both were rectified the operation might have failed. Sometimes fringes and lipomata and pedunculated semi-detached bodies have been present when I have expected a displaced cartilage, and I have sometimes even had to close my wound without having remedied any defect. These confessions show that the knee is sometimes as secretive as the abdomen.

The symptoms are less acute in their primary onset in synovial fringes, the pain is quite local, and is not situated definitely in the internal lateral ligament. Creaking in the joint is common, and effusion almost invariably follows each nipping. There is usually in the recurrent case a thickening on each side of the ligament of the patella due to hypertrophy of the post-patellar pad of fat. One may expect to find synovial fringes attached to a post-patellar pad in cases of recurrent synovitis of the knee where the pad is found thickened and where occasional twinges occur in front of the joint. Loose bodies lock the knee sometimes, but usually only for a brief moment, and the symptoms, although sharp, are not acute. They can always be differentiated, because unless pedunculated they can be isolated in different parts of the joint, although they usually have a favourite resting place. They can generally be demonstrated by radiography. I have known lipomata to lock the knee, but the symptoms they produce are rarely acute. They are often accompanied by painless effusions, and can generally be felt in the pouches. An osteoma can usually be detected by careful examination. It can be felt and radiographed. It is the means of locking a joint when a muscle or tendon slips over it, but the locking is never accompanied by effusion. There is a type of knee which clicks on full extension, and wherever you place your finger the clicking seems immediately under it. This is sometimes due to a nodular condition of the anterior portion of the semilunar, but often it will be found associated with a slipping in and out of the external cartilage very clearly to be felt by placing the finger in the depression between the bones.

I refuse to operate upon any case which I see immediately after the first displacement, as so large a proportion of such cases get well under appropriate treatment, nor do I encourage operation in cases where the recurrent trouble is painless and is never followed by effusion in the joint. I strongly advocate operation where the recurrence is sometimes followed by acute symptoms and I encourage it in all recurrent cases where a strenuous athletic life is a means of livelihood or a physical necessity. Operation is a positive necessity in the case of men who work among moving machinery or stand in positions where a yielding knee may mean disaster. I have operated upon patients from 12 to 60 years; age, therefore, is not a contra-indication. An argument in favour of operation is the occurrence of tubercle and so-called rheumatoid trouble as a direct result of the irritation of a displaced cartilage. If I decide to operate I prefer to do so with the knee flexed to right angles, so that it need not be further flexed during the operation. I have a very real dread of accidental infection of a knee-joint, for it may mean the loss of limb. Further, I consider a knee which has been the seat of trauma as very susceptible to infection, and am therefore careful not to operate during the presence of effusion nor to move it during operation for fear of the ingress of air or dust. The most convenient way is to have the limb hanging in flexion over the end of the operating table. Some thicknesses of gauze, squeezed out of a solution of biniodide of mercury, are wrapped round the joint and the incision is made through the gauze, the cut edges of which are fixed into the wound. In this position it is not necessary, excepting in very stout people, to make the incision longer than an inch and a half. The incision I now employ is nearly transverse, commencing just behind the ligament of the patella, and traversing slightly above the tibial border, taking care to spare the internal lateral ligament from injury. Through this small opening a most excellent view can be obtained of the joint with the aid of retractors. The finger should never enter the joint. Neither the surgeon nor his assistant should touch the wound except with sterile instruments; the sutures for the capsule should be manipulated with forceps, the edges of the capsule being secured by a blanket stitch. The cartilage may be found in almost any conceivable position. It may be split along its inner margin; it may be fractured; it may be detached anteriorly; it may be turned inwards, like a bucket handle with its convexity inwards; it may be nodular; the posterior part may be in front; the anterior portion may be loose; it may be attached at its extremities and free along the whole part of its outer border; it may be firmly fixed with its inner border frayed and serrated; the anterior part may be ground away or found quite loose as a separate body; it may look quite normal, but its moorings found loose, or the posterior part may be split, which can only be discovered by detaching the anterior portion and drawing the cartilage towards the front of the joint. The examination should be gentle, and it is made easier by the use of a small blunt hook. It is only necessary to remove the loose portion of cartilage if the remainder be firmly attached. If it be decided not to remove the whole cartilage care should be taken to make the section without drawing upon the stump, otherwise it will be loosened and give rise to symptoms of recurrence. The capsule should not be closed until a search has been made for fringes, tabs, or other possible sources of derangement. I always apply a tourniquet and never tie a vessel nor drain the wound. Effusion, if it occurs, is usually very trivial if the operation has been done gently. As no structures of any importance to the stability of the joint have been severed, walking may commence in from 10 to 14 days, the joint being protected for another week.

Loose bodies of whatever type should be removed. An endeavour should first be made to localise and fix them. This should be done immediately before the anæsthetic, when the patient's assistance can be obtained if necessary. The patient's hands should be sterilised and he should wear a mask and rubber gloves, and when found the fixed body should be placed in the keeping of a reliable assistant. The knee should be kept *extended* during this operation. These loose bodies are often found in connexion with rheumatoid arthritis, and should be removed whenever practicable, and this may involve splitting the patella longitudinally to obtain a good view of the interior of the joint. They are frequently found at the back of the joint and obstruct flexion and sometimes extension. They cannot be effectively removed by an anterior incision, and it will be necessary to approach the joint from behind. The narrow communication between the anterior and post portions of the joint prevents them from travelling if they should prove of any size, therefore their removal is not difficult. An incision is made through the popliteal space, the nerve and vessels being kept to the outer side, and usually the loose bodies can be felt through the capsule. This route has also been described by my friends Brackett and Osgood.

[Mr. Jones concluded his interesting paper by exhibiting slides of the joint conditions of patients upon whom he had operated for obstructions due to the slipping of tendons or muscles over exostoses, and for fractures of the tibial spines, associated or not with rupture of the crucial ligaments, an injury which he also described.]

THE RESULTS OF OPERATION (LARYNGO-FISSURE) FOR INTRINSIC CANCER OF THE LARYNX.[1]

BY PROFESSOR E. SCHMIEGELOW.

SURGICAL treatment of intralaryngeal cancer gives exceedingly good results, especially when compared with those obtainable by surgical treatment of cancer in other internal organs. On examining this fact we find it to be due to the peculiar manner in which intrinsic cancer of the larynx originates and develops and spreads, as was originally pointed out by my friend Sir Felix Semon. It would be interesting historically to consider the development of the pathology, diagnosis, and treatment of intrinsic cancer of the larynx, but lack of time forbids me doing so. I may, however, be permitted to state here in London, speaking to an assembly of prominent American and English surgeons, that in my opinion the whole of our present knowledge of the diagnosis and treatment of this disease is founded on the works of Semon and Butlin, who, towards the end of last century, entirely revolutionised our views with regard to the malignancy of intralaryngeal cancer. Before their day the surgical treatment of this disease had always been regarded as almost hopeless, but Semon showed us that the chief reason of this was that the disease was always diagnosed too late, so that it was too far advanced to give any good operative result.

Having further learnt that intralaryngeal cancer in the great majority of cases appears as a primary cancer of the vocal cord, and therefore soon causes hoarseness, we have thus the means of recognising the disease at an early stage of its development, while still limited to the vocal cord, and so of a probable radical cure by removing the diseased vocal cord through a laryngo-fissure.

To illustrate the frequency of primary cancer of the vocal cord I wish to draw your attention to the following table of 66 cases of intralaryngeal cancer which have come under my observation (Table I.).

TABLE I.—*Primary Seat of Intralaryngeal Cancer.*

No specified localisation	18	cases.
Vocal cord	36	,,
Sinus Morgagni	2	,,
Arytenoid region	4	,,
Epiglottis	1	,,
Ventricular band	5	,,
	66	,,

In the first 18 cases the primary seat of the disease could not be localised, as the tumour had extended too far into the larynx when first observed. The table clearly shows that cancer of the interior of the larynx in by far the majority of cases originates as a growth of one vocal cord, generally in the central part of it, and that it can therefore be radically removed. If the disease, however, has extended to the anterior commissure the prognosis becomes more serious, as under these circumstances the thyrotomy cuts through the growth and may possibly be followed by a recurrence.

Those cancers of the larynx which do not primarily attack the vocal cords have, on the contrary, a bad prognosis; first, because they very often are not discovered and taken in hand until they have spread so far that there is no possibility of a radical cure by means of a laryngo-fissure; secondly, because these extra-cordal cancers are generally of a more soft medullary character, growing quickly and with greater tendency to involvement of the neighbouring lymphatic glands. The only exceptions to this are the pedunculated adeno-carcinomas which spring from the aryteno-epiglottic folds. Of these I have seen three cases which had a relatively good prognosis, and could be treated endolaryngeally with favourable results.

Having made the diagnosis by means of laryngoscopic inspection, supported by microscopic examination of a portion removed through the mouth, one has to remove the growth as soon as possible by means of a laryngo-fissure. This operation should be performed as indicated by Butlin and Semon, who, about 1890, inaugurated this treatment and proved that this comparatively safe operation was sufficient, if only performed early enough. I myself, chiefly following their instructions, have operated in the following manner.

The operation is always performed under general anæsthesia. I begin with morphium-ether and make a low tracheotomy. Hahn's tampon-cannula is introduced and the narcosis is continued with chloroform. The thyroid cartilage having been divided and the interior of the larynx opened, I fill the pharynx with sterilised gauze introduced from below through the split larynx in order to prevent the saliva from descending and interfering with the scene of action. According to Semon the larynx is packed with gauze soaked in a 10 per cent. solution of cocaine, to which I add a few drops of a 1 per mille solution of adrenalin in order to make the mucous membrane of the larynx anæsthetic and bloodless. Then the neoplasm, together with the whole diseased vocal cord, is removed by means of a knife and scissors. All the diseased area having been removed and the bleeding stopped, we formerly filled the larynx with a tampon of iodoform gauze, but after Butlin taught us to give up tamponading and to close the thyrotomy wound at once the results of operation have been much better. The patients are now able to swallow on the day of operation and can leave their bed a few days later. This, of course, is of the greatest importance in preventing complications in the lungs, especially in elderly people. My two eldest patients, respectively 71 and 74 years old at the time of operation, were able to leave their beds on the second day, and they are both alive and well now at the ages of 76 and 80 years respectively. Thyrotomy could only be performed in 33 of my cases treated up to 1912, as shown in the following table (Table II.):—

TABLE II.—*Results in 70 Cases of Cancer of Larynx (Extrinsic and Intrinsic).*

	Cases.		Cured.		Died or relapsed.
No treatment	10	......	0	......	10
Tracheotomy	8	......	0	......	8
Endolaryngeal removal	5	......	1	......	4
Thyrotomy	33	......	18	......	15
Subhyoid pharyngotomy ...	1	......	0	......	1
Partial resection of the larynx	4	......	0	......	4
Total resection	9	......	1	......	8
Totals	70		20		50

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[1] A paper read before the Clinical Congress of Surgeons of North America, London, July 28th, 1914.

The result of these 33 thyrotomies was that 28 patients survived the operation, whilst 5 died from pneumonia, due chiefly to post-operative hæmorrhage. Amongst the 28 patients recurrence took place in 10 cases, whilst 18 patients are alive and well. These 18 had the carcinoma entirely limited to the vocal cord and the diagnosis was made at an early period of the disease—with only two exceptions. The first of these was a man, aged 44 years (see Table III., Case 11), who had a cancer of the posterior wall of the larynx, and whom I was able to follow for three years after the operation, when I lost sight of him. The second was a man, aged 28, suffering from an epithelioma of the left ventricular band, anterior commissure, and the anterior part of the right ventricular band. This patient I operated on 14 years ago; since then he has been on an expedition to the North Pole, and is still alive and well. The last 4 patients were operated on in 1912, and have therefore only been under observation for about two years since the operation. But they were all cases of quite limited epithelioma of the vocal cord and were operated on so early that there is not much chance of recurrence. The subject of Case 7, a man aged 61, was operated upon in 1905 for a cancer of the vocal cord. During the following seven years his larynx remained perfectly healthy, but he now has a quickly growing cancer in the throat requiring tracheotomy. Ought this to be considered as a recurrence or as an accidental cancerous infection of a larynx which has kept perfectly healthy for seven years after operation? Personally, I am inclined to look upon it as an accidental reinfection. In all the other cases of recurrence this took place within a year after the thyrotomy.

TABLE III.—*Eighteen Cases of Intrinsic Cancer of the Larynx Thyrotomised without Recurrence.*

Case.	Age.	Sex.	Date of operation.	Time of observation.	Remarks.
1	62	Male.	1892	18 years	Died in 1910 from cancer of rectum; larynx free.
2	28	,,	1900	14 ,,	Alive; no recurrence.
3	50	,,	1904	10 ,,	,, ,,
4	69	Female.	1904	10 ,,	,, ,,
5	71	Male.	1905	9 ,,	,, ,,
6	55	,,	1896	8 ,,	Died from cancer of stomach; no recurrence in larynx.
7	61	,,	1905	8 ,,	Alive.*
8	56	,,	1909	5 ,,	Alive; no recurrence.
9	47	,,	1905	4 ,,	Died from tuberculosis, 1909. Larynx free.
10	63	,,	1910	4 ,,	Alive; no recurrence.
11	44	,,	1896	3 ,,	Lost sight of.
12	55	Female.	1911	3 ,,	Alive; no recurrence.
13	38	Male.	1911	3 ,,	,, ,,
14	66	,,	1911	2½ ,,	No recurrence; died from some other disease.
15	58	,,	1912	2 ,,	Alive; no recurrence.
16	67	,,	1912	2 ,,	,, ,,
17	66	,,	1912	2 ,,	,, ,,
18	74	,,	1912	2 ,,	,, ,,

* Seven years after the operation cancer recurred in the larynx, probably new infection.

The functional result was exceedingly good in all cases. The voice was strong, generally sonorous, but in a few cases hoarse. The man aged 71 (Case 5) was operated upon in 1905. I saw him last in 1913; he was then 79 years old and had a strong, healthy voice. A clergyman, aged 75, who was operated upon in 1896, fulfilled his duties for eight years and preached every Sunday in two churches. The two men, aged respectively 66 and 67 years (Cases 14 and 16), who were operated upon in 1912 are able to make speeches to large assemblies with comparatively clear voice.

So as to get a broader basis of judgment as to the results of thyrotomy in case of intrinsic cancer of the larynx I have combined in the following table (Table IV.) my own experiences and those of F. Semon, Chiari, and StClair Thomson.

TABLE IV.—*Results of Operation by Laryngo-fissure.*

Operators.	No. of cases.	Cure over 3 years.	1–3 years.	Under 1 year.	Recurrence.	Death from operation.
Semon	24	15	4	1	3	1
Chiari	29	11	4	—	11	3
Schmiegelow	33	11	7	—	10	5
StClair Thomson ...	10	7	2*	—	1	0
Totals	96	44	17	1	25	9

* In one case secondary operation of removal of larynx was performed and the patient is now alive, five years later. In the second the patient died from other causes 15 months after laryngo-fissure.

It will be seen from the above that of 96 patients operated upon 63½ per cent. were cured for more than one year after the operation.

Copenhagen.

HYPERTHYROIDISM: PRIMARY AND LATE RESULTS OF OPERATION.[1]

BY C. H. MAYO, M.D.

THE term "hyperthyroidism" is so expressive of a group of symptoms, the symptom-complex of which has been seen and described under various names in all countries, that it is chosen as the title of this study. Through one hundred and fifty years the condition has been a topic of discussion by Morgagni,[2] Flajanni,[3] Parry,[4] Graves,[5] and Basedow,[6] and later under the term "exophthalmic goitre" by innumerable other observers.

The thyroid is a very necessary gland in the growth and development of body and brain, and must also be classified among both the glands of nutrition and the glands of defence. Like all the essential organs and kinetic glands of the body, it has a wide variation of its activity within the limits of health. Probably the secretion of one-sixth of the adult gland is enough to maintain the metabolic balance, which is no more surprising than that one half of one kidney will maintain urinary balance. A similar condition exists in many other organs of the body.

Many factors exist which control such organs in order that the balance of health may be maintained, yet any or all of them may be temporarily deficient or over-active in their functions, but unless there be an actual great loss of cells or a markedly hyperplastic condition they are held in control. In this variation of activity in the normal thyroid and in the normal changes in activity of its various vesicles the thyroid sometimes manifests a storage function, retaining for a time its secretion and depositing colloid substance for this purpose. This almost brain-like intelligence of the glands, both duct and ductless, shows why so futile is the effort to transplant glands from other animals to the human, expecting that the gland will automatically functionate. Especially is this true of the reported cases of the transplantation of glands from animal to man, in which there is always a definite laking of the blood. A temporary benefit may be obtained, however, from the transplantation of the glands of internal secretion through the digestive power of the phagocytes.

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[1] A paper read before the Clinical Congress of Surgeons of North America, London, July 28th–30th, 1914.

[2] Morgagni: De sed. et causis morb., cap. xxi., art. 36; cap. xvii., art. 19; cap. xxiii., arts. 4 and 6.

[3] Flajani: Collezione d'Osservazioni e Reflessioni di Chirurgia, iii., 270–286.

[4] Parry: Collections from the Unpublished Medical Writings of the late Caleb Hillier Parry, London, 1825, vol. ii., p. 3; Elements of Pathology and Therapeutics, 1815.

[5] Graves: London Medical and Surgical Journal, May 23rd, 1835; Repr. System of Clinical Medicine, Dublin, 1843.

[6] Basedow: Casp. Woch. f. d. ges. Heilk, 1840, pp. 13, 14.

That there should be a definite microscopic picture in so definite a disease as hyperthyroidism is to be expected. The only organ that gives such an exclusive picture is the thyroid. The trained pathologist should not only recognise the condition but also its degree of activity and its stages—that is, whether progressing, regressing, or regenerating.

The coincident pathology of the other essential organs, such as nephritis, fatty degeneration of the liver, myocarditis, and brown atrophy of the heart muscle, while characteristic of toxæmia, would not necessarily come from the toxic thyroid. The enlarged thymus is found in a majority of cases of hyperplastic thyroid, yet is not found in many of the most serious cases.

In the pathological examination the whole of the tissue removed must be macroscopically observed, so that an unessential small area of hyperplasia or of colloid storage be not chosen as the sole picture of the glandular histology. The changes in so small an amount of tissue may be neutralised by other factors. The pathological material from our cases has been studied by Wilson.[7] In his most recent paper he presents a comparative study of the thyroids from the three groups of cases which we recognise clinically (Plummer). They are summarised as shown in the accompanying table.

Discussion.—1. Practically all cases of clinically true exophthalmic goitre show marked primary hypertrophy and hyperplasia of the parenchyma of the thyroid. Furthermore, the clinical stage of development of the disease is paralleled by the stage of development of the pathological condition in sufficiently marked degree that one may estimate the clinical condition from the pathological examination with about 80 per cent. of accuracy. The degree of severity of the clinical condition is similarly paralleled by the pathological condition of the gland. The relationship between hypertrophy and hyperplasia of the thyroid and the clinical symptoms of true exophthalmic goitre is remarkably constant.

2. While mild degrees of hypertrophy and hyperplasia within physiological limits may be present in the gland, particularly in the young and during pregnancy, yet the absence of this condition in the thyroids of adults coming to operation for toxic non-exophthalmic and non-toxic goitres is most striking. Without making any allowance for either clinical or pathological errors of diagnosis, less than 1 per cent. of all cases coming to operation for goitre show any considerable primary hypertrophy and hyperplasia of the parenchyma of the thyroid except as associated with clinical symptoms of trüe exophthalmic goitre.

3. The pathology of atoxic simple goitre is marked essentially by atrophic parenchyma, decreased function and decreased absorption. The process is a chronic one.

4. The pathology of toxic non-hyperplastic goitre of Plummer's clinical group 2 (that is, those resembling exophthalmic goitre) is one of increased parenchyma through regenerative processes in atrophic parenchyma or the formation of new parenchyma of the fœtal type with an increase in each instance of secretory activity and of absorption. The process is a chronic one, but sufficiently active to cause the patient to consult a surgeon earlier than do those in clinical group 1.

5. The nearer the cases of clinical group 2 (toxic non-hyperplastic) approach, in age and symptoms, true exophthalmic goitre, the shorter the duration of the period of goitre before operation and the smaller the average weight of the gland at the time of its removal.

6. The cases of toxic goitre of clinical group 1 (that is, those in which the symptoms are of the cardio-vascular variety) much more closely resemble cases of simpler goitre in their pathology in all respects than do the cases of clinical group 2. A larger number of them are of the colloid goitre type; the enlargement of the thyroid has existed for a longer period before operation and the portion of the gland removed is materially larger than in those cases of clinical group 2.

7. Finally, it may be stated that all the above pathological evidence points to a constant relative association of increased secretion and increased absorption from the thyroid proportional to the degree of toxicity on the part of the patient. We have as yet no absolute proof that such secretion and absorption is the cause of, rather than coördinate with, the symptoms, but the presented evidence strongly points to that conclusion.

What causes an over-activity of the thyroid? It is possible that the condition may arise from extra demands made upon the gland in its capacity for nutrition or defence in toxic conditions. Possibly in its latent sex relationship such demands may be temporary or long continued. For a time the excess secretion may be neutralised. When shock is attributed as the cause of the sudden onset of hyperthyroidism, it is often only an evidence that the equilibrium of the nervous system has been upset in the presence of a latent hyperplastic thyroid, thus producing the sudden symptoms which had previously been controlled or neutralised.

Up to June 15th, 1914, 6868 operations had been performed for goitre in our clinic. Of these, 3295 were performed upon patients with hyperthyroidism. The greater number of these patients have been seen clinically by Plummer.[8] His observations on the symptoms are as follows:—

> The cases were classified clinically as hyperplastic toxic, hyperplastic atoxic, non-hyperplastic toxic, and non hyperplastic atoxic.
>
> Patients coming under observation with non-hyperplastic toxic goitre gave a history of having first noted the goitre at the average age of 22 years, and the evidence of intoxication at the average of 36·5 years. The corresponding ages for hyperplastic goitre were respectively 32 and 32·9 years.
>
> That non-hyperplastic goitre was noted 10 years earlier in life than hyperplastic goitre, that 14·5 years elapsed between the appearance of non-hyperplastic goitre and the development of notable toxic symptoms, and that the constitutional

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[7] Wilson: Journal of the American Medical Association, Jan. 10th, 1914, vol. lxii. p 111; American Journal of the Medical Sciences, December, 1908, pp. 851–861; ibid., March, 1914, vol. cxlvii., No. 3, p. 344.

[8] Plummer: American Journal of the Medical Sciences, December, 1913, No. 6, vol. cxlvi., p. 790; Journal of the American Medical Association, August 30th, 1913, vol. lxi., p. 650.

TABLE SETTING FORTH A COMPARISON OF PATHOLOGICAL GROUPING OF THYROIDS FROM CASES OF TOXIC HYPERPLASTIC, TOXIC NON-HYPERPLASTIC, AND ATOXIC (SIMPLE) GOITRE.

	Percentage distribution.					Average age at operation.					Average duration of goitre before operation.					Average weight of portion of gland removed.				
	Exoph goitre. "Ex-oph. list," 1911–12. 431 cases.	Toxic goitre clinical, Group 2. "Ex-oph. list," 1910–12. 129 cases.	Toxic goitre clinical, Group 1. + "Simple list," 1911–12. 155 cases.	Toxic goitre clinical, Group 1. ? "Simple list," 1912. 90 cases.	Atoxic (simple) goitres "Simple list," 1912. 373 cases.	Exoph. goitre. "Ex-oph. list," 1911–12. 431 cases.	Toxic goitre clinical, Group 2. "Ex-oph. list," 1910–12. 129 cases.	Toxic goitre clinical, Group 1. + "Simple list," 1911–12. 155 cases.	Toxic goitre clinical, Group 1. ? "Simple list," 1912. 90 cases.	Atoxic (simple) goitre. "Simple list," 1912. 373 cases.	Exoph. goitre. "Ex-oph. list," 1911–12. 431 cases.	Toxic goitre clinical, Group 2. "Ex-oph. list," 1910–12. 129 cases.	Toxic goitre clinical, Group 1. + "Simple list," 1911–12. 155 cases.	Toxic goitre clinical, Group 1. ? "Simple list," 1912. 90 cases.	Atoxic (simple) goitres. "Simple list," 1912. 373 cases.	Exoph. goitre. "Ex-oph. list," 1911–12 431 cases.	Toxic goitre clinical, Group 2. "Ex-oph. list," 1910–12. 129 cases.	Toxic goitre clinical, Group 1. + "Simple list," 1911–12. 155 cases.	Toxic goitre clinical, Group 1. ? "Simple list," 1912. 90 cases.	Atoxic (simple) goitres "Simple list," 1912 373 cases.
		374 cases.					374 cases.					374 cases.					374 cases.			
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Years.	Years.	Years.	Years.	Years.	Years.	Years.	Years.	Years.	Years.	Grams.	Grams.	Grams.	Grams.	Grams.
A Early primary parenchymatous hypertrophy and hyperplasia	4·0	—	—	—	—	25·0	—	—	—	—	0·3	—	—	—	—	38	—	—	—	—
B Advanced primary parenchymatous hypertrophy and hyperplasia	43·0	—	—	—	—	31·7	—	—	—	—	0·9	—	—	—	—	61	—	—	—	—
C Regressing primary parenchymatous hypertrophy and hyperplasia	52·5	—	—	—	—	40·7	—	—	—	—	3·5	—	—	—	—	51	—	—	—	—
Average of total parenchymatous hypertrophy and hyperplasia	99·5	—	—	—	0·5	35·9	—	—	—	—	2·3	—	—	—	—	55	—	—	—	—
D Secondary regeneration of atrophic parenchyma of "colloid" goitre ...	—	50	17	9	9·0	—	34·0	32·0	38·0	31·0	—	6·9	15·3	8·0	9·6	—	67·0	100	153	143·0
E Fœtal adenomas... ...	—	12	7	10	5·0	—	39·0	47·0	39·0	38·0	—	4·4	5·8	13·6	12·5	—	68·0	97	139	122·0
F Degenerating fœtal adenomas	—	33	14	18	18·0	—	43·0	50·0	48·0	40·0	—	12·6	22·7	24·2	13·1	—	91·0	186	190	129·0
Average of total fœtal adenomas	—	45	21	28	23·0	—	41·0	48·9	44·7	39·7	—	8·8	18·0	20·5	13·0	—	83·7	162	172	127·5
G Adult "colloid" adenomas	—	3	21	19	23·0	—	45·0	44·0	43·0	39·0	—	17·7	15·2	14·5	14·3	—	139·0	184	206	147·0
H Atrophic parenchyma ("colloid") thyroids, "adenomatoses," &c.	—	2	41	44	44·0	—	52·0	46·0	41·0	37·0	—	12·0	20·2	16·5	14·5	—	140·0	196	188	164·0
Average of total colloid goitres, adult parenchyma	—	5	62	63	67·0	—	47·5	45·0	41·6	37·5	—	14·0	18·7	16·0	14·4	—	139·0	192	193	159·0

symptoms were noted but a few months later than the goitre in the patients affected with hyperplastic thyroid, was alone sufficient to show that we were dealing with at least two distinct pathological and clinical groups. That one was not the sequence of the other was self-evident.

We may safely come to the conclusion that exophthalmic goitre is a definite clinical complex always associated with hyperplasia of the thyroid, and that it should be sharply distinguished from the constitutional state or states that may develop with non-hyperplastic goitre.

Let us note the parallelism of thyrotoxicosis and alcoholism and assume that there are three toxic elements in the thyroid secretions, one damaging chiefly the nervous system, one the circulatory system, and the other producing exophthalmos. In exophthalmic goitre all three elements are in excess, but the clinical picture is dominated by a nerve toxin, although in individual cases the circulatory toxin or element producing exophthalmos may seem to be in excess.

The intoxications from non-hyperplastic goitre may be divided into two merging groups: (1) a group in which the cardiac toxin predominates, in which the clinical picture closely resembles, and in many instances cannot be differentiated from the cardio-vascular complex resulting from alcoholic, luetic, septic, and other well-known toxins; and (2) a group more closely approaching the picture of Graves's disease, and including the cases that have been erroneously so diagnosed by many of the profession. [In this group are those cases in which there is degeneration of encapsulated adenomata. While they do not have exophthalmos, in lieu of this they may have the staring and widening of the palpebral fissure. The pulse is irregular in tension and rhythm. Circulatory changes and muscular weakness are marked. Many of them have been treated for hyperthyroidism and some of them rendered worse by the further degeneration of the gland which has been induced by cytolytic serums.]

The average lapse of time between the appearance of non-hyperplastic goitre and toxic symptoms is 14·3 years. That the patient comes under observation three years later indicates that the onset is usually insidious. Nervousness, tremor, loss of strength and weight, as a rule, develop slowly, but may appear suddenly long before definite evidence of myocardial damage. The administration of iodin may cause the sudden appearance of those symptoms with myocardial insufficiency much as they might follow the prolonged drinking bout of an old toper who had not previously shown decided evidence of chronic alcoholism. In some cases the clinical aspect, as noted above, closely approaches that of exophthalmic goitre. However, the symptoms are less complex, less definitely associated, and except for a damaged heart less intense. There is much evidence to suggest that during the 14·5 years previous to the onset of definite toxic symptoms many of the cases of non-hyperplastic thyroid may be compared to the alcoholic tippler in that if the soil is right they develop arteriosclerosis, in many cases showing the combined picture of thyrotoxicosis and arteriosclerosis.

The development of a typical syndrome of Graves's disease in a case having a definite history of simple goitre means that a hyperplastic goitre has been superimposed upon the simple type.

The onset of exophthalmic goitre is, as a rule, relatively acute and the course of the disease fairly definite. The clinical picture early in the history is that of a toxin acting directly on the more vital organs, more notably on the central nervous and vascular system. Later it is made more complex by the interaction of those organs whose functions have been directly disturbed by the toxin. The order of onset of the most important symptoms based on the average of our series is as follows: (1) cerebral stimulation, (2) vasomotor disturbances of the skin, (3) tremor, (4) mental irritability, (5) tachycardia, (6) loss of strength, (7) cardiac insufficiency, (8) exophthalmos, (9) diarrhœa, (10) vomiting, (11) mental depression, (12) jaundice, and (13) death.

If the average course of the intoxication be represented by a curve the greatest height is reached during the latter half of the first year, and then suddenly drops to the twelfth month. In many instances it reaches the normal base-line during the next six months. More often it fluctuates with periods of exacerbation for the next two to four years. Secondary symptoms and exophthalmos may remain, but the active course only rarely continues over four years without distinct intermissions. Compare the striking resemblance of the character, order of onset, and course of this train of symptoms with that resulting from the heavy use of alcohol by a susceptible individual over a corresponding period of time. Near the crest of the curve any shock, operation, &c., that treats the patient to another drink may result in tremens or death.

In the average course after the first year the symptoms that may be attributed to long-continued intoxication rather than to a high degree of acute intoxication—that is, those from the more chronic types of heart, liver, and degeneration of the kidney—enter strikingly into the clinical picture. In attempting to construct a composite curve we find that the curves for those symptoms that we can readily attribute to a high degree of immediate intoxication from the thyroid drop, while the curves for those findings attributable to a long-continued intoxication of a lower degree gradually rise.

The various types of goitre should be treated both medically and surgically. Many goitres of the simple and mild exophthalmic type undoubtedly regress spontaneously, although various forms of medical treatment may hasten the recovery and restoration of the gland to an apparently normal condition in many instances, especially in the early stages of simple goitre.

Exophthalmic goitre is essentially a disease of a chronic character, presenting exacerbations and ameliorations of symptoms extending over a period of months or several years. After the first year the gland often undergoes a regression.

While this disease is amenable to surgical treatment by the removal of a large amount of the hypersecreting gland, it is by no means urgent surgery, and all patients, during periods of exacerbation, should be considered as medical cases. Surgery is indicated in the upwave of improvement. The majority of these cases can withstand thyroidectomy at the time they are seen by the surgeon. Extreme conditions, especially dilatation of the heart, may require medical preparation, and the operative interference following in cases resistent to treatment should be confined to injections of boiling water into the gland after Porter's[9] plan to hasten improvement. In most of the severe cases a ligation is made first of the left upper pole only. Should the reaction following this be severe the ligation of the right upper pole is indicated a week later, and thyroidectomy reserved until four months have elapsed, by which time these patients have made an average gain of 22 pounds, with great general improvement. However, if the reaction following the left ligation is not unduly severe, a partial thyroidectomy may be made at the second operation, the week following.

Ligation.—The ligation of vessels as an operative procedure was performed in the early part of the nineteenth century and later revived by Wölfler. The ligation of the superior thyroid arteries is made through a transverse incision over the centre of the thyroid cartilage. The incision is made through the skin and platysma muscles. Blunt dissection with spreading probe-pointed scissors exposes the inner border of the sternomastoid muscle, which is drawn outward. The anterior belly of the omohyoid muscle is next exposed, elevated, and drawn inward, which brings into view the upper pole of the thyroid with its vessels. A permanent ligature is passed around these veins and arteries, close to the gland or even including its tip. This prevents reversal of circulation by vessel-anastomosis, which occurs from high ligation of the artery. Injury to the nerve is not feared, as here the incision is made between the superior and inferior laryngeal nerves and the gland is easily approached. No drainage is necessary. According to the purpose of the operation, and to the condition of the patient, one or both sides may be ligated at the same time.

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[9] Porter: Journal of the American Medical Association, 1913, vol. lxi., p. 88.

Ligation of the inferior thyroid artery is made through a lower transverse incision between the insertions of the sternomastoid, and requires elevation of the lobe of the thyroid and exposure of the vessel at the point the ligature is applied, so that nerve-tissue may not be included. This operation is usually done only for those patients suffering from a severe relapse after a partial thyroidectomy. Operating thus in stages may be advisable in certain cases, especially of exophthalmic goitre. For example, the upper left pole may be ligated under novocain. Should severe reaction ensue, a few days later the right ligation is made from which there is less reaction. If the primary operation has been made without marked bad effect upon the patient the secondary operation of thyroidectomy can be done in about a week. In the cases in which only double ligation has been done at an earlier period the larger part of the gland may be removed at the end of four months. By this time the patients who have been under weight will have gained an average of 22 pounds, and the thyroidectomy can be made with safety.

Sympathectomy.—The Jaboulay operation is a cervical sympathectomy of the superior and sometimes of the middle ganglia and is employed in those cases in which the exophthalmos is marked, nervous symptoms are active, and the gland small. In such cases the superior thyroid vessels are often ligated in the same incision. This operation can be done with novocain as a local anæsthetic, but is preferably made with a general or combined anæsthetic. Incisions are made in the lines of the natural creases in the neck opposite the bifurcation of the carotid. The sternomastoid is drawn outward and a blunt dissection is made down to the jugular and carotid veins which are then drawn inward. The posterior sheath of fascia enclosing these vessels is opened that the vagus nerve may be kept under observation, since this nerve is bulbous above this point and might be confused with the sympathetic.

Under normal conditions the sympathetic ganglion is one-eighth to one-fourth of an inch wide. Many branches lead from it on either side. The connecting branches are divided, the upper part of the ganglion torn off or cut, and the lower portions of the nerve torn or cut off at the middle ganglion unless the middle ganglion is also removed.

Thyroidectomy.—The angular or bayonet incision is made for the removal of high-lying goitres which have developed in the upper pole of the gland. The best general exposure of the thyroid is through a low collar incision, commonly known as the Kocher incision, which includes the skin and platysma and extends laterally to the external jugulars. The skin with platysma is dissected upward, also downward, uncovering the sternohyoid muscles. These are separated by a vertical incision, which includes the fibrous capsule over the gland. Lateral traction, separating the two sternohyoid and also the sternothyroid beneath them, exposes the thyroid gland sufficiently and gives enough room for the removal of small goitres. However, in large and exophthalmic goitres it is necessary to divide the sternohyoid muscle in the upper part of the field over the thyroid cartilage. This is important, since when reunited it preserves the nerve supply and breaks the line of closure of skin and muscle, preventing a muscle-drawn scar which moves with deglutition. The sternohyoid can usually be retracted, but should be divided if it limits the working field. Many of the troubles and accidents in the surgery of goitre would be avoided if the preliminary exposure of the thyroid were adequate before proceeding with the gland itself.

The lateral veins are caught and divided between clamps. The gland is gently elevated with the hand, and under slight tension the vessels at the upper pole are caught and divided between two forceps. This is repeated on the anastomosing vessels close to the isthmus. The vessels at the lower pole are treated in the same manner, the gland being held in the hands of an assistant, who keeps up continual traction, gradually elevating and turning with the isthmus across the trachea, where the separation is made along the opposite lateral lobe. Few forceps are required in simple goitres, while the papillary and exophthalmic forms require many. However, in the excision of an exophthalmic goitre one must keep close to the gland, and it is well to divide the capsule along the lateral border, which is caught in many clamps and the gland more carefully enucleated, saving this capsule, which effectually protects the recurrent laryngeal nerves and also the parathyroids.

The anæsthetic of choice in most cases is ether. Complicated cases, however, may be best carried through the operation by the local use of 0·5 per cent. novocain solution, with the addition of a little adrenalin. Occasionally the combined use of a local with a general anæsthetic is advisable, a method which Crile has done much to popularise; the local anæsthetic relieving the pain necessitates less of the general anæsthetic to secure sleep.

In severe forms of Graves's disease the use of 1/200 grain of scopolamine with 1/6 grain of morphine one hour previous to operation is often a distinct advantage. Some patients seem to have an idiosyncrasy to the drug, and in such cases the operation must be postponed 24 hours to permit elimination. In all cases in which ether is used as the general anæsthetic 1/100 grain of atropin should be given half an hour before operation to maintain a dry trachea and pharynx during the operative procedure.

Mortality.—The great lowering of mortality following operation for exophthalmic goitre is due less to trivial details of technique than to the better judgment in the preparation of patients, the selection of a time, type, and extent of operation, and its division into stages, with varying intervals of rest. The high mortality of the past is no longer a determining factor against the surgical treatment. As many as 278 consecutive operations have been made on the thyroid between deaths occurring from the operation. The average operative mortality at present probably varies from 1 to 3 per cent. Relapse of some degree occurs in a small percentage of cases through the removal of too small an amount of the thyroid. Such cases should be reoperated upon.

The following is the report of a few interesting cases ranging from one to several years since operation.

Case 1 (*95443*).—Male, married, aged 29. Examined Nov. 13th, 1913. History: Onset of symptoms five months prior to examination—i.e., nervousness, tachycardia, exophthalmos, and loss of strength. Goitre had been noted for 15 months. Six weeks prior to examination tremor, dyspnœa, insomnia, and sweating developed. Symptoms steadily increasing. Loss of weight 12 lb.

Examination: Marked evidence of all the preceding symptoms; definite exophthalmos, bruits in superior thyroid vessels, dilated heart, pulse 110. Operation: Ligation of left superior thyroid vessels Nov. 20th, 1913, followed by thyroidectomy seven days later. Feb. 10th, 1914: Patient reported great improvement; had gained 20 lb. in weight, pulse 80, exophthalmos less marked, nervousness greatly reduced.

Case 2 (*94464*).—Male, married, aged 41. Examined Oct. 27th, 1913. History: Acute articular rheumatism five times. Ten months prior to examination the patient became nervous, with tremor, dyspnœa, palpitation, tachycardia, and loss of strength. Eight months later goitre and exophthalmos were noted. Examination: Marked exophthalmos; 40 lb. loss in weight; bruits in superior thyroid arteries. Operation: Thyroidectomy on Nov. 3rd, 1913. Feb. 10th, 1914: Patient reported himself cured; a gain of 25 lb. in weight, pulse 72, exophthalmos greatly improved, only slight nervousness.

Case 3 (*94372*).—Female, single, aged 20, height 5 ft. 6 in. Examined Oct. 25th, 1913. History: Nervousness, tremor, dyspnœa, palpitation, tachycardia, loss of strength, sweating, and prominence of the eyes for one year. Ten months previously there was an attack of vomiting and diarrhœa, following which the patient was in bed for four months and lost 50 lb. in weight. She then improved until one month before examination when she began vomiting and exhibited evidence of increased intoxication. Examination: Definite exophthalmos, marked thrills and bruits in the superior thyroid vessels, pulse 130. Operation: On Nov. 3rd and 10th, 1913, the thyroid vessels were ligated. Feb. 10th, 1914: The patient reported steady gain in strength, increase in weight of 10 lb., and general improvement.

Case 4 (*94806*).—Female, married, aged 26, height 5 ft. 8 in. Examined Nov. 2nd, 1913. History: No children, goitre for six years. All the features of nervousness, tremor, palpitation, tachycardia, loss of strength, diarrhœa, exophthalmos, and extreme intoxication existed during the first year. Since then symptoms fluctuating but never returning to normal. She was able to do some housework. Examination: First degree of exophthalmos, thrills and bruits in both thyroid vessels. The pulse was 150; heart dilated; she had lost 23 lb. in weight. Operation: Thyroidectomy on Nov. 7th, 1913. On Feb. 13th, 1914, the patient was reported "almost well"; pulse 78; a gain in weight of 11 lb.

Case 5 (*78726*).—Female, single, aged 20. Examined Jan. 18th, 1913. History: Five months previously to examination she developed symptoms of goitre; nervousness, dyspnœa, aplpitation, tachycardia, vomiting, diarrhœa, insomnia, sweating, and exophthalmos. Symptoms steadily progressive. Examination: Acute intoxication, definite Stellwag, marked thrills and bruits in the superior thyroid vessels, heart dilated, pulse 120. Operation: Jan. 27th, 1913, ligation of the left superior thyroid vessels; Feb. 1st, 1913, thyroidectomy. On Feb. 10th, 1914, the patient was reported cured. There had been a gain of 35 lb in weight, eyes were normal, pulse 85, and very little nervousness.

Case 6 (*77188*).—Female, married, aged 27. Examined Dec. 10th, 1912. History: No children, always well, goitre for 10 years For the past two years she had noted enlargement of goitre and had developed nervousness, tremor, dyspnœa, palpitation, tachycardia, loss of strength, insomnia, sweating, and exophthalmos. Steady increase in severity of symptoms. Examination: Pulse 130, definite exophthalmos, thrills and bruits in superior thyroid vessels, cardiac dilatation and other evidences of acute intoxication. Operation: On Dec. 17th and 24th, 1912, the superior thyroid vessels were ligated. On Feb. 22nd, 1913, patient returned for thyroidectomy. On Feb. 10th, 1914, a report of great improvement was obtained; 35 lb. gain in weight, pulse 76, eyes nearly normal. Able to do customary work.

Case 7 (*76360*).—Female, married, aged 42. Examined Nov. 20th, 1912. History: One child 1 year old. Goitre developed following childbirth. Symptoms: nervousness, tremor, dyspnœa, palpitation, loss of strength, sweating, and exophthalmos. Acute condition lasted three months. After that slow improvement of symptoms. Examination: Definite exophthalmos, thrills and bruits in superior thyroid vessels, slight cardiac dilatation, pulse 116, 40 lb. loss in weight. Operation: Thyroidectomy Jan. 8th, 1913. On Feb. 10th, 1914, patient reported great improvement, 30 lb. gain in weight, pulse 80, eyes nearly normal. She is doing her customary work.

Case 8 (*71815*).—Female, single, aged 47, height 5 ft. 2 in. Examined August 8th, 1912. History: Fifteen months ago pulse 150, tremor, nervousness, loss of weight, vomited a few times. Patient in bed one month. Entire attack lasted three months, very severe. Taught school all last year but did not regain weight or strength entirely; tremor remained. In the past month symptoms returned with loss of weight from 135 lb. to 110 lb., nervous and weak; not confined to bed, but has been up and down. Examination: Showed first degree of exophthalmos, pulse 110 to 120, left heart slightly dilated. Operation: August 22nd, 1912, ligation of left superior thyroid artery; 28th, ligation of right superior thyroid. On May 18th, 1914, patient reported herself strong, able to work, not nervous or excitable, and weighing 150 lb.

Case 9 (*A67678*).—Female, married, aged 37, height 5 ft. 2 in. Examined May 10th, 1912. Three children, youngest 6 months old. History: Noticed small lump right side of neck for 10 years; no symptoms until three months ago, when she developed a rapid heart action, fatigue, nervousness, and loss of weight. One month ago vomited everything swallowed from 7 to 10 days. Severe diarrhœa for three days six weeks ago. Goitre has grown very rapidly since February. Average weight 125 lb.; weighed 88 lb. three weeks ago. Irritating cough with expectoration. Examination: Showed second degree of exophthalmos, thrills, and bruits in both superior thyroid vessels. Pulse 156. Present weight 80 lb. Operation: May 22nd, 1912, ligation of both superior thyroid arteries. On May 11th, 1914, patient reported herself much improved in general health and strength; tremor almost disappeared, pulse-rate 70 to 80. Present weight 127 lb.

Case 10 (*25098*).—Female, married, aged 28. Examined June 21st, 1909. History: Three months prior to examination patient developed hyperthyroidism, nervousness, protrusion of eyes, cardiac dilatation; pulse 140, 25 lb. loss in weight. Symptoms repeatedly progressing. Examination: Definite exophthalmos, bruits in thyroid vessels. Operation: June 24th, 1909, thyroidectomy. On Feb. 10th, 1914, patient reported herself cured; had gained 50 lb. in weight, eyes improved, pulse 84, doing customary work.

Case 11 (*22288*).—Female, married, aged 26. Examined April 8th, 1909. History: One child, aged 6 years. Six months previously to examination goitre was noted with symptoms of nervousness, tremor, exophthalmos, tachycardia, dyspnœa, steadily progressing. Examination: Exophthalmos, marked bruits in superior thyroid vessels, pulse 130, 20 lb. loss in weight. Operation: April 14th, 1909, ligation; Oct. 4th, 1909, thyroidectomy. On Feb. 10th, 1914, patient had greatly improved; 20 lb. gain in weight, pulse 90, doing customary work.

Case 12 (*20797*).—Male, single, aged 40. Examined March 2nd, 1909. History: Exophthalmos developed three years prior to examination. Two years later symptoms appeared of nervousness, cardiac dilatation; 20 lb. loss in weight. Goitre not noticed. Examination: Pulse 120, definite goitre, and marked intoxication. Operation: March 6th, 1909, thyroidectomy. On Feb. 10th, 1914, the patient was reported as being entirely well and doing more than the usual amount of work. Pulse normal, eyes improved, 40 lb. gain in weight.

Case 13 (*19390*).—Female, married, aged 53. Examined Jan. 23rd, 1909. History: No children. In 1906, patient developed nervousness, tremor, tachycardia, palpitation, dyspnœa, œdema, diarrhœa, and loss of strength. One year prior to examination exophthalmos appeared; six months later goitre. Symptoms severe during first year, fluctuating since then. Examination: Marked Stellwag, arrhythmia, pulse about 100. Operation: Jan. 23rd, 1909, thyroidectomy. On Feb. 10th, 1914, patient greatly improved and doing customary work. Pulse 80, eyes improved, gain in weight.

Case 14 (*18484*).—Female, married, aged 20. Examined Dec. 19th, 1908. History: Marked exophthalmos in 1904. One year later goitre, nervousness, tremor, and dyspnœa; symptoms gradually progressing. Examination: Marked exophthalmos, cardiac dilatation, pulse 120, acute intoxication. Operation: Jan. 7th, 1909, thyroidectomy.

On Feb. 10th, 1914, the report stated that there was great improvement; gain in weight 25 lb., pulse 82, eyes improved. Doing her customary work.

Case 15 (*G5228*).—Male, aged 47. Examined August 25th, 1905. History: Mild attack eight years prior to examination. Seven years later goitre was noted, with nervousness, exophthalmos, and pulse 140. Symptoms most severe the past four months. Examination: Typical exophthalmic goitre. Operation: August 28th, 1905, thyroidectomy. On Feb. 10th, 1914, the patient reported that he was cured. He had gained 40 lb. in weight; eyes, heart, and pulse normal; no nervousness.

Case 16 (*G4782½*).—Male, aged 30. Examined May 15th, 1905. History: Patient had had symptoms of tachycardia, nervousness, and tremor for a year and a half. About eight months prior to examination exophthalmos and goitre were noted. Symptoms steadily progressive. Examination: Definite exophthalmos, enlarged thyroid, pulse 130. Operation: May 16th, 1905, thyroidectomy. On Feb. 10th, 1914, the patient was reported to be cured; 38 lb. in gain in weight, pulse and heart normal, eyes moderate.

Case 17 (*P2617*).—Female, married, aged 44. Examined May 11th, 1905. History: One child 16 years of age; goitre of several years' duration, increased during past year with nervousness, protrusion of eyes, palpitation, and tremor. Examination: Firm thyroid, heart dilated, pulse 120. Operation: May 13th, 1905, thyroidectomy. Feb. 10th, 1914, patient cured; gain of 35 lb. in weight; pulse and heart normal; eyes greatly improved. She is doing her usual amount of work.

Case 18 (*P1657*).—Female, married, aged 30. Examined June 11th, 1904. History: One child 7 years of age; goitre, exophthalmos, tachycardia, and tremor for two years. Examination: Moderate exophthalmos, slight tremor, pulse 100. Operation: June 15th, 1904, thyroidectomy. On Feb. 10th, 1914, the patient was reported to be cured; pulse and heart normal, eyes normal, no nervousness, and gain of 20 lb. in weight.

It may be well to note here the effect of pregnancy during the progress of the disease or following the operation. A few of these patients are in much better health during pregnancy; however, in the majority the symptoms are worse. I believe that the risk to life incident to pregnancy and labour is less than from abortion, which rarely should be produced, since most of these patients improve after childbirth.

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TYPHOID PERFORATION.[1]

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IN the two provinces of Quebec and Ontario in Canada there were during the five years 1908–1912 inclusive 6011 deaths from typhoid fever, an average of 1202 deaths per annum. In the province of Alberta during the five years 1909–1913 inclusive there were 852 deaths from typhoid fever, an average of 170 per annum. In the United States of America during the four years 1909–1912 inclusive there were 45,833 deaths from typhoid fever, an average of 11,458 deaths per annum. The average death-rate was a little over 20 per 100,000 of population.

The responsibility for this enormous waste of human lives cannot be laid at the door of the medical profession. It is a reflection upon the humanitarianism and business acumen of the laity in these countries. Those who succumb to typhoid are among the most promising in the country. The greatest susceptibility is from 15 to 25 years of age. It has again and again been proved to a demonstration that pure water and efficient drainage prevent typhoid. Typhoid can be arrested by an Act of Parliament and by municipal legislation. Regarded as a purely economic question the money spent in removing the causes of typhoid would earn larger dividends than if invested in the best bonds in the world. Why should not municipalities, towns, and cities be made as responsible financially for the loss of time and loss of life from a preventable disease like typhoid, as are the transportation companies by land and water made responsible for preventable accidents.

Typhoid is still with us, however, and it is still attended by a mortality from several complications, 75 per cent. of which are surgical. It is to one of the most important of the latter that I would ask your attention. One cannot approach the subject of surgical complications of typhoid without an appreciation of the influence of W. W. Keen, who brought this subject so clearly and forcibly before the profession in his book published in 1898.

The incidence of perforation varies in different years and in different epidemics. In Germany perforation is less common than in America. Recent figures embracing 9713 cases collected in England, Canada, and the United States show that more than one-third of the deaths from typhoid are due to perforation. At Johns Hopkins Hospital there were 43 perforations in 1500 cases, or 1 in 38. In the Pennsylvania Hospital there were 50 perforations in 1948 cases, or 1 in 39. In the Royal Victoria Hospital, Montreal, there were 83 intestinal perforations in 2917 cases, or 1 in 35, and 2 perforations of the gall-bladder. In the Montreal General Hospital there were 110 perforations in 2494 cases, or 1 in 22½. In the Royal Victoria and Montreal General Hospitals it is sometimes quite impossible to admit all the cases of typhoid that apply. Only the more severe cases are taken in. Again, quite a number of cases are admitted after perforation has occurred. In 15,224 collected cases there were 544 perforations, or about 1 in 31½. Statistics show perforation to be more common in men than in women. The reason is not obvious. In children perforation is rarer than in adults.

Pathogenesis.—Chomel remarks that "the accident is sometimes the result of ulceration, sometimes of a true eschar, and sometimes it is produced by the distension of the intestine, causing the rupture of the tissue weakened by disease." In a specimen in the McGill museum there are 10 perforations in the ascending colon and sigmoid, probably from distension. I have usually found the perforation near the base of a generally well-defined ulcer. In size it varies from a very small pin-point hole to an opening of the size of a lead pencil. Only rarely is it larger. It is always situated nearly directly opposite the mesenteric attachment.

While it is true that the perforation may occur at any point in the stomach, the small or large intestine, or in the appendix vermiformis, yet, fortunately for the patient and the surgeon, it is found somewhere in the terminal 2 feet of the ileum in an overwhelming majority of cases.

Prognosis.—That a typhoid perforation not closed by the surgeon is always a fatal complication is as a rule a true statement. The only exceptions are those in which a perforation of the large bowel occurs between the layers of its mesenteric attachment. When this occurs an abscess develops extraperitoneally, and may subsequently be opened. In the single case in my series in which this occurred the fistula gradually healed. It is probable that all cases in which a perforation of the small intestine occurs into the peritoneal cavity prove fatal unless recognised and the opening closed. The duration of life after perforation in 134 cases collected by Fitz was as follows:—

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[1] A paper read before the Clinical Congress of Surgeons of North America, London, July 29th, 1914.

Died on the first day	37·3 per cent.
,, ,, second day	29·5 ,,
,, in the first week	83·4 ,,
,, ,, second week	9 cases.
,, ,, third week	4 ,,
,, in 30 days	1 case.
,, ,, 38 ,, ...	1 ,,

Diagnosis.—It is easy to establish the fact that a considerable percentage of the mortality in typhoid is due to perforation of the intestine, and also that a goodly number of these cases may be saved by early recognition of the lesion and its closure. The great difficulty is the diagnosis. To get the best results the accident must be recognised early and appropriate treatment be instituted promptly. Here is the great difficulty, the question of early diagnosis. Some of our standard text-books are misleading in their remarks on the diagnosis of typhoid perforation. If it will not be considered too presumptuous for a colonial to criticise writers in the great educational centres of Great Britain I would like to say that when a recent edition of Choyce's "Surgery" says that the symptoms that suggest perforation are the sudden onset of acute pain referred to the umbilicus or to the right lower half of the abdomen, with tenderness on pressure and muscular rigidity, most marked in the right lower quadrant of the abdomen, and that there are nausea and vomiting and other symptoms of acute infection, and when Howard in his "Practice of Surgery," issued this year, says the symptoms of typhoid perforation are sudden, acute abdominal pain with collapse and fall in the temperature, they fail to appreciate the difficulties that surround the question of the diagnosis of typhoid perforation. The occurrence of perforation is but seldom indicated by such well-marked, striking symptoms. Furthermore, a fatal peritonitis may develop in typhoid without any perforation discoverable at necropsy as reported in the Munich necropsies and in various medical journals.

The first indication that a perforation has occurred is usually pain. It was present in 75 per cent. of this series of 83 cases and absent in 25 per cent. 75 per cent. of them had either sudden crampy pain or sudden persistent pain in the following regions mentioned in order of frequency: generalised, right lower quadrant, umbilical zone, left lower quadrant, epigastrium, and left hypochondrium. In 25 per cent. of these cases the pain was generalised or in the right or left lower quadrants. Often the pain will not be severe enough to impress upon the nurse the need of sending for the medical man unless she has been specially trained in a typhoid ward. An important point in the training of a typhoid nurse is to teach her to send for the interne whenever a typhoid patient complains of abdominal pain. In 25 per cent. of cases not having pain at onset the following conditions were found: in 11 per cent. toxæmia obscured all signs; in 4 per cent. the condition was obscured by severe concurrent hæmorrhage; 4 per cent. were not diagnosed; 1 per cent. had chills; 2 per cent. had rigidity; and 4 per cent. had vomiting. In regard to time, 62 per cent. occurred at night and 38 per cent. in the day time; 4 per cent. of the cases had definite profuse sweats immediately after the perforation.

The symptom that I would place second because of its constancy and significance is change of expression. The change of appearance in a majority of the cases was quite evident. 65 per cent. showed a very definite alteration, 28 per cent. a gradual change, and 7 per cent. no change. This change in appearance was manifested in a picture of suffering from pain, a sudden pallor, a change from a feeling of comfort to that of distress, a restlessness, cardiac failure, vomiting, painful defæcation, loss of rallying power after hæmorrhage, a chill, profuse sweat, general malaise, an unaccountable change in general condition for the worse, or sometimes a feeling on the part of those in attendance that something had happened that they could not account for.

Tenderness was present in some degree in 88 per cent. of the cases and absent in 12 per cent. In 50 per cent. it was generalised; in 20 per cent. limited to the lower abdomen; in 16 per cent. to the right lower quadrant; in 9 per cent. to the left lower quadrant; in 2 per cent. to the right upper quadrant; in 1 per cent. to the left upper quadrant; in 1 per cent. to the upper abdomen; and in 1 per cent. to the umbilical zone. As for time of appearance, in 50 per cent. of the cases it came with pain at the onset; in 20 per cent. within the first hour; in 16 per cent. within the second hour; in 5 per cent. within the fourth hour; in 2 per cent. within the eighth hour; in 2 per cent. within the tenth hour; in 2 per cent. within the twelfth hour; and in 1 per cent. within the twenty-fourth hour.

Rigidity.—85 per cent. of the cases showed distinct rigidity, and 15 per cent. did not. Of this 85 per cent. showing rigidity, 44 per cent. showed it from onset of trouble; 22 per cent. within the first hour; 8 per cent. within the second hour; 4 per cent. within the third hour; 6 per cent. within the fourth hour; 6 per cent. within the sixth hour; 8 per cent. within the twenty-fourth hour; and 2 per cent. within the seventy-second hour. As to location, 39 per cent. showed generalised rigidity; 22 per cent. rigidity of the right lower quadrant; 22 per cent. of the lower half of the abdomen; 8 per cent. of the right upper abdomen; 5 per cent. of the left upper abdomen; and 4 per cent. of the left lower abdomen. In a very few instances the term "resistance" would more correctly designate the condition present.

Little or no value can be attached to the absence of liver dulness. If the area of liver dulness has been noted from day to day and then suddenly disappears in association with abdominal pain, it is significant. It is valueless in a distended abdomen. It was obliterated in 45 per cent., not changed in 16 per cent., and not mentioned in 39 per cent.

The fall in temperature so often spoken of rarely occurred. Occasionally there was a fall of one or two degrees in six or eight hours, but only in a few cases did any spectacular drop, such as from 103° F. to normal, take place. In one case the temperature rose from normal to 104° in two hours.

The pulse changes were always clear. A rapid change from slow and good volume to rapid and small often occurred. In 95 per cent. of the cases the pulse quickened. Of the change in blood pressure I cannot speak.

Those who have seen many typhoid perforations will appreciate Fitz's statement that perforation of the intestine in typhoid fever may take place without any suggestive symptoms, and that suggestive, even so-called characteristic, symptoms may occur without any perforation having taken place.

In the text-book perforations diagnosis is easy, but if we are to save a large percentage of these unfortunate patients we must detect the accident in its most insidious form.

Again, it is not necessarily a reflection on the diagnostic skill and sound judgment when the abdomen is opened after careful consideration of the symptoms present by two or three clinicians and no perforation is found. It would seem that this may happen occasionally if conscientious attempt is made to recognise perforation as soon as it occurs. One case is on record in which the abdomen was opened twice in the same patient without finding any perforation. The same abdomen was later opened a third time, the perforation found, and the patient's life saved. We cannot always afford to wait in these cases until the diagnosis is absolutely definite and assured.

What symptoms call for immediate abdominal incision, or rather, what are the minimum of signs that may demand surgical intervention? Persistent pain, definite change for the worse in the expression of the patient, tenderness (either abdominal or rectal), rounding up of the abdomen, and increased resistance to pressure—if these symptoms are present, even if the temperature and pulse are not decidedly altered nor vomiting present, the likelihood of a perforation is very great.

Local anæsthesia has very materially altered our attitude towards early operations. It is no longer necessary to administer a general anæsthetic. The abdomen can be quite well opened under local anæsthesia without causing the patient any pain whatever. The closing of a typhoid perforation is one of the simplest operations in surgery—one that can quite well be performed by anyone capable of carrying out a perfect surgical technique. A 1 per cent. solution of novocaine, with the addition of two drops of adrenalin to the drachm, is thoroughly satisfactory, and may be used freely. Inject first the skin and subcutaneous tissue, and then with a short needle one inch long penetrate the deeper muscular layers along the line of incision. Either a gridiron incision or one along the outer border of the right rectus answers admirably. The perforation is nearly always found in the terminal 12 or 24 inches of the ileum. It is very easily found. A couple of through-and-through sutures usually suffice to close the opening, and then one or two rows of fine Lembert suture complete the operation on the intestine. One should always look for a second, or possibly a third, perforation. These are seldom found, but not uncommonly some of the ulcers in the neighbouring portion of the ileum will present a very thin necrotic-looking base. It is a good practice to enfold such with a single row of Lembert sutures as a precaution against further perforation occurring after the abdomen is closed. Resection of an ulcerated portion of intestine in typhoid is rarely indicated, and should be reserved for the skilled operator and unusually threatening conditions.

When the abdomen is opened the presence of perforation is generally made clear by the presence of fluid, lymph, or the escape of a little gas. Should none of these evidences be observed do not close the abdomen without examining at least the terminal 2 feet of the ileum. It may be that a small pinhead perforation is temporarily closed by a tag of omentum. I have found this condition present in three of my cases. Of course such cases give a most favourable prognosis.

The percentage of recoveries is gradually increasing. Von Leyden in 1884 suggested that the only rational way of treating perforations of the stomach and intestines was surgical. In the same year Miculicz closed a typhoid perforation. The patient, a man 40 years of age, recovered. Fourteen years later Keen collected 83 cases with a recovery percentage of 19·36. In the Royal Victoria and Montreal General Hospitals 140 perforations have been closed and 38 have recovered, or 27·14 per cent. These figures include the work of all the surgeons attached to the hospitals. The figures are not large, but I think they represent 38 lives saved. The other cases of perforation were not operated upon for three reasons, chiefly—viz., not diagnosed; desperate conditions that offered no chance of success; and refusal of patients, parents, or guardian to allow any operation.

It is sometimes very discouraging—viz., my first six cases died, and then I was about ready to give it up. I succeeded in saving my seventh case, and from that time recoveries have occurred more and more frequently. From January, 1909, to June, 1914, I closed 22 typhoid perforations and 11 recovered, or 50 per cent. An important point is to let the house staff feel that it is a reflection on their professional attainments to overlook a perforation. When once they really appreciate that fact cases are sent to the operating room promptly.

Montreal, Quebec.

THE TREATMENT OF INOPERABLE CARCINOMA OF THE UTERUS BY APPLICATION OF HEAT.[1]

BY J. F. PERCY, M.D.

At the present time the treatment of cancer may be easily differentiated into two classes. The first of these is the operable, which applies almost wholly to early manifestations of the disease; and the second, the inoperable, which concerns us most at this time.

Inoperable carcinoma may be attacked through attempts to destroy the possible cause by vaccines, toxins, serums, &c.; again, by attempts to change the pabulum by which the disease is permitted to progress, such as may be suggested by the theory advanced by Ehrlich under the name of athrepsia. From the standpoint of the experimental laboratory the above theories and the work based upon them widen our mental horizon and stimulate our imagination regarding the whole field of cancer research; but we cannot apply them now, because their value is yet undetermined, and the particular pabulum, or foodstuff, which Ehrlich presupposes for growth, is not fully understood. We do know, however, that the cancer cells can be destroyed by the same agents that will destroy the normal cells; among these may be mentioned caustics, chemicals, actual cautery, and freezing. Our problem is to find in some manner an agent which will affect the physical properties of the growth in such a way as to kill the cancer cell; if this cannot be done completely, then to retard or inhibit its growth, permitting normal cells to retain their growth and function. Certain agents have been found to which carcinoma is more vulnerable than are normal cells. One of these is radio-activity in its various forms. Unfortunately, the area of application of this agent is limited to such a degree that we are compelled to search for some other element of wider application.

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[1] A paper read before the Clinical Congress of Surgeons of North America, London, on July 30th, 1914.

In our study of agents that will inhibit and destroy carcinoma the first that appeals to us is heat. The history of the ancient and modern use of this method of treating carcinoma is neither unimportant nor insignificant; only our manner of using it has been at fault. In 1905 Paul Ehrlich suggested to M. Haaland[2] the greater susceptibility of certain strains of mixed, inoculable, malignant material to heat. The experimental work, based upon this fundamental intimation of Ehrlich regarding heat, has not only been interesting but of great practical value. Haaland showed that carcinoma cells are more vulnerable to heat than are those of sarcoma, and die after an exposure of half an hour to 44° C. (111·2° F.). It has been demonstrated by Clowes[3] that all tumour cells exposed to a temperature of 45° C (113° F.) in vitro die. Loeb[4] has demonstrated the death of sarcoma cells when exposed to a temperature of 45° C. (113° F.) for 30 minutes, while Clowes[5] and Baeslack[5] place it at 44° C. (111·2° F.) for the same period of time. Jensen[5] places the vulnerability of cancer cells at 47° C. (116·6° F.) for five minutes. Lambert[6] has shown a definite relationship of damage between the degree of heat and the time of exposure to both normal and malignant cells. His investigations have demonstrated that sarcoma cells are destroyed when exposed to a temperature of 42·5° C. (108·5° F.) for from 24 to 48 hours, 43° C. (109·4° F.) for 6 hours, 44° C. (111·2° F.) for 50 minutes, and 46° C. (114·8° F.) for 20 minutes; while normal connective tissue cells survive these various exposures. M. Doyen has shown that the death-point of carcinoma cells is 55° to 56° C. (132° F.). An identical degree of heat is necessary to destroy the micrococcus neoformans, which he believes is the etiological factor in cancer. E. Vidal[7] in a most interesting observation noted the arrested development of tumours in four patients, with a temperature above 40° C. (104° F.). Fearing that his experience in these cases was a mere coincidence, he daily exposed tumour-bearing mice to temperatures above normal, and found not only that their tumours showed degenerative changes but that the mice lived longer. A spontaneous lymphosarcoma which developed in a bitch also diminished rapidly and finally disappeared when the temperature rose to 40·8° C. (105·4° F.) after the puncture of the zone of Richet. These observations and experiments of Vidal are startling in their significance, and give tremendous point to his statement that all the methods for treating carcinoma which have come out of the experimental laboratory have no beneficial influence whatever unless the reaction which they initiate is accompanied by fever. This is true of all vaccines and toxins, such as the nectrianin of Bra, Doyen's micrococcus neoformans,[8] the toxins of Coley[9] and the vaccine of Otto Schmidt. The experiments of Bier[10] show that the intravenous injection of foreign defibrinated blood raises the body temperature, and this is true also of the use, in the same way, of the colloids of gold, silver, and copper. The observation of the older physicians, who noted the disappearance of malignant activity following infection by erysipelas, claims our interest in a new way. Pierre Delbert has confirmed the experiments of Vidal on the deleterious action of increased body temperature in cancer.

Reduced to the simplest statement, our problem in inoperable cancer has always been twofold: first, to get rid of the gross mass; and second, to destroy the progressive metastases. The second point usually loses much of its significance in the overshadowing presence of the primary great mass. If what Vidal and others tell us is true, it is a rational procedure to attack these morbid masses with heat. But a method tending to raise the temperature of the whole body above 40° C. (104° F.) is impracticable, because dangerous. In addition, it is uncertain, and we cannot regulate it. We are compelled, then, to find some method more local in its application which will exert the greatest destructive process on the gross mass of cancer and endanger, to a minimum degree, the normal connective tissue cells.

The only agents so far found worthy of consideration are hot air, hot water, steam, electro-coagulation, fulguration, and actual cautery. Hot water, hot air, and steam are shown by Doyen to be of no practical value because of their slight penetration. Electro-coagulation affects the tissues for a depth of 5 to 8 cm. in two minutes. The rapidity of action, the difficulty of control of the electrode, especially in the cavities, the complicated apparatus necessary, together with the refinement of technic and specialised judgment required of the operator, make this method impracticable in the treatment of the cavity carcinoma. The de Keating-Hart method of fulguration[11]—i.e., the sparking from a high-frequency current of high tension after the surgical removal of the bulk of the mass, especially when superficial—is worthy of notice in this connexion. In the hands of the originator, by preventing relapses, it has undoubtedly improved the statistics of operative methods in advanced cancer over those where cutting procedures alone have been employed. Durig[12] and Grau, however, insist that the only beneficial result from fulguration is due alone to the heat and not to any specific action on the tissue cells. It is only just to the originator of this method of using high-frequency currents to state that he denies that this is the mode of action in his method. He insists that where heat is obtained in this way it is due to the reduction in the length of the spark, replacing the tension by thermic effects, which is a mistaken use of fulguration. The methods just enumerated, in the hands of their originators, have added much to our knowledge of cancer therapy. But the apparatus required to carry out the technic is extensive, complicated, and expensive. In addition, to be effective it demands not only specialised knowledge, but a refinement of judgment that requires more than the average experience.

In the way of comparison it has been my pleasure to suggest a practical system of applying heat in otherwise inoperable carcinoma of the uterus which has none of the objections that can, with reason, be urged against the methods already enumerated.[13]

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[2] Haaland, M.: Imperial Cancer Research Fund, Third Report, 1908.

[3] Clowes, G. H. A.: Brit. Med. Jour., December, 1906.

[4] Loeb, Clowes, Baeslack, Jensen, quoted by Clowes, Annual Report of New York State Cancer Laboratory, 1910.

[5] Ibid.

[6] Lambert, Robert A.: Demonstration of the Greater Susceptibility to Heat of Sarcoma Cells as Compared with Actively Proliferating Connective-Tissue Cells. Journal of the American Medical Association, Dec. 14th, 1912, p. 2147.

[7] Vidal, E.: Travaux de la Deuxième Conférence Internationale, pour L'Étude du Cancer, Paris, 1911, p. 160.

[8] THE LANCET, April 7th, 1906, p. 964.

[9] THE LANCET, July 17th, 1909, p. 173.

[10] ier; Deutsche Medicinische Wochenschrift, July 18th, 1907, No. 29.

[11] De Keating-Hart: Pathogenesis and Treatment of Cancer, Paris, Section V., Therapeutics xv., Seventeenth International Congress of Medicine, London, 1913, pp. 273–294.

[12] Durig, A., and Grau, A.: Der Energieumsatz bei der Diathermie, Biochemische Zeitschrift, 1913, xlviii., 480. Quoted in the Journal of the American Medical Association, May 31st, 1913, p. 1707.

[13] The Results of the Treatment of Cancer of the Uterus by the Actual Cautery, with a Practical Method for its Application. The Journal of the American Medical Association. March 9th, 1912, vol. lviii., p. 696. A Method of Applying Heat Both to Inhibit and Destroy Inoperable Carcinoma of the Uterus and Vagina. Surgery, Gynecology, and Obstetrics, September, 1913, p. 371.

The penetration of heat by this method can be definitely, although perhaps crudely, determined and regulated. Where the malignant process is at all accessible the method has almost no limitations. The required apparatus is not only easily portable, but also inexpensive. I refer to the development of heat through a most efficient electric heating iron, which can be perfectly regulated by means of a rheostat when applied to the involved tissue. With this electric heating iron and my water-cooled speculum and the vaginal dilator a maximum penetration and dissemination of heat is obtained in the involved structures. More than this, the low degree of heat which my experiments show to be more effective than the intense heat already mentioned can be maintained accurately. This low degree of heat does not burn up the cancerous mass but merely makes it so hot that the hand of the surgeon, encased in a medium-weight rubber glove, cannot hold it. When this degree of heat is reached and maintained for from 10 to 20 minutes the cancer cells are absolutely killed, while the normal tissue cells are not injured. The important thing is not to convert the pathology into charcoal. The charcoal or carbon thus formed inhibits the further dissemination of heat not only through the cancer mass but beyond. More than this, when the pathology is converted into charcoal drainage is prevented for a number of days. This permits of the absorption of a larger quantity of broken-down cancer cells than the average of these patients can tolerate, and many of them die as a result of this mistaken method of applying heat. Carbonisation is produced in a few minutes by a cautery heated to a bright cherry-red colour. Carbon inhibits the dissemination of heat. To overcome this still greater degrees of heat are required, which are extremely difficult to control, endangering the rectum, the bladder, and the ureters. In another publication[14] I have given the details of some experimental work which well illustrate the practical application of this very important factor. The heating iron, when used through the water-cooled speculum, should not be hot enough to scorch a pledget of white cotton if laid on the heating iron even for half an hour. No smoke or smell of burning tissues should issue from the speculum, as would occur if they were being carbonised. The ear placed near the speculum should hear only a gentle simmer or bubbling, while the heating head is in the diseased mass.

My experimental work, and the operation itself, demonstrate that when this "cold iron" is applied to the affected tissues, not only is there much less destruction of normal cells, but a far greater penetration of heat, sufficient to kill carcinoma. Cancer is destroyed when the temperature in the mass is raised to 50°–55·5° C. (122°–131·9° F.), while the vitality of normal tissues is not changed until the temperature exceeds 55° to 60° C. (131° to 140° F.). The basic idea, then, of this treatment—and this cannot be too often emphasised—is not cauterisation, but the production and dissemination of heat in the gross primary mass of cancer. There is no other method or technic familiar to me that will influence in a destructive way so great an area of malignant tissue with a minimum amount of harm to the uninvolved structures. This technic, in a tremendously effective way, destroys the primary malignant focus. With this accomplished, the newer methods, especially the X ray, that have been shown to be of supreme value in the destruction of the small isolated foci, in or just outside of the pelvis, make a combination of effort in the management of these otherwise hopless cases most promising in its possibilities. From my experience, I am convinced that it is not always best to attempt to destroy at one sitting a large mass of carcinoma. These patients are rarely in the condition which invites long anæsthesia. The application of the heat to a degree which devitalises the major part of the exuberant overgrowth and rids the patient of her local focus of mixed infection produces within two weeks a surprisingly beneficial result. This is especially noticeable if cachexia has at all been a marked symptom. A second or even third application of heat is not only safer, unless the involved structures are small, but it gives the operator a much better opportunity to reach finally the outermost confines of the disease.

When my technic in the application of heat in these cases is decided upon, I would strongly advise against the use of the curette or other operative measures, for the reason that the heat is distributed through the medium of the pathological overgrowth which we wish to destroy. Heat does not encourage the extension of metastases, while the curette and knife do. Again, scar tissue is not formed after the use of the curette, but it is the usual sequel after the application of the heat, and I have yet to observe the redevelopment of cancer in cicatricial tissue. Where the surgeon believes that a modern total hysterectomy should be the operation of choice in the less extensive forms of uterine carcinoma, I know of no more rational procedure than the methods here outlined, which should precede the final operation at least by three or four weeks. In a personal case, where this treatment was applied to an active, stinking, bleeding, vegetative-like mass springing from the craterous edges of a practically destroyed cervix uteri, no evidence of carcinoma was found on serial section eight months afterwards, when the uterus and cervix were removed through the abdomen.

I shall leave the statistics of my results in the treatment of inoperable carcinoma for a future paper. All that may be said at this time is that I believe that a large number of cases, if not practically hopeless when first presenting themselves for treatment, will give approximately 50 per cent. remaining free from recurrence over five years. In addition, my work along this line convinces me that the limits of benefits to be obtained by the application of heat in inoperable carcinoma have not yet been reached. I am working out a method by which the amount of heat entering both the pathological and normal tissues can be accurately gauged. With this, the degrees of heat in the tissues at various distances from the heating head can also be determined. This will make it more definitely and accurately certain that the required temperature known to destroy cancer is entering the parts involved. The management of complications, the most serious of which is the prevention of rather late hæmorrhages, is a matter of importance. In 50 cases this sequel has followed in two private and in two clinic cases. Only one of these, a private case, has died from the hæmorrhage. It will probably prove to be true that the uterine arteries, or possibly even the internal iliacs, should be tied in every case immediately preceding the treatment by heat.

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[14] Best Methods of Discouraging the Activity of Inoperable Cancer: A Study of Heat in Cancer. The Journal of the American Medical Association, May 23rd, 1914, vol. lxii., p. 1631.

In mentioning these important problems growing out of the practical application of my method I do not wish to be understood as minimising the great benefits which this technic has already given to a rather large number of otherwise hopeless cases of inoperable cancer of the cervix and body of the uterus, but rather to express the hope that with the improvements which can undoubtedly be made in the use of heat in cancer a wider and wider application of this extremely valuable method may be found.

Galesburg, Illinois, U.S.A.

FACTORS OF SAFETY IN CLEFT-PALATE SURGERY.[1]

BY JOSEPH RILUS EASTMAN, M.D., F.A.C.S.

IN the Langenbeck or similar flap operations there will be much less likelihood of separation of the wound margins and consequent failure of union if the mattress coaptation sutures, after being reinforced by a simple running suture, are further supported by a continuous relaxation suture passing round the free edge of the anterior palatine arch.

The anterior part of the soft palate for a distance backward of 8 or 10 mm. from the edge of the hard palate contains practically no muscular fibres, being composed almost entirely of palatine aponeurosis. Therefore the anterior portion is much less movable than the rest of the soft palate. The tensor palati acts upon this part of the palate, but as this is usually divided when the Langenbeck flaps are dissected up, it is not an important factor in causing separation of the wound margins. The posterior and large part of the soft palate contains muscular fibres in abundance and, is freely movable, being the portion upon which most of the palatine muscles act. The supporting or relaxation suture referred to follows the course of the palato-glossus muscle or constrictor isthmi faucium. As a rule, the use of this arch suture obviates the necessity of division of the levatores palati and palato-pharyngei muscles. This affords a decided advantage, since the section of these muscles reduces the blood-supply to the flaps and can have only a harmful effect upon subsequent phonation. Fine celloidin linen or von Brun's hemp, such as is used for the mattress sutures and the continuous coaptation suture, should be used for the suture which is to immobilise temporarily the anterior palatine arch or arcus palato-glossus.

The immobilising suture may be introduced as a series of knotted loops or as a running button-hole suture. The former is the more secure. The knotted suture is introduced by passing a small curved needle bearing the long linen or hemp thread through the edge of the anterior palatine arch on one side near its base—that is, near the side of the tongue. The thread is drawn through to its middle and secured with a reef knot leaving the tail of the suture long. At a distance of 3 or 4 mm. from the first or outermost knot the needle is again passed through the edge of the arch; the tail of the suture is taken up and another reef knot tied. This process is continued around the anterior palatine arch to its base on its opposite side, the suture crossing in front of the base of the uvula. The manner of applying the running button-hole suture requires no explanation.

Such a suture immobilising the anterior palatine arch reinforces the coaptation sutures against the traction incident to deglutition. In cases in which there has been failure of union in the anterior part of the soft palate, the use of the arch suture described has established union of the posterior part of the soft palate, followed promptly by closure through granulation of the forward defect. Such a suture is much more secure than the mattress suture for the reason that tension is distributed over eight or ten points instead of but two, and the danger of cutting out is proportionally lessened. (See Figs. 1, 2, 3, and 4.)

General anæsthesia was never of much value in cleft-palate surgery, and with the present development of local anæsthesia may be said to answer no valuable purpose. Elimination of the general anæsthetic and employment of local anæsthesia remove many of the dangers of palate surgery, and add greatly to its simplicity. If adrenalin be added to a solution of novocaine the technical difficulties are diminished in a surprising degree, as hæmorrhage then becomes negligible. The lessening of hæmorrhage is not only important because it renders dissection of flaps and the passing of sutures so much easier of execution on the bloodless field, but also because it safeguards the patient against shock and serious disturbances of metabolism. Local anæsthesia not only protects against shock by minimising hæmorrhage but also, as Crile has taught us, by acting as a nerve-block.

If the solution used is not too strong—that is, not stronger than an aqueous solution of 0·5 per cent. of novocaine (1–200) with 0·02 per cent. of adrenalin (1–5000), the danger of slough is inconsiderable. In the newborn, 10 to 20 drops of this solution on each side suffice to induce anæsthesia and blanch the tissues.

In the Langenbeck operation the point of the hypodermic needle should be entered slanting inward, along the line of the lateral incisions, to be made for dissection of the lateral flaps. The forcing of the fluid under the mucoperiosteal flap facilitates the subsequent dissection. The solution should be injected by gentle pressure from the line of the lateral incision toward the free edge of the cleft to the end that paring of the edges of the cleft may be attended by minimal hæmorrhage. If local anæsthesia be used, the head of the patient may be placed in any position to suit the convenience of the operator without danger of blood entering the air passages.

In extensive operations the swallowing of more or less blood is almost unavoidable. No matter what position is used or what precautions are taken, some blood is usually drawn into the stomach during the repair of cleft palate. After an extensive palate operation the blood is sometimes discharged in vomitus, but more often it is passed off by the bowel. The presence of this blood in the stomach of an infant or small child is not infrequently productive of serious disturbances of metabolism. The symptoms arise usually very soon after the deglutition of the blood, sometimes within a few hours. The absorption of the pyrogenic constituents of a large quantity of blood quickly induces a high fever. The pyrogenic substances here concerned are probably identical with those which cause the so-called "aseptic surgical fever." It is established that solutions of hæmoglobin have a pyrogenic action. Schimmelbusch isolated from the blood a pyrogenic ferment, and has demonstrated that this body, which is a product of the normal metabolism, when introduced into the circulation in sufficient quantities can give rise to high fever. By others the heat-producing property of blood has been attributed to fibrin ferment and the nucleins. Whether these substances actually produce heat or merely interfere with heat elimination is not understood. It is likely that there is some intimate relationship between the so-called aseptic surgical fever and that fever occurring in conjunction with constipation following operations. The pyrexia in either case is doubtless due to the absorption of soluble decomposing materials which are fabricated in the intestines either with or without the coöperation of bacteria.

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[1] A paper read before the Clinical Congress of Surgeons of North America, London, July 30th, 1914.

The experiments of Schmidt and Hammerschlag led them to believe that transfusion of blood into an animal will always produce more or less fever and that free fibrin ferment may be found in the blood of fever patients very much more often than in those having a normal temperature. Thus, it appears that some constituent of the blood, whether hæmoglobin, fibrin ferment, a nuclein or an albumose, has the property, on being absorbed into the general circulation, of producing fever.

Observing infants after cleft-palate operation it has occurred to me that the degree of fever varied

FIG. 1.

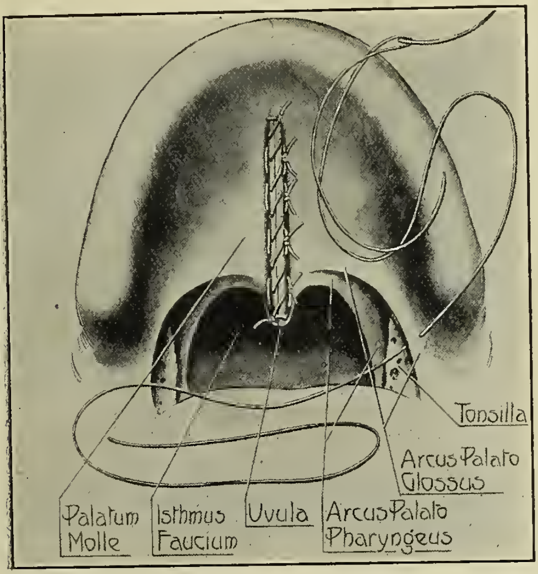


FIG. 2.

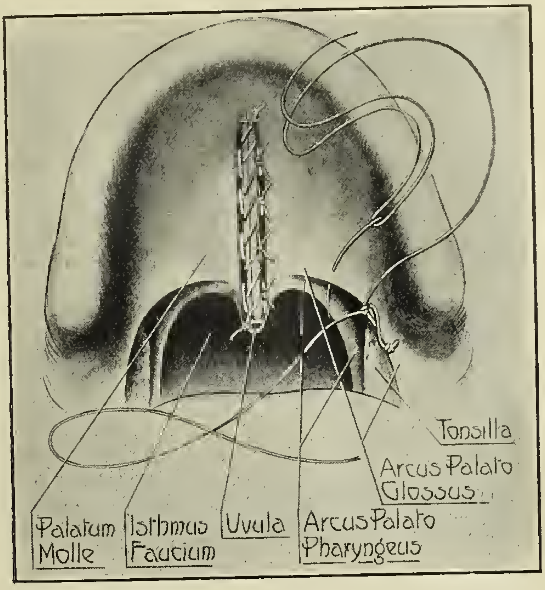


FIG. 3.

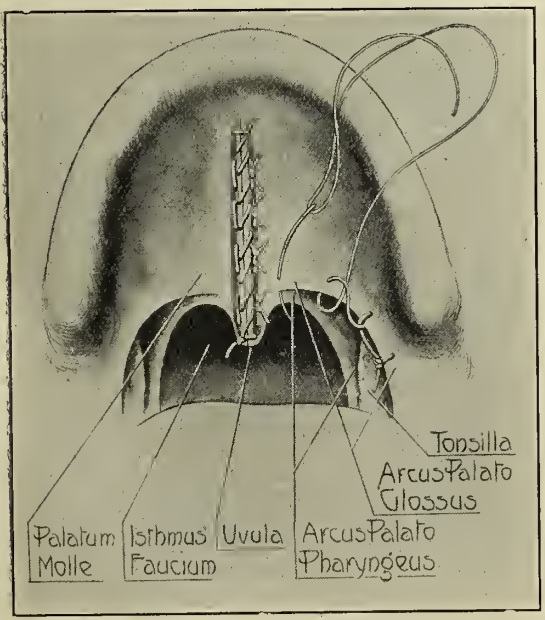
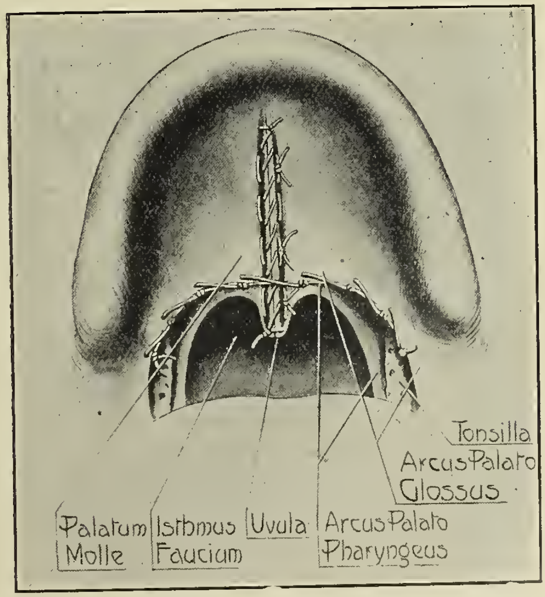


FIG. 4.



The Figures illustrate Palate Relaxation Suture.

directly according to the severity and duration of the operation—that is, the more blood swallowed the greater the pyrexia. It is possible that the direct absorption of blood from the stomach does not produce the fever in these cases. It is, of course, thinkable that the presence of the blood simply leads to fermentation of other intestinal contents with consequent disturbance of metabolism, but however this may be, the fact seems established that the blood in the stomach of an infant is either directly or indirectly thermogenic and is therefore a serious menace because of the high fever which it may induce. Conversely, it has not been difficult to show that the prompt removal of the blood from the stomach of the infant by lavage militates strongly against the development of the fever. The introduction of a medium-sized male catheter and thorough rinsing of the stomach, if done promptly after palate operations, will therefore remove an element of danger.

In palate surgery, as in other surgery, much depends upon the selection of the appropriate operation for the single case at hand. There is little doubt but that the failure to choose the proper operation for the specific case is more often culpable for failure than any of the other recognised causes of failure. There are so many varieties of cleft palate that there can never be a single operation which will apply to all cases. There always will be many operations. The development of the art cannot eliminate them.

In many cases of narrow cleft combined with high cathedral arch, it is not difficult to coapt the edges precisely and without tension after separation of the mucoperiosteum from the hard palate. In cases of high palatal arch, therefore, if the cleft be not too wide, it is useless to make paralysing incisions for the relief of tension, for the two halves of the loosened muscoperiosteal palate will fall together like the two halves of a cantilever drawbridge, and may be sutured without tension if the soft palate be quite completely separated from the hard palate at the posterior border of the latter.

In cases in which the hard palate is almost horizontal, with associated widening of the alveolar arch, the compression method advocated by Brophy is not to be disregarded provided the case is seen during the first few months. I have found few cases in which the compression method was of value, and in these few instances have been obliged to follow it with a flapping operation after Lane, Langenbeck, or Davies-Colley. I have not been able to prevent a slight turning inward of the alveolar processes in any case, even when the root of the zygoma was partially or completely chiselled away in order to secure a high application of the plates. Nevertheless, it is a mistake to say that the Brophy plan of compression is without value. The deformities of cleft palate vary greatly. Many surgeons have denied Brophy's statement that a large percentage of cases of cleft palate are associated with widening of the alveolar arch. However, only one whose observation embraces every cleft palate everywhere could say that this associated abnormal widening of the alveolar arch is never present. Now and then it is found in association with a flat or nearly horizontal hard palate and complete wide cleft, and in such a case Brophy's plan of compression may with good reason precede a flap operation. In such instances Brophy's apparatus of silver wire and lead plates may, I believe, with some advantage be replaced by malleable iron wire and plates with soft rubber pads. (Fig. 5.) The rubber lying between the aluminium plate and the alveolar process minimises trauma and exerts a constant elastic pressure. Malleable iron wire is so much stronger than silver wire that its value is much greater when considerable force is required. The twisted ends of the wire should be allowed to hang out the corner of the child's mouth. Thus they are always available for twisting and occasion the least annoyance. The end of the malleable iron wire should be brazed smoothly to the butt of a stout curved steel needle. This gives a smooth joint which may be drawn through the tissues of the maxilla without adding unnecessary laceration to that produced by the needle point.

FIG. 5.

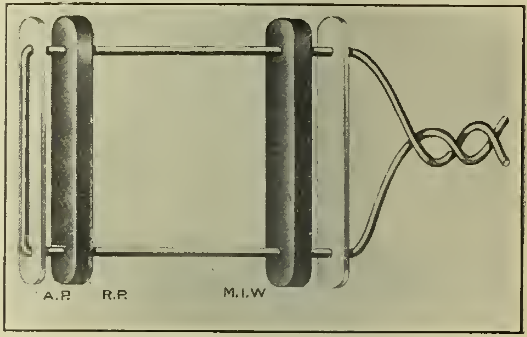


Diagram of apparatus recommended. A.P., Aluminium plate. R.P., Rubber pad. M.I.W., Malleable iron wire.

It is an old and quite generally accepted view that to operate for cleft palate on a child under the age of three months is unwise. This is, as Sir Arbuthnot Lane says, a matter of tradition. It may with reason be contended that under ordinary conditions cleft palate should be operated upon within the first week after birth. The rule to operate early, however, should not apply to infants which are in a general physical sense so far below the normal that even a slight surgical procedure must be attended with great risk. The physical resources of such an infant can often be augmented by a few weeks of careful feeding. In the case of an extremely weak baby, if the cleft be complete and wide, it is probable that nothing can be gained by delay, since adequate feeding is difficult or impossible, and resisting power is steadily reduced by the breathing in of cold air through a roofless mouth. G. V. I. Brown, who counsels in favour of a reasonable delay to the end that the operation can be done with the proper assurance of safety, does not deny the advantage of early operation, if conditions are favourable. The very fact that the infant has just passed through the birth canal, with all the brutal mechanical insults which may be incident to this excursion, suggests the presence of a tolerance to traumatism which becomes less in evidence as the infant grows older.

In ordinary cleft-palate operations under local anæsthesia during the first week the loss of blood should be trivial, but however this may be, the danger from loss of blood is not greater than at a later period. Experience has not suggested the slightest foundation for the truth of the statement that young infants do not bear the loss of blood well. If there is any reliable evidence to the effect that a very young infant does not bear the loss of a given proportion of its blood as safely as an older individual we have no knowledge of it.

The vital resistance against trauma and hæmorrhage of guinea-pigs and rabbits has a higher index upon the day after birth than upon succeeding days. Professor B. D. Myers, of Indiana University, states that a baby rabbit can be operated upon up to 12 hours after birth without an anæsthetic and with no apparent perception of pain, there being no outcry during such a procedure as the enucleation of an eyeball. Eighteen hours after birth such operations cause the animal to cry out. Myers calls attention to a probable relationship between these phenomena and the circumstances that at the time of birth the sensory nerves are in an imperfect state of medullation and are, therefore, not good conductors. It is not known at what time medullation becomes complete in the human. Osmic acid is known to blacken medullated nerves, but the nerves do not blacken with this agent up to 14 hours after birth.

Another phenomenon of interest in this connexion may be noted by removing first the heart of a rabbit 12 hours old and then that of another rabbit 24 hours old. The heart of the 12-hour rabbit will continue to beat for an hour and a half, whereas the heart of the 24-hour animal will cease almost immediately. This single phenomenon, if it may be taken to indicate anything, suggests a marked difference in vitality (even if it be of an automatic sort), or a great difference in sensitiveness to external influences.

After early operation the nasopharynx is forcibly dilated and developed by breathing. Nutrition is not impaired and the child is brought into normal condition before speech defects are established.

There is little doubt but that surgeons who make a rule to operate in the second or third year will have a lower mortality rate than those who operate early. The reason for this is not far to seek. Only the strongest survive the two or three years without early operation. The late operations are, therefore, good surgical risks. How large a percentage of those which are not operated upon early perish from disturbances of nutrition before the third year it would be difficult to estimate. It may safely be conjectured that the percentage is high. Many of such can be saved by early operation.

Indianapolis, Ind.

SUTURE OF THE LEVATOR ANI MUSCLE IN PERINEORRHAPHY OPERATIONS.[1]

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THE selection of a subject which is suitable for discussion before this society is a matter of some difficulty, since matters which are of the highest interest and importance to the gynæcological surgeon are not so necessarily to the general surgeon. At the same time, it is more likely that a specialist will be of interest to his hearers if he deals with a subject which for the moment is of interest to himself, and so I have selected an essentially gynæcological subject.

There are other reasons why I have selected this particular gynæcological subject. In the first place, although it is a generally accepted fact that the support furnished by the levator ani muscle, either with or without its investing fascia, is essential to the pelvic organs, none of the older methods of perineorrhaphy provides a means of such suture. In the second place, it is surprising how many of the present generation of gynæcologists are content to continue to practise these operations, because, and this is my third reason for my choice of subject, they consider, and in fact they are directly told, that suture of the muscle, however essential it may be, is a difficult operation and one not devoid of danger. I do not think that I need spend much time in defending my first reason. Lawson Tait's, Martin's, Hegar's, and Kelly's original operations all neglect to take the levator ani muscle into consideration. It is true that occasionally they may result in causing its suture, but this only occurs when the muscle is not far retracted, while when it is retracted and when its suture is more imperative they fail. As to my second reason, any gynæcologist present can say whether or not it is right as well as I can, and he can say whether my third reason is not also right, and whether the omission to suture the muscle is not the result of the idea that such suture is difficult.

Döderlein and Krönig, in the latest edition of their work on gynæcological operations, and Martin, of Bumm's Klinik, in an article on the suture of the levator ani muscle and fascia, are largely responsible for perpetuating this idea. They, however, are apparently strong advocates of suture, and it seems a pity that their writings should rather tend to complicate the operation, and so to prevent its universal adoption.

I have practised systematic suture of the levator ani muscle for the past six or seven years, and I think I may say that I have sutured the muscle in every case in which I have performed perineorrhaphy during this period except where the muscle was absent or atrophied, but when I stated this fact at a discussion on the subject I was told that I never sutured it. The reasons given for this statement were, first, that Krönig showed how easy it was to mistake a more superficial muscle for the levator ani; and secondly, that Martin said that suture of the levator was a difficult operation involving on extensive dissection, whereas my operation was a simple and easy one. It is just because it is simple and easy that I take up the time of the society with this paper, in which I desire to show, first, that there are no anatomical difficulties in the way of muscle suture; and, secondly, that there are no practical difficulties.

The structures which are involved in a perineorrhaphy operation from without inwards are as follows: (1) skin; (2) superficial fascia; (3) the constrictor vaginæ muscles and the superficial transversus perinei muscle; (4) the deep transversus perinei muscle; (5) the levator ani muscle; and (6) the vaginal mucous membrane. We may at once dismiss a number of these structures from consideration, because their suture is a part of any perineorrhaphy operation that has ever been devised. These are the skin and superficial fascia, the constrictor vaginæ and superficial transversus perinei muscle, and the vaginal mucous membrane. This leaves two muscles for consideration—the deep transversus perinei and the levator ani. The deep transversus perinei muscle rises from the neighbourhood of the point of union of the pubic and ischial rami. As it approaches the middle line it spreads out. A few of the most anterior fibres pass to the anterior wall of the vagina and lie behind the urethra. The remaining fibres pass behind the vagina to the central point of the perineum (Thompson). A great deal of importance has been attached to this muscle by Krönig, who apparently considers it is a structure which is sufficiently long both to afford support in cases of slight prolapse and to be mistaken for the levator ani. In his description of perineorrhaphy as performed in cases of slight prolapse, he says that after the initial incision the fibres of the deep transversus can be seen and their course demonstrated by traction. They lie over the pubo-rectal part of the levator muscle and have often been mistaken for the latter. "To prevent this mistake the diverging muscle bundles should be followed to the sides, the deep transversus perinei passes towards the ischial tuberosity, while the levator ani passes forwards towards the pubis." He then goes on to show how this muscle can be sutured. [Slides were here shown.]

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[1] A paper read before the Clinical Congress of Surgeons of North America, London, July 28th, 1914.

There are two points raised here with which I must deal at once. The first is that Krönig regards the deep transversus perinei as a structure which can not only be easily found, but which is strong enough to be used to reconstitute the pelvic floor. I should hesitate to say in the face of so eminent an authority that I did not regard either of these statements as correct, even though anatomists and one's own personal experience showed that they are incorrect, were it not that on an earlier page of the same article, Krönig himself places the importance of the deep transversus perinei before us in a true light. Here Krönig definitely states that the deep transversus perinei in nulliparæ is as thick as the little finger, while in multiparæ and those with poorly developed muscles it is reduced to mere strands of muscle fibre. It is thus apparently possible that when one comes to perform a perineorrhaphy in the muscular nullipara one may be able to find and to derive help from the deep transversus perinei.

My second point concerns the anatomy of the muscle, and that there is something radically wrong in Krönig's statements about it is shown by comparing his anatomical drawing of the deep transversus perinei with his drawing of the same muscle as exposed during operation. [Slides were here shown.] It is difficult to conceive how a muscle possessing the anatomical relations shown in the first drawing could come into the position in which it is seen in the others. As I have said, I hesitate to express an opinion contrary to such an eminent authority, but still I cannot help pointing out that I think the fibres which in his drawings of perineorrhaphy purport to represent the deep transversus perinei, really represent some bundles which have been accidentally isolated from the lower and inner edge of the levator ani. Martin puts the case very well when he says: "It is anatomically scarcely possible that Krönig could see the deep transversus passing out from the pubis to the walls of the vagina, when operating on cases with marked atrophy of the muscles." I think, then, that Krönig's drawings lay a quite unnecessary and a most perplexing stress on the possibility of confusing the two muscles.

The part of the levator ani with which the gynæcologist is concerned rises from the back of the body of the pubis, along an oblique line which extends from the lowest limit of the symphysis upwards and outwards to the obturator canal, and also from the obturator fascia for a limited extent (Thompson). It passes backwards at the side of the vagina, about half an inch above the hymen, and then similarly at the side of the rectum to be inserted mainly into a median raphé between the anus and the tip of the coccyx. It has also apparently a slight insertion into the vaginal and rectal walls at the point at which it crosses the latter, and it sends a few fibres to meet those of its fellow of the opposite side in the central point of the perineum. It has not, however, any considerable insertion into the perineum, and the union of its fibres which are produced in this region by operation is purely artificial, and in no way a reproduction of the condition of affairs existing before laceration occurred. If the finger is passed high into the vagina of a nullipara and then drawn down along one lateral wall exerting a slight outward pressure, it comes to rest on the upper surface of the muscle, the extent and relations of which can be readily ascertained. It will also be obvious that the main masses of the muscle pass backwards at each side of the perineal body with a distinct separation between them. If a similar examination is made in a case of fairly extensive perineal laceration the lateral masses of the muscle will still be felt, but the gap between them will be greatly increased in consequence of their outward retraction. Further, if a similar examination is made in the case of a patient in whom suture of the muscle has been carred out, the upper border of the lateral masses will be obvious, and so will the fact that they actually meet one another in the middle line throughout the whole antero-posterior depth of the perineum. Lastly, if the muscle is exposed from below by the method which will be described later, and if it is caught in a forceps and drawn down, the finger in the vagina readily proves that the forceps is holding the muscle which forms the pelvic floor and no other. For this reason I have no hesitation in saying that it is impossible for any one who has become at all familiar with the details of the operation to mistake the muscle for any other structure in the pelvic floor.

Just as the possibility of mistaking a practically non-existent structure for the levator ani has been exaggerated, so has the difficulty of the operation and the extent of the dissection required. I cannot understand this latter exaggeration, but, to show that it exists, I quote a sentence from an article by Martin, of Bumm's Klinic, in which he describes an operation that appears to have very few points of difference from the one I habitually practise. Martin writes: "If the fibres of the levator ani are to be brought into view, the connexion between the pelvic fascia and the superficial diaphragmatic fascia must be divided. This, however, means a very deep dissection, and causes hæmorrhage if a broad strip of the pubo-rectalis is laid bare, because one is working in the neighbourhood of the recto-vaginal venous plexus. When the muscle is approximated, the needle frequently pierces this plexus, and so causes emboli as Bumm has described."

I have criticised adversely from the standpoint of my own experience both Krönig's and Martin's efforts to attach difficulty and danger to the routine suture of the levator ani. There is, however, one disadvantage of a slight character to which they both allude, and which I think requires attention. I refer to the fact that the exposure of the muscle and its separate suture lead to the formation of dead spaces between the vaginal mucous membrane and the upper surface of the muscle. If these spaces are allowed to remain in a condition in which blood can accumulate in them, infection of the clot from the rectum is very liable to occur and to convert the hæmatoma into an abscess. There is, however, a very simple and essential method, which I shall presently describe, of obliterating such spaces, and so of preventing the accumulation of blood in them.

Before describing the operation which I have evolved for myself, and which I habitually practise, I would like to say that I do not claim anything original for it, and that so far as I can see identical principles of operation must have been adopted by many others. It is only because so many gynæcologists seem to consider that routine muscle suture in the course of a perineorrhaphy is difficult and hesitate to perform it on this account, that I describe my own technique which I have followed practically unchanged for the last six years. I cannot give the total number of cases on which my assistants or myself have operated, but during the last three and a half years 346 perineorrhaphies for chronic laceration have been performed at the Rotunda Hospital, in practically every one of which the levator ani has been sutured. In an occasional case union has failed to occur, particularly in the early instances, and a hæmatoma has formed; but there has never been a death, or even a patient whose condition gave rise to anxiety owing to the occurrence of emboli from punctured venous plexuses.

I should also like to say, in case the slides of the operation appear familiar to some of you, that the drawings from which they were taken were made just two and a half years ago for me from my operations, and that I take no responsibility for their resemblance to any other illustrations which have been drawn and have appeared since. Within the last two months I have had certain anatomical details in them slightly altered, as the levator muscle was placed at too superficial a level.

The essential features of the operation are as follows: (1) The careful dissection of the necessary amount of vaginal mucous membrane off the rectum; (2) the exposure and suture of the separated levator ani muscles; and (3) the careful approximation of the cut edges of the vaginal mucous membrane in such a manner as to leave no projection or redundancy. The operation is carried out as follows. The extent of the perineal tear is carefully determined, and its anterior edges are marked out by bullet forceps. A third bullet forceps is applied to the perineal skin just behind the posterior edge of the tear. The position of the separated edges of the levator ani is by palpation through the mucous membrane of the vagina. An incision is then made from side to side along the line of junction of the skin and the vaginal mucous membrane. This incision cuts through the skin and any underlying scar tissue. A flap of vaginal wall is then dissected up off the underlying rectum. At its lowest part it is firmly held to the rectum and the sphincter ani by cicatricial bands, the result of the old cicatricial healing. As soon, however, as these have been cut through the separation of the remainder of the flap by blunt dissection is an easy matter. When the dissection of the flap is complete a triangular space is exposed, which is bounded laterally below by the remains of the superficial vaginal and perineal muscles, and at a deeper level by the pubo-coccygeal fibres of the levator ani muscle, while its floor is formed by the rectum. It is then an easy matter to catch the edges of the levator with clip forceps or dissecting forceps, and to draw them downwards and inwards until they meet in the middle line. If the separation and atrophy of the muscle are marked, then it may not be possible to draw the edges down sufficiently, but in the great majority of cases they can be brought into view. Three or four interrupted sutures of catgut are then passed through them from side to side, so that when tied they will approximate them in the middle line; for the present, however, they are left untied. The next step is to trim the vaginal flap into proper shape, so that when the operation is complete there may be no redundancy. The cut edges of the flap are then brought together by a continuous catgut suture passed from above downwards, and ending at the vulvar orifice. This being done, the catgut sutures in the levator muscle may be tied. The last step consists in the introduction of silkworm gut sutures passed so as to close the skin edges of the perineal wound. These sutures are passed from side to side, and traverse the skin and the remains of the superficial perineal muscles and also the elevator muscle, so as to supplement the buried catgut sutures. Sometimes during this procedure there may be hæmorrhage from the hæmorrhoidal vessels. Any bleeding vessel, if of large size, should be caught and tied, but, as a rule, the best method of stopping bleeding is by proceeding rapidly with the operation.[1]

I have mentioned the tendency there is to the formation of dead spaces between the vaginal mucous membrane and the upper surface of the levator ani, as a result of the necessary stripping up of the vaginal flap and the separation of the edges of the muscle from the sides of the vagina. The final step of the operation is directed towards the prevention of the accumulation of blood in such spaces, and is, in my opinion, an essential precaution. It consists in the firm plugging of the vagina with iodoform gauze. The plug must be applied most carefully, so as to avoid injury to the vaginal sutures, and in such a manner that it lies wholly above the muscle, with the exception of the end which hangs out through the vulvar opening. It is quite impossible to introduce it satisfactorily by merely pushing it upwards through the narrowed orifice. The reconstituted perineum must be drawn carefully backwards by means of a narrow retractor passed into the vagina, so as to lie above the levator muscle. The retractor which I use for the purpose is known as Doyen's anterior vaginal retractor, and is made by Collin of Paris. Though intended as an anterior retractor, it possesses a blade which is set at just the correct angle to the handle to allow it to pull back the posterior vaginal wall and the muscle in the manner required for the insertion of the plug. By means of it it is possible to introduce a strip of gauze about three inches wide and some five to six yards in length in such a manner that, while the gauze expands the upper part of the vagina and keeps the posterior vaginal wall in close contact with the sutured muscle, it throws little or no strain on the sutured mucous membrane which lies below it. I have described this step in detail because I attach very great importance to it, and because it is impossible to carry it out satisfactorily without a suitable appliance, such as the retractor I mention.

The advantages of the foregoing operation are its ease and its rapidity. In an ordinary uncomplicated case it can be finished in less than ten minutes, and it very rarely takes more than 15 minutes to perform. I should like to sum up my conclusions briefly. 1. Routine suture of the levator ani is an essential part of perineorrhaphy. 2. Routine suture is always practicable, except when the muscle is wanting owing to atrophy after injury. Such absence is very rare, and when it occurs it is impossible to reconstitute the perineum satisfactorily. 3. The exposure and suture of the levator ani are neither difficult nor dangerous.

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[1] This portion of Dr. Jellett's address was illustrated.—ED. L.

Dublin.

THE RESULTS OF RADICAL OPERATIVE TREATMENT OF CANCER OF THE UTERUS.[1]

BY THOMAS WILSON, M.D. LOND., F.R.C.S. ENG.,
PROFESSOR OF MIDWIFERY AND DISEASES OF WOMEN IN THE UNIVERSITY OF BIRMINGHAM.

History.

THE operative treatment of uterine cancer has made slow but, on the whole, continuous progress since surgery was made safe by the work of Lister and Pasteur. Until 30 years ago surgical intervention was practically limited to cancers of the vaginal cervix, and the operation was done with the actual or galvanic cautery. In 1882 Pawlik reported 136 infravaginal amputations of the cervix performed by C. Braun with the galvanic écraseur; 10 patients died, and of the survivors at least 12 remained free from recurrence for five years and upwards. Byrne in 1889 had done 81 cases by the galvanic cautery, and in 35 there had been no return of the growth for periods varying from 3 to 17 years. The operation was limited in its scope, and was soon superseded by Schroeder's supravaginal amputation of the cervix, which was applicable to a larger proportion of cases, had a mortality varying at first from 8 to 12 per cent., and was followed by freedom from recurrence for two and three years in about 40 per cent. of those reported upon. In this country Lewers did 33 of these operations, in 6 of which the patients remained well for more than five years; the operable ratio is not given, but was probably much less than 20 per cent.; the five-year absolute curability would thus not exceed 2 per cent.

Vaginal hysterectomy was first performed on regular anatomical lines by Czerny, and in the later "eighties" began to displace the supravaginal amputation in England. The first important discussion on the subject took place at the Obstetrical Society in 1885, when W. Duncan introduced two tables of collected cases—one showing 137 cases of abdominal extirpation of cancerous uteri with 99 deaths, an immediate mortality of 72 per cent.; and the second table embracing 276 cases of vaginal hysterectomy with 79 deaths, or 28·6 per cent. mortality. The general conclusion arrived at in the paper and subsequent discussion was that the risks practically condemned vaginal hysterectomy as an operation for cancer. Seven years later, in a review of the subject in the *Journal of Obstetrics and Gynæcology of the British Empire*, I examined the literature of the subject, and showed that in competent hands the operation was applicable on an average to from 25 to 33 per cent. of the cases which applied for treatment; the immediate mortality was 5 per cent. or less; 25 to 33 per cent. of the cases that survived the operation remained well and free from recurrence for five years and upwards; and the absolute curability of uterine cancer by this operation varied between about 4 per cent. (Schauta ap. Waldstein) and 9·5 or 10 per cent. (Winter and Kaltenbach).

In the same review references were made to the extended operation carried out with the help of a vagino-perineal incision, by means of which the parametria could be widely removed. In 1901 Schuchardt had reported on 60 such cases, and claimed an absolute curability of 24 per cent. of the number of cases presenting themselves for treatment. Since then the operation has been largely practised by certain operators, and its advocates claim that access to the seat of operation is as good, that the danger of injuring neighbouring structures is less, and that as wide a removal of the parametrium can be made by this route as by the abdominal. The dangers of bleeding and sepsis seem to be little inferior to those of the abdominal operation, and the risk of implantation of cancer cells would appear to be equally great.

By the extended vaginal operation Schauta, until 1911, obtained a five-year absolute curability of 16·6 per cent. on 211 operations for cervical cancer performed in a series of 447 cases applying for treatment. The primary mortality was 8·9 per cent., but in the last three years had been reduced to 3·7 per cent. In this country the chief exponent of this operation was Sinclair, of Manchester, and since his death the method appears to have fallen almost entirely into disuse. Among my own early operations I made use of the vagino-perineal incision in a few instances, but in the second case, one of cancer of the body, an implantation metastasis arose in the vagino-perineal scar within a few months; after that I ceased almost entirely to employ this incision in operating for uterine cancer.

At about the same time as the extended vaginal operation was being worked out, the example set in the surgery of mammary cancer stimulated operators to endeavour to find a method of removing the uterus together with its neighbouring connective tissue and lymphatics. Hysterectomy by the abdominal route was therefore once more attempted, and in 1895 Clark and Rumpf first dissected the ureters in order to remove as much of the parametria as possible, and Ries proposed the removal of the pelvic lymphatic glands. In 1898 Wertheim in Vienna began the remarkable series of operations which has served to establish the operation and make it known by his name in all parts of the civilised world. For the last ten years this operation has been gradually displacing the extended vaginal hysterectomy, which is now regarded as its only possible rival. The immediate results are steadily improving and many of the dangers and disadvantages of the operation have been overcome. Thus suppuration and sloughing of the abdominal incision with consequent hernia are now prevented by carefully guarding the incision during the operation, septic peritonitis is prevented by suitable vaginal antisepsis, and shock and exhaustion become less common with increasing experience.

Some surgeons attach great importance to the use of the actual or galvanic cautery in operations for uterine cancer; in this country Herbert Spencer is the chief advocate of this method. In America Byrne achieved remarkable success by its use, and X. O. Werder has recently very strongly recommended combined vagino-abdominal hysterectomy by the cautery method; in his hands it has given an absolute five-year curability of 16·5 per cent. on 39 cases.

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[1] A paper read before the Clinical Congress of Surgeons of North America on July 30th, 1914.

In this country the abdominal operation is becoming the routine method, because, in the first place, it affords better oversight of the field of operation than the vaginal method; in the second place, because operations by the vaginal route have never been extensively practised here, and thus skill is easier of attainment in a new operation if it is performed by the abdominal method; and thirdly, because only by the abdominal route it is possible to remove the affected glands. This last advantage is likely to prove of increasing value in the future. Many operators in their haste have concluded that it is useless to remove the glands, and have stated that when they are invaded the disease always recurs after operation. Wertheim has, however, published 14 cases in which carcinomatous glands were found, and which nevertheless remained free from recurrence for upwards of five years. For the reasons stated the abdominal opera- is likely to become more and more generally adopted. It cannot, however, be applied to all cases. The prolonged Trendelenburg posture is dangerous for old patients, for those who are very fat, and for certain women with visceral complications. In such cases the vaginal operation affords a better immediate outlook, and in the old patients especially it is often followed by a long freedom from recurrence.

Difficulties of Estimating Results of Operations for Cancer.

The difficulties of estimating justly the results of any curative method of treatment of cancer are very great by reason of the uncertain course and duration of the disease. Cancer does not grow with equal steps, but now halts, again recedes, and anon makes rapid and tumultuous progress. In different patients the earliest symptoms make their appearance at very various stages of the disease. When cancer begins in the uterus one patient has recognisable symptoms at the very beginning, while another is conscious of nothing unusual until the disease is already very far advanced. The duration of the disease is in the highest degree uncertain; of two women with the affection apparently in the same stage, one may die in a few weeks and the other live for several years. In the practice of the operating surgeon groups of cases, successful as regards ultimate cure, alternate with other groups apparently similar, but all ending in rapid recurrence. All which things tend to show that the actual living virus of cancer, when at length it is discovered, will be found to pass through varying phases of growth and activity, now active and virulent, now stationary or sluggish.

These uncertainties in the course of the disease have been illustrated, and to some extent explained, by the experiments on mouse cancer. Here also marked variations are observed in the rate of proliferation of the cancer cells. Some tumours on inoculation grow rapidly, certainly, and progressively; others increase slowly; still others tend to regress and disappear; and all degrees of virulence are found between these extremes. The tumour cells exhibit what may for convenience be called positive and negative phases of proliferative activity.

On the other side, marked differences exist in individual hosts as well as in the various organs and tissues of the body. In some organs and persons cancer appears to take root easily; it grows rapidly and soon becomes generalised. In some very early cases of uterine cancer the regional glands are already invaded; while in patients dead of the disease the glands are reported to be free in as many as 54 per cent. The same uncertainty is illustrated in the varying fate which befalls tumour emboli in the lungs of patients with malignant chorion-epithelioma. Relative immunity varying in degree resides in some organs and tissues, and in certain individuals. Not every person exposed to the causes of cancer, whatever these may be, develops the disease. Many are called, but few are chosen.

Here, then, are two factors which go far to explain the impossibility of forming an opinion on the course of the disease and on the probable result of operation in any individual case. Little that is definite is known of either of these factors, and we can only hope that patience and perseverance will eventually lead to their elucidation. In the meantime the uncertainty and variability of the disease render it imperative that, in forming an opinion on the results of any method of treatment, observations shall be made on large numbers of cases and shall extend over a very considerable time. Averages are of use in comparing results in the mass, though they are of none in individual prognosis.

Standard for Comparison.

In estimating the risk of any new operation it has always to be borne in mind that, while there are dangers inherent in the operation, there are also dangers that appertain to the operator. The first 10 or 12 new operations carried out by an individual surgeon usually teach him most of the difficulties and dangers that are to be encountered, and with increasing experience the mortality due to the personal factor rapidly diminishes. The bearing of this remark lies in the application thereof. I think it would be just to exclude from the general consideration of the subject the first 10 or 20 cases of Wertheim's operation done by each individual operator. In this way a true idea of the danger due to and inseparable from the operation itself might more easily be formed.

In proportion as the operation for uterine cancer has become more extensive the demands as regards ultimate cure have become more exacting. At first, since the average duration of the disease from the onset of symptoms to the death of the patient was understood to be one and a half years, freedom from recurrence for two years after operation was a surgical triumph; then a term of three and later of five years' freedom was demanded. Latterly it has been suggested by Weibel among others that the term should be extended to seven or more years, inasmuch as a certain number of patients show late recurrence. That this undoubtedly happens was shown in three of my patients in whom the disease returned after 6, 6⅓, and 9½ years respectively. But art is long and time is fleeting, and the necessity is urgent of a convenient and sufficient standard to enable us to estimate and compare results. For this purpose five years would seem to answer all legitimate requirements, and it is to be desired that published results should conform to this standard.

Only those who have examined published writings with a view to find out what the operations for uterine cancer can fulfil can appreciate the chaos and confusion that have arisen from every writer setting up his own standard. The literature of the subject is largely made up of attempts to estimate the value of the different operations by arithmetical methods which bristle with fallacies of every conceivable kind. The higher mathematics has been called upon to assist, for instance, in the formulæ of Winter and Waldstein. To the making of statistics there is no end, and many figures are a weariness of the flesh. All complicated formulæ are superfluous, and it appears to me a sufficient, and the only fairly reliable, estimate of results can be made by comparing the total number of cases of cancer that apply for treatment with the number known to be free from recurrence five years later. And even here there are many opportunities for error.

Another important observation that should be, but is not, superfluous must be made: that under no circumstances is it any longer justifiable to publish the mixed results of treatment of cancer of the body and of the cervix. The two varieties should be kept entirely distinct and separately discussed.

In the large German clinics we find that the cases of cancer of the uterine cervix afford a ratio of operability of 45 to 60 and even higher, and an absolute curability of 20 per cent. Wertheim's five-year completed statistics of 450 cases show an operable ratio of 46 per cent., with a primary mortality of 19·5 per cent., and an absolute curability of 19 per cent., 186 of 979 patients being known to be alive and free from recurrence at the end of five years.

In this country, with rare exceptions, the operability is not greater than from 30 to 40 per cent., and the total curability than 10 per cent. The low operable ratio is not due to any difference in the disease, but rather to the fact that the general public and the main body of the medical profession have not yet grasped the truth that uterine cancer is curable in a large proportion of those cases that apply early for treatment. The consequence of this ignorance is that women do not seek medical aid promptly, and that when they do the necessary investigation is only too often delayed.

The Surgery of Uterine Cancer in Great Britain.

In Great Britain, as generally speaking in America, gynæcological work is spread over a large number of clinics of small or moderate size, and the opportunities afforded to the individual operator are comparatively limited. In testing and establishing a new operation, such as the extended abdominal hysterectomy for uterine cancer, this arrangement has many disadvantages when compared with the large clinics and extensive opportunities that are found on the European continent. To this more than to any other cause is probably due the fact that these operations have been practised extensively and successfully in Vienna and Germany far in advance of the work that has been done here.

Published papers in the British journals on the extended operation for uterine cancer have been comparatively few, and to a large extent made up of descriptions of technique with occasional suggestions for its improvement. Hastings Tweedy in 1911 published notes of 48 cases of uterine cancer operated on by the abdominal method. Among these were included 33 operations for cervical cancer with an immediate mortality of 8, or 24 per cent. Comyns Berkeley has described the results obtained by him and Bonney in the three years ending June, 1910. Among 112 cases of cervical cancer 71 were operated upon, an operable ratio of 63; the immediate mortality was 22·5 per cent.; and the patients remaining free at the end of three years amounted to 40·5 per cent. of those operated upon, or 54·9 per cent. of those recovering from the operation. McCann to June, 1912, had done 52 Wertheim's operations for cancer of the cervix with 3 deaths, and in the five years ending June, 1911, had seen only 5 inoperable cases. Cuthbert Lockyer and Childe have also discussed the operation. There are no British five-year statistics.

I propose now briefly to examine my own work on uterine cancer which has been done in the gynæcological department of the Birmingham General Hospital. This department has 14 beds and is a fairly typical one in this country. In the last ten years most of the out-patients have been seen by the assistants in the department, Mr. J. T. Hewetson and Mr. Beckwith Whitehouse, who have also performed some of the operations and have assisted in most of mine. I have taken all the cases applying for treatment in the out-patient department and all those admitted to the wards, and have added all my own private cases. My thanks are due to Miss M. B. Webb, M.D., whose very efficient and enthusiastic help in following up my results I here gratefully acknowledge.

From the year 1896 until Dec. 31st, 1913, there have been 596 cases of uterine cancer. Of these, in 67 the disease affected the uterine body, and in order to clear the ground I deal with these first. Among the 67, 15 vaginal hysterectomies with no mortality, and 29 abdominal hysterectomies with 3 deaths, were performed. The five-year results are given in the accompanying table:—

Cases of Cancer of the Uterine Body seen until June 30th, 1909.

Total cases seen	50	
Radical operations	31	= 62%
Deaths following operation	2	= 6·4%
Cases free from recurrence for five years and upwards	12	
Absolute curability		24%

The absolute curability of cancer of the body of the uterus here shown appears small when compared with the rate of 50 to 75 per cent. usually claimed, but I believe the latter rate is based largely on fallacies and small numbers, and will prove to be exaggerated.

Cervical Cancer.

Until the end of 1913 there were 529 cases of cancer of the cervix uteri. These can be conveniently divided into two groups according as operation by the vaginal or the abdominal route was the method of choice. In the first period, lasting until the end of 1905, there were 246 cases, of which 37 were operated upon by the vaginal method with 1 death, and 7 by the abdominal route with 6 deaths. In the second period, from Jan. 1st, 1906, to Dec. 31st, 1913, 283 cases were seen, among whom 20 were operated upon by the vaginal route with no deaths, and 72 by the abdominal with 8 deaths. The total immediate mortality of the vaginal method has been 57 cases with 1 death, or less than 2 per cent.; and of the abdominal, 79 operations with 14 deaths, or 17·7 per cent. The great majority of the abdominal hysterectomies were performed by Wertheim's method.

The ratio of operability has steadily increased; in the years 1896 to 1899 it was 14 per cent.; in the last four years it has been more than 36 per cent.

Operable Ratio.

1896–1905	inclusive	18·0%	of	246	cases,
1906–1909	,, ...	29·2%	,,	154	,,
1910–1913	,, ...	36·4%	,,	129	,,

My total five-year results up to June 30th, 1909, have been investigated and show that, with an increased operable ratio and the adoption of the abdominal method of operation, the absolute curability of my cases has risen from 5·5 to 10·2 per cent.

Results of Vaginal Hysterectomy for Cancer of the Cervix to June 30th, 1909.	*Abdominal Hysterectomy for Cancer of the Cervix to June 30th, 1909.*
52 operations in 288 patients.	32 cases in 98 patients.
Average operability about 18 %.	Operable ratio, 32·5 %.
Death following operation, 1.	Deaths following operation, 9.
Patients survived five years and upwards, 16.	Free for five years and upwards, 10.
Absolute curability, 5·5 %.	Absolute curability, 10·2 %.

Of the patients surviving operation 16 of 51 = 31 per cent. of the vaginal, and 10 of 23 = 43 per cent. of the abdominal, remained well and free from recurrence for five years and upwards.

It follows from my experience that, although the final results hitherto obtained in this country are inferior to those of the best Continental clinics, they are steadily improving and may be confidently expected still further so to do. The immediate mortality of the extended abdominal hysterectomy for cervical cancer has fallen; thus, in my own work, in the six years ending Dec. 31st, 1913, there were 6 deaths in 62 operations, a rate of about 10 per cent. The operable ratio has doubled in the last ten years, and may be expected to rise considerably further when the possibilities of the operation are grasped by the profession at large and by the public. The total number of patients remaining free from recurrence for five years and upwards has also increased nearly twofold in the last decade, and we may hope before long with the surgical methods now at our disposal to achieve an absolute curability of 25 per cent. of all cases of cancer of the uterine cervix.

Hardly a year passes free from the joyous announcement of new and certain cures for cancer. Every new treatment is hailed with acclamation, tried with enthusiasm, claimed to be almost consciously selective in its action on the cancer cells, and then is dropped quietly into the oblivion of disappointing and forgotten things. Hitherto surgical methods alone have stood the test of time and have justified their use, not only by progressively improving results, but also by affording opportunities for increasing our knowledge of the pathology of the fell disease in the human race. The exact nature and the mode of origin of cancer are still veiled from our view, and the seer who shall expound these is eagerly awaited. In the meantime it behoves us to continue to give to our patients the benefit of those methods which give the greatest promise, being neither unduly lifted up by success nor cast down by many and grievous disappointments.

Birmingham.

DONATIONS AND BEQUESTS.—By the will of the late Mr. Charles Chetwode Baily, of Brighton, the testator left £10,000 to the Inalienable Fund of the Royal Sussex County Hospital, Brighton; £5000 to the Special Endowment Fund of the Royal Alexandra Hospital, Brighton; £2000 to the Endowment Fund of the London Hospital; and £1000 each to the Endowment Fund of the Brighton, Hove, and Preston Dispensary; Royal Hospital for Incurables, Putney Heath; and Surgical Aid Society. He also left £10,000 upon trust for his cousin and her issue, whom failing, to the Inalienable Fund of the Royal Sussex County Hospital, Brighton.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF EMBOLISM OF THE RIGHT INNOMINATE VEIN.

BY F. S. CREAN, M.D., CH.B. DUB.,

SENIOR ASSISTANT MEDICAL OFFICER TO THE BERMONDSEY INFIRMARY, S.E.

A MAN, aged 63, was admitted to the Bermondsey Infirmary on Nov. 18th, 1913. Ostensibly he sought admission on account of an attack of vomiting and diarrhœa, symptoms which rapidly subsided. He was extremely deaf, and could give no clear information concerning his previous health. When examined he was found to have an enlarged heart, with a systolic bruit at the apex conducted towards the axilla. Albuminuria was present, while the liver could be felt about an inch below the right costal arch. The temperature was normal, and remained so throughout the illness. Some few days after admission the patient complained of dyspnœa, a symptom which became progressively distressing from day to day. It was now found that there were flatness of percussion note and diminution of breath sound at the right pulmonary base. Eight days after admission venous pulsation in the neck, which had not hitherto been evident, was observed, and presented the striking peculiarity of strict limitation to the left side. This latter appearance was speedily followed by the onset of œdema of the right chest wall and arm, while the radial pulse became obliterated. Within three weeks of the patient's coming under observation gangrene of the right upper limb had become established, the process spreading from below upwards. Prior to death, which occurred in less than four weeks, there was incipient gangrene of both feet. A diagnosis of mediastinal growth was made.

At the necropsy a thrombus filling the right innominate vein completely, extending into the right internal jugular vein and compressing the subclavian artery, was found. The thrombus extended through the superior vena cava to the right auricle, but the obstruction in the vena cava was incomplete. Both tricuspid and mitral valves were incompetent, while the right auricular appendix contained a fragment of ante-mortem clot. There was an effusion of serum into the right pleural cavity. There was no new growth.

Bermondsey Infirmary, S.E.

FATAL INJURIES, INCLUDING RUPTURE OF THE DIAPHRAGM.

BY HERBERT WHITE, M.R.C.S. ENG., L.R.C.P. LOND.,

SURGEON, ROYAL NAVY.

AN account of the following injuries, including rupture of the diaphragm, may be of interest to readers of THE LANCET.

The victim, a man aged 46 years, was standing on the sill of a dry dock superintending the lowering and placing in position of spars reaching from the side of the dock to a battleship. These spars weigh about 175 lb. While one was being lowered the rope carried away, and the spar falling struck the man on the back, sweeping him off the sill to the bottom of the dock, a distance of 35 feet, striking the projecting ledges on the way. He was brought to the dockyard surgery, where I saw him about half an hour after the accident. He was still alive, with just a perceptible pulse, and was bleeding profusely from the left ear, the nostrils, and the mouth. He expired five minutes later.

The obvious injuries were a compound comminuted fracture of the vault of the skull, involving the frontal and parietal bones, and a fracture of the left tibia and fibula at junction of middle and lower thirds. There were no other superficial signs of injuries.

At the subsequent post-mortem examination the following injuries were found. On reflecting the scalp the fracture was found to run across the top of the skull half an inch behind the coronal suture; from its centre a fracture ran down the frontal bone; the occipital bone was uninjured. On removing the upper part of the brain by section through the crus the only obvious damage was slight bruising of the extreme ends of the occipital lobes. The dura mater covering the base of the skull was not torn. On removing it the transverse fracture of the vault was continued completely across the base of the skull, involving the temporal and sphenoidal bones. the sella turcica was comminuted, and it crumbled under the touch. The cerebellum on removal was uninjured. On opening the thorax, both first ribs were fractured; the clavicles were intact. There was some bloody fluid in the left pleural cavity. When the contents of the thorax were removed a loop of small intestine was seen protruding through the diaphragm into the left pleural cavity. The rupture in the diaphragm was but one inch in length; the intestine proved to be six inches of jejunum. The abdominal cavity showed all its contents uninjured except bruising of the lower pole of the left kidney, but no laceration. The bladder and rectum were intact, but the left side of the bony pelvis was badly comminuted, caused by the head of the left femur being driven upwards into the pelvis. The acetabulum itself was intact, but was entirely separated from the remaining bony structures. The pubic and ischial bones were broken into small fragments; the greater part of the ilium had escaped. The right side of the pelvis and the sacrum were uninjured. The vertebral column was intact.

I believe that rupture of the diaphragm in these accidents is of rare occurrence.

Portsmouth.

A CENTENARIAN.—The death of Mrs. Martha Waldeck, at Twickenham, at the age of 104 is announced.

WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM.—The Savill prize and medal were presented on July 23rd to Dr. T. Knowles Boney, first winner since the establishment of the prize. In the absence of Mr. Leonard Brassey, M.P., chairman of the hospital, who was unable to attend, the chair was taken by Dr. Harry Campbell, vice-chairman and senior physician. Dr. Agnes Savill presented the medal and prize to Dr. Knowles Boney, and said that the encouragement of the study of nervous diseases was the form of memorial which would have been specially dear to her late husband. The medal and prize of £5 are given in memory of the late Dr. Thomas Dixon Savill, who lost his life in Algiers in 1910. The competition is open to all graduates and senior students of medicine who attend 25 demonstrations in the out-patient department of the hospital, undergo an examination, and write a thesis on a set subject, the subject set last year being Myasthenia Gravis.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION OF DERMATOLOGY.

Exhibition of Cases.

A MEETING of this section was held on July 16th, Dr. J. J. PRINGLE, the President, being in the chair.

The following cases were exhibited:—

Dr. E. G. GRAHAM LITTLE: A characteristic case of Schamberg's Disease in a middle-aged man. The patches, which were situated on the legs were of 30 years' duration on the left side. The exhibitor had previously observed only one similar case.—Dr. A. DOUGLAS HEATH (Birmingham) had had a marked instance of the disease under his care in a woman, aged 73, in whom the patches had extended from below the knees to the level of the umbilicus after five years' duration.—The PRESIDENT inquired if any dilated capillaries were seen in the sections, and Dr. Little replied that the chief microscopical feature was a cellular infiltration.

Dr. LITTLE also showed a patient who had resided in South Africa, and who had suffered from white leg and cerebral embolism ten years ago, and who had during the past few years developed numerous symmetrical subcutaneous painful tumours of the arms and other parts. There was also pigmentation of the neck. He thought the case might be grouped with the multiple symmetrical lipomata described by Brocq and others.—Dr. F. PARKES WEBER thought they were multiple fatty tumours, but distinct from adiposis dolorosa, which was a more general condition.—Dr. A. WHITFIELD remarked that many cases of adiposis dolorosa had calcified thyroids, and suggested that a radiogram should be taken. He had observed a case treated with thyroid extract in which a large number of the tumours had disappeared.

Dr. LITTLE also showed a case of Lupus Erythematosus in a man who had lived ten years in Pretoria. At the end of February of this year a red patch showed itself on the nose which was treated with X rays and ether snow. He became worse on the voyage home, and now presented patches behind the ear and on the hands, accompanied by pigmentation and greyness of the eyebrows attributed to the X ray treatment. Scrapings showed no micro-organisms.—The PRESIDENT concurred in Dr. Little's view of the case, basing his opinion mainly upon the condition of the hands.—Dr. G. PERNET asked if there was not an underlying condition of melano-leucodermia.—Dr. H. G. ADAMSON diagnosed leucodermia with sclerodermia and thought that the lesions might have been the result of a solar dermatitis.

Dr. LITTLE also showed a case of Sclerema Neonatorum in a child aged 21 months; the whole of the back, face, upper arms and thighs had been involved soon after birth, but spontaneous involution was occurring in many regions.

Dr. LITTLE also showed a case of Pityriasis Rosea with the herald patch on the face and vesication of the feet.—Dr. ADAMSON had seen similar cases in children; and the PRESIDENT alluded to three cases of his own, in two of which primary patches occurred on the face and in one on the glans penis. He mentioned that cases of vesicating pityriasis rosea had been reported in America and the vesicular nature of the lesion when examined histologically had been emphasised by Sabouraud.

Dr. W. KNOWSLEY SIBLEY showed a boy, 16 years of age, who was stated to have had an eruption on the body since he was 8 years old. He presented an extensive eruption, consisting of raised oval or round, firm, tumour-like lesions of a reddish colour, many of them having a semi-translucent waxy appearance, over the greater part of the body and limbs. Sections showed an inflammatory connective tissue new growth in the dermis, with pigment and dilated blood-vessels and some large, well-defined cells showing fat granules. He had not arrived at a diagnosis.—Dr. A. WHITFIELD said the case resembled an extremely chronic urticaria or prurigo and had no relationship to xanthoma. He thought the lesions were mainly œdematous, as shown by the sections, the majority of the cells being polynuclears with enormous dilatation of the capillaries and lymphatic spaces.—Dr. W. Dyson (Manchester) considered the case belonged to the prurigo group of diseases.—The President expressed the opinion that it was a new type of disease somewhat resembling a case recently shown by Dr. MacCormac and labelled prurigo senilis.—Dr. J. H. Stowers shared the same view.—Dr. J. M. H. MacLeod thought the sections showed new fibrous tissue and did not resemble xanthoma; the spaces were dilated lymphatics, and the microscopical appearances suggested a lymphodermia.

Dr. Sibley also showed a case of severe Lupus Vulgaris in a woman, aged 41 years, affecting the mucous membrane of the mouth, pharynx, and nostrils, which he had treated by nascent iodine, administering potassium iodide by the mouth followed by chlorine water in lemonade. Locally he applied insufflations of equal parts of iodide of potassium and chalk, the mouth being afterwards rinsed with chlorine water.

Dr. MacLeod exhibited a woman with chalky deposits consisting of carbonate of calcium in the skin causing inflammatory and suppurative lesions on the arms, fingers, and knees of five years' duration.—Dr. Parkes Weber remarked that it was an extreme instance of so-called "chalk-gout."—Dr. Whitfield mentioned a similar case in which the administration of phosphoric acid had appeared to afford good results.—Dr. Little supported Dr. Whitfield's suggestion, but advocated testing Joulie's reaction before giving the phosphoric acid.—Dr. Adamson thought the case might belong to the class of calcareous deposits in the skin which were really calcified infective granulomata.

Dr. Dudley Corbett brought forward a case of Mycosis Fungoides of 12 years' duration in a woman who had had much X ray treatment and had been reported as cured in 1905. She had recently developed lesions on the right free margin of the soft palate and the left lower eyelid, the nature of which was undetermined.

Dr. S. E. Dore showed: 1. A case of Acute Erythematous and Miliary Lichen Planus in a woman aged 24 years. The eruption began three months previously and spread over the trunk and legs, the buccal mucosa on the right side also being involved. The patient had also suffered intermittently from psoriasis for the past ten years, and now presented typical patches of that disease on the knees and elbows. 2. A man, aged 24 years, who suffered from a patchy erythematous eruption of four months' duration on the neck, chest, back, and upper arms. The patches were angular and circinate in outline and of a brownish colour, those on the back being linear and showing a tendency to follow the lines of cleavage. Some of the features of the case suggested mycosis fungoides, others parapsoriasis. There was very little itching, and the presence of infiltration was doubtful. Considerable difference of opinion was expressed as to the diagnosis.—Dr. MacLeod suggested "xantho-erythrodermia perstans."—The President suggested a microscopical examination and X rays as an aid to diagnosis.

Dr. Dore also showed a man, aged 43 years, who presented a Nodose Tuberculide in the sacral region of 12 months' duration. The tumours were preceded by enlargement and suppuration of the right inguinal glands, probably of a tuberculous character, three years previously. Although the exact nature of the condition was uncertain, it was generally thought to correspond to the "multiple benign sarcoid" of C. Boeck.—The case was discussed by Dr. A. M. H. Gray, who suggested test doses of tuberculin for diagnostic purposes.

Dr. Parkes Weber exhibited an extensive and characteristic case of Kaposi's so-called Idiopathic Pigmentary Sarcoma in a man, aged 76 years, from Russian Poland, who had been 24 years in this country but in whom the disease developed only two years ago.—The President agreed with the diagnosis, and thought that good results might be anticipated from X rays, although the disease had been known to recover spontaneously in some instances. The pathological relationships were generally recognised to be more closely connected with the infective granulomata than with sarcoma.

Reviews and Notices of Books.

X Rays.

By G. W. C. Kaye, B.A., D.Sc., Head of the Radium Department at the National Physical Laboratory, &c. London: Longmans, Green, and Co. 1914. Pp. 252. Price 5*s*. net.

This interesting and important volume will arouse in a considerable section of the medical profession a sense of gratitude. The large amount of attention that is now given to physical matters, since the advent of the X rays and radium into medical work, has stimulated a desire for a more complete knowledge of the phenomena accompanying radio-activity, and it would be difficult to conceive a work that answers the demand more suitably than the volume under consideration. Dr. Kaye's experience as a teacher and examiner has shown him the need for such a book, not too abstruse and not too mathematical. Indeed, this book can be read with great interest by non-mathematical students without any sense of loss of a real understanding of the physical phenomena attendant on the working of an X ray tube and radium.

The book is not a treatise on the use of radiations in diagnosis and treatment, though these matters are necessarily touched upon. Such matters as the phenomena of a discharge tube, cathode rays, the X ray bulb, factors controlling its "hardness," cause of blackening in use, X ray measurement, nature of the X rays, interference and reflection of X rays—these and many other points such as constantly arise in the mind of students of radiology are here explained so clearly that all may understand. Up to the present it has been possible to get information on these matters only by a search through various scientific periodicals, and when obtained it has been generally disconnected and incomplete. Thanks to Dr. Kaye such unsatisfactory labour is no longer necessary. The book is one that should be in the hands of everyone who is directly or indirectly interested in radio-activity.

Die dynamische Pulsuntersuchung.

Von Dr. Med. et Phil. Th. Christen, Privat-docent der Universität Bern. Mit 72 Abbildungen. Leipzig: F. C. W. Vogel. 1914. Pp. 164. Price 10 marks.

According to the author, in recent times there are three departments of medicine to the study of which exact mathematical physical data have been applied—viz., the dosage of X rays, the doctrine of fractures of bones, and the pulse.

The first part of the book deals with the mechanics of the pulse as a purely physical and mathematical problem. The results are expressed in 31 propositions before the physiological aspects of the pulse and the energy of the heart are considered. The technique of the apparatus used to study the pulse is very fully dealt with; more especially are the physics of the apparatus known as armlets filled with air—which the author calls an energometer—minutely investigated. The whole question is treated in a thoroughly scientific manner, the clinical aspects of the pulse being considered at the end.

This monograph is a most interesting and important contribution to the old, yet ever new, question of the "doctrine of the pulse," treated by one whose knowledge of physics and mathematics enables him to give the subject a strictly scientific setting. The author's own estimate of his work, by the way, is quite remarkably modest.

The Microscopy of Drinking-water.

By S. CHANDLER WHIPPLE, Gordon M'Kay Professor of Sanitary Engineering, Harvard University. With a chapter on the Use of the Microscope, by JOHN W. M. BUNKER, Ph.D. Third edition. Rewritten and enlarged with coloured plates. New York and London: John Wiley and Sons, and Chapman and Hall. 1914. Pp. 409; plates 19. Price 17*s.* net.

THE hygienic characters of a public water-supply can rarely be separated from those important to its use for technical purposes, and since the dangers to public health lie largely in the possibility of contamination by sewage organisms, attention has naturally been so largely focused upon the bacterial contents of a drinking water that the microscopic organisms forming the "plankton" of lakes and rivers, on which the æsthetic qualities of a water-supply depend and with which this work deals, have been somewhat neglected. The subject is, perhaps, more interesting to the naturalist and the water engineer than to the medical man, and it is for those in charge of public water-supplies that the book is chiefly intended. These larger organisms are nevertheless not infrequently the source of disagreeable or offensive odours and colours in drinking-waters, rendering them unfit for use, and owing to the bulk and rapid increase of the growths grave engineering troubles may occur. The appearance, therefore, of a new edition of a work dealing satisfactorily with this comparatively neglected side of the subject is welcome.

The book is divided into two portions, the first of which deals with a general consideration of the subject, and the second with a classification and description of the microscopic organisms other than bacteria found in water. The scope of the work is much larger than might be inferred from its title; the microscopical examination is associated with a study of the various factors influencing the number, variety, and distribution of various diatoms, algæ, and other organisms. This involves the relation of the plankton to the various sources from which the water is drawn, the horizontal and vertical distribution of organisms in large bodies of water, and, as affecting these matters, a very interesting study of the effect of dissolved gases and of temperature conditions at different depths and at different seasons, carried out by means of the author's thermophone. The consideration of the odours imparted to drinking waters by the excessive multiplication or the excessive destruction of micro-organisms naturally occupies an important section. The water engineer will find interesting information as to the effect of soil stripping of the sites of reservoirs and the influence of this and other factors on water storage, as also on the effect of copper treatment and aeration on the æsthetic qualities of water-supplies. Very little attention is paid to the effect of the various chemical changes described upon pipe corrosion and lead poisoning, but this appears to be due to the comparative rarity of this trouble in the United States, where, according to the author, it is hardly a practical matter. The views expressed on the importance of the surface growth on filter beds to efficient filtration are not orthodox if we follow the author correctly in some not clear writing, and the treatment of the subject is rather brief.

The second part, dealing with the classification and morphology of the more important organisms, is illustrated by a number of satisfactory photo-micrographs printed with the text. A glossary, bibliography, and index follow. The book ends with a series of 19 plates, carefully drawn and coloured, of numerous organisms, with their names and the magnification employed. There are one or two printing slips, but the book is satisfactory in appearance, type, and paper.

Handbuch der Gesamten Therapie.

Herausgegeben von F. PENZOLDT und R. STINTZING. Fifth edition, in seven volumes. Eleventh to nineteenth Lieferungen, inclusive. Vol. II., pp. 49–763; Vol. III., pp. 641–797; Vol. VI., pp. 161–640. Jena: G. Fischer. Price each Lieferung M. 3.50.

THE second volume of this great German work on treatment deals with diseases of the digestive system and diaphragm; the third volume with disorders of the organs of respiration and circulation and the male urinogenital system, excluding venereal disease. The treatment of each disease is carefully considered from every point of view, and the volumes are thoroughly up to date. The work is one that should be found in all medical libraries.

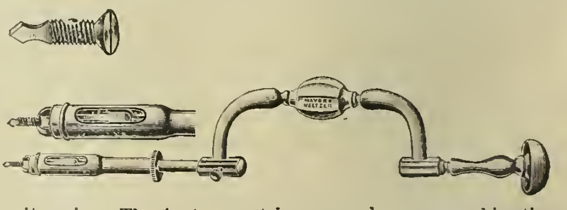
It is odd to find no reference to the treatment of enuresis nocturna with thyroid extract; Talma's operation in cirrhosis of the liver is said, without enthusiasm, to be justifiable in certain cases, and it is recommended that it should be performed under local anæsthesia; Freund's operation—the excision of portions of a number of the costal cartilages—for the relief of emphysematous patients with rigid chest walls is described as unjustifiable.

The intermittent publication of parts of different volumes—parts of vol. vi. are included in the fifteenth and sixteenth and in the eighteenth and nineteenth Lieferungen—renders the reviewing of some works published in Germany an exasperating task.

New Inventions.

A MODIFIED BRACE AND SCREWDRIVER.

I HAVE had made for me an instrument which combines a brace with a Sherman's screw-holding screwdriver. It is supplied with screws suitable for bone plates with drill ends, so that the previous use of a drill is unnecessary. These screws can be obtained either with a coarse or a fine thread. Though American surgeons prefer the latter, I have found the coarse-threaded wood screw preferable, since one is less likely to over-drive it and thus make it lose its grip. The instrument is new only as a combination and not in its separate parts. I have found that its use simplifies the technique and shortens the duration of bone-plating operations. Under favourable circumstances, it will enable the operator to plate a fractured femur in an adult in less than half-an-hour.



The makers of the instrument are Messrs. Mayer and Meltzer, Great Portland-street, London, W.

W. SAMPSON HANDLEY, M.D., M.S. Lond.,
New Cavendish-street, W. F.R.C.S. Eng.

THE LANCET.

LONDON: SATURDAY, AUGUST 1, 1914.

Presidential Address at the British Medical Association: A Chapter of Medical History.

It was formerly a reproach to British medicine that the historical side of medical science and art was neglected, but of late years that reproach has been largely removed. There is now a Section of History of Medicine among the many sections of the Royal Society of Medicine; the two Regius professors of medicine or physic at Oxford and Cambridge are zealous and accomplished medical historians; the Medical Historical Museum, generously founded and equipped by Mr. Wellcome, attracts numerous visitors; and lastly, the foundation of the FitzPatrick lectures at the Royal College of Physicians of London has given rise to numerous admirable historical works dealing either with periods of medicine or with particular phases of medicine, such as pestilence. And this week medical history holds pride of place at a representative gathering of British medicine, for Sir Alexander Ogston devoted his Presidential address, delivered at Aberdeen before the British Medical Association, to giving his hearers a history of what is claimed to be the earliest teaching Faculty of Medicine within the British Isles—namely, the Faculty of Medicine in the University of Aberdeen. The distinguished surgeon, whose address will be found published in full in the pages of the *British Medical Journal*, drew a picture of Aberdeen as it existed in 1490, a small town of possibly 2000 inhabitants trading with continental ports mainly in dried salmon, but even then an important place, for John Major, writing about 1498, says "Ea tempestate Aberdonia Scotorum erat regia." Except by sea Aberdeen was difficult of access, and this explains the remark in Pope Alexander VI.'s Bull regarding the foundation of the University: "In the Boreal and northerly parts of the Kingdom of Scotland are certain places so distant from other parts and so cut off by arms of the sea and the highest mounains, wherein live rude and illiterate men, and who on account of their great distance from spots where there are schools of learning find it dangerous to travel to where letters are studied, who, moreover, are so ignorant of learning that persons cannot even be found capable of reading the word of God, preaching, or administering the sacraments." But the Pope goes on to say that if there were a university in Old Aberdeen, which is not far from the aforesaid places, "how many inhabitants of the kingdom, and especially of that part of it, ecclesiastics and laymen both, would gladly apply themselves to the study of letters." The prophecy was richly fulfilled.

Where a desire for learning exists there is in general no long interval between the wish and its fulfilment. Full soon the Aberdonians were gratified by the advent of one who was destined to be the great benefactor of the city—namely, William Elphinstone, appointed Bishop of Aberdeen in 1483. This great man, of whom Sir Alexander Ogston gave a most interesting account, was a ripe scholar and an experienced politician. More than that, he must have been an able man of affairs. His first task, and that no light one, was to reform his diocese, and when that undertaking was well in hand he turned to other tasks—the building of a cathedral, the formation of an easy access to the city by land, and the foundation of a university. None of Elphinstone's cathedral buildings remain, but his bridge, the Old Brig of Dee, finished in 1518, still stands for all men to see. Elphinstone was fortunate both in his parentage and his relations with kings for one who was to found a seat of learning. He was the son of a canon of Glasgow who was the Dean of Arts at the University of that city. He rose to be Lord High Chancellor to James III. of Scotland, and later was Lord Privy Seal as well as a bishop under James IV. The latter monarch had a real love of learning; he introduced printing into Scotland, could speak five continental languages besides Latin, knew "the language of the savages who live in some parts of Scotland and on the islands," and sent his son to be educated by Erasmus. The Bull for the foundation of the University is dated Feb. 4th, 1494, and one year later the revenues of the Hospital of St. Germanus, which had belonged to St. Andrews, were assigned to it. On Feb. 25th of the same year Elphinstone published a proclamation that the University was now established. The faculties provided for were theology, law (both canon and civil), medicine, and arts; the endowments arising from the Hospital of St. Germanus provided for the teaching of theology and law; but Elphinstone was so concerned about medicine that within a year of the inception of the University he procured from James IV. a charter giving to "Almighty God, the most glorious Virgin Mary, all the Saints, the University and to a graduated Doctor in the Faculty of Medicine the sum of £12 6s. yearly," owing to which charter the University came to be called King's College. The first principal was Hector Boece, a friend of Erasmus. Little is known of any incidents of his headship, but this, says Sir Alexander Ogston, is possibly the best indication of the quiet prosperity which the University enjoyed under him. The first professor of medicine, or "mediciner," was one JAMES CUMING, who was appointed before 1503, and who, in addition to his university duties, was charged with looking after the health of the inhabitants of the burgh, the alderman, bailies, council, and community engaging to give him ten marks yearly and sundry other emoluments on condition that he, with his wife and children, reside within the burgh, "go and visit the sick, and show them his medicines, they paying for them." The whole story, as told by the distinguished orator to the British Medical Association, makes a fascinating picture of mediæval times, of which we are producing the merest sketch.

Sir ALEXANDER OGSTON referred to the condition of medical learning in Scotland at ELPHINSTONE'S date, and made here, we think, one statement which is capable of misconstruction. In discussing the question of whether ELPHINSTONE knew Greek, he asked whether he "knew or had heard of the writings of HIPPOCRATES, GALEN, and ARETÆUS, which were then beginning to be translated into Latin on the continent, and to revive the science of medicine, but were unknown in Britain"; and again, in talking of medicine in Aberdeen, "LINACRE had not then introduced the works of the ancient Greek physicians to the profession in this country." This would seem to imply that HIPPOCRATES and GALEN were unknown in Britain, and almost so on the continent, before about 1480. It is true that *direct* translations from the Greek were unknown to mediæval medicine before about 1453, but every mediæval physician knew the works of HIPPOCRATES and GALEN by means of translations into Latin from Arabic or Syriac, these latter having been made from the Greek mainly in the ninth century by HUNAIN and HUBAISH, while the Latin translations from the Arabic were mostly made by GERARD of Cremona in the twelfth century. The "Aphorisms" of HIPPOCRATES with the commentary of GALEN were translated into Latin in the eleventh century by CONSTANTINE the African. Aberdeen is a city of which its citizens may well be proud, but it can hardly at any period of its history have had a more worthy son than Bishop ELPHINSTONE, and it is well that one who laboured so abundantly for the welfare in general of that community, of which he was the spiritual head, and for the promotion of sound learning, including medicine, in particular, should have his good deeds recounted before an audience, many of whom are alumni of his foundation and to all of whom his example is a safe light by which to steer. It may be that after some of the discussions at the eighty-second annual meeting of the British Medical Association differences of opinion, academic or political, will remain; let us hope that these differences will be adjusted in the spirit in which the gentle and learned founder of Aberdeen University would, from what we know of his life, have met them had he been present in the body as he surely was in the spirit.

Hopeful Teaching.

WE publish in this issue several important addresses on medical and surgical subjects which have been delivered in this country during the week, notably one by Dr. A. E. GARROD, one by Sir JOHN BLAND-SUTTON, and a third by Dr. C. H. MAYO, the well-known American surgeon. The addresses of Dr. GARROD (in Medicine) and Sir JOHN BLAND-SUTTON (in Surgery) were delivered at Aberdeen at the annual meeting of the British Medical Association. The main theme of the surgical address, as our readers will find, is the need at present existing for improvement in our surgical results in certain branches of surgery. There is no stationary complacency in this interesting and amusing dissertation. Sir JOHN BLAND-SUTTON acknowledges the great advances made in recent times, but in calling attention to the enormous gift which surgical achievement received through the introduction of anæsthesia, which not only spared the patient the tortures of the operating table, but also rendered possible operations which from their duration had hardly been possible before, he makes a point which has previously escaped attention. For he shows that the facilities which anæsthesia gave to the surgeon did at the time actual harm to surgical progress. The surgeon under the new conditions was induced to undertake operations which the practice of that time did not permit him, except in a very small proportion of the cases, to bring to a successful issue, and the first results to the public were not hopeful. It was not until the researches of PASTEUR and LISTER explained and removed the harmful outcome of the old-fashioned technique, when applied to the new opportunities, that it became possible for surgeons to perform operations of an extended scope with a reasonable certainty of a favourable end. The blessings brought by the introduction of anæsthetics were recognised at once, of course, as by no means limited to the abolition of pain at operations; in the reduction of dislocations they furnished assistance for which they had not been devised. They enabled the surgeon, it was soon found, to replace a dislocated bone, which all arrangements of pulleys had failed to restore to place. But this was to some extent a side issue; until the Listerian procedure reinforced the discovery of anæsthetics surgery did not progress.

At the close of his address Sir JOHN BLAND-SUTTON deals with the surgery of malignant disease of the uterus and the colon, and in pointing out that in these two conditions surgery still has much to learn, his words confirm remarkably Dr. GARROD'S main text that the science of medicine is so complex that we cannot hope to attain any comprehensive notions while we regard one particular subject from any single point of view. The clinical worker must have his special outlook, and the pathologist his special outlook, but their interrelation must be close and their work mutually confirmatory. Removal of the uterus for fibroids, Sir JOHN BLAND-SUTTON points out, is an operation with a mortality of about 2 per cent., but removal of the uterus for malignant disease of the cervix has a mortality of from 10 to 48 per cent., and this is to be attributed almost entirely to the risk of the infection of the wound with micro-organisms from the ulcerated surface. Many of the cases die in a few days after operation from one septic process or another, such as septic peritonitis, pulmonary embolism, or septicæmia. A very similar state of affairs prevails in the results of the surgery of malignant disease of the colon, and such results cannot be considered satisfactory. Resection of a cancer of the colon is followed by a very heavy rate of mortality, usually over 30 per cent. These deaths are almost all due to septic peritonitis, resulting from infection during the operation, from leakage at the bowel junction, or from failure of union due to the colon bacillus or some other micro-organism present. And even when no septic process leads to an early death after resection of a cancer of the colon, recurrence is extremely common. Some method must be found of dealing with these septic organisms and so preventing them causing septic disease. The surgeon of the future, says Sir JOHN BLAND-SUTTON, will possess aids in his treatment of which we know nothing; he will be able to prevent many of these complications which militate so greatly against the success of operations; his diagnosis will be rendered more sure by the assistance of diagnostic methods as yet undreamed of, and the synthetic chemist will prepare for him chemical compounds which will assist him immensely in his fight against disease. This is another way, the chemical way, of putting the teaching of Dr. GARROD, who points out that morbid anatomy is not an exhausted subject, but is merely strengthening its position by calling up the supports of bacteriology and chemistry. Formerly morbid anatomy and pathology used to be synonymous terms, but as long ago as the days of LIEBIG biochemistry was making its influence felt, and now a new era of pathology has dawned, a fact which the orators at the meeting of the British Medical Association both acknowledge in their eloquent and also their characteristic styles.

Dr. MAYO'S striking address, though in a totally different manner and written as a clinical communication to a clinical audience, carries the same message of hope. He deals with the results of operations for hyperthyroidism, insisting first on the importance of a correct classification of enlargements of the thyroid gland, as a preliminary to the choice of treatment. He defines exactly what group of cases he includes under the title of exophthalmic goitre, and describes the line to be pursued accordingly. Naturally, it is in the cases which are severely affected that there is the greatest difficulty in treatment, and Dr. MAYO lays stress on the importance of looking upon all patients during an exacerbation of hyperthyroidism as medical cases, although most of them may be fit for thyroidectomy at the time they are first seen by the surgeon. In severe cases he ligates the left upper pole of the gland at first, and if this is followed by a grave reaction a week later, he ties the right upper pole, and then four months later he performs partial thyroidectomy, by which time the average patient will have gained some 22 lb. in weight, and at the same time much general improvement will have been obtained. In milder cases, in which the reaction of the ligation is less, a partial thyroidectomy may be performed a week after the ligation. He describes the methods employed in performing the various operations which he uses for hyperthyroidism, and in the case of thyroidectomy he urged the need for adequate exposure of the gland, for he believes that many of the troubles and accidents in the surgery of goitre would be avoided if the gland were sufficiently exposed. We have underlying this address the same intent to show the necessity that all-round knowledge must be relied on in the most special conditions. The physician must support the surgeon, and both must be able to draw upon the accumulating learning of the bacteriologist and bio-chemist, that the science of healing may continue to progress.

Stevens *v.* the British Medical Association.

THE second trial of the action for libel brought by Mr. C. H. STEVENS against the British Medical Association ended on July 23rd with a verdict for the defendants upon the two issues left by Mr. Justice SHEARMAN to the jury. The first trial in October, 1913, lasted for eight days and ended in the disagreement of the jury, so that the conclusion arrived at after seven days' trial upon the second occasion is a matter for considerable congratulation of the defendants. The verdict, moreover, was announced after the jury had only been absent for a quarter of an hour, which points to their having had little difficulty in arriving at unanimity. With their findings all reasonable men must agree, and every member of the medical profession will feel satisfaction in the fact that the British Medical Association in publishing an outspoken and scathing criticism of the methods of an advertising nostrum vendor did neither more nor less than that which truth and justice demanded. The plaintiff complained that he was libelled and asked for damages, and the jury found that the defendants had made good their defence, as there was no libel but only fair comment on a matter of public interest. The matter was truly one of some interest to the medical profession, but still more conspicuously of importance to the public. The documents commented upon by the defendants in their publication, "Secret Remedies, What they Cost and What they Contain," bore a strong family resemblance to others with which we are all familiar in connexion with alleged "remedies" for disease advertised by unscrupulous traders. The defendants criticised the trader's methods of traffic in plain terms, undoubtedly designed to warn the public against him, and a British jury has promptly and unanimously upheld their action. Such a result must give courage to all of us who dare the perils of actions for libel in the desire to do good and to open the eyes of sick men.

In the witness-box Mr. STEVENS told a circumstantial story of how he was advised many years ago by a medical man to go to Bloemfontein as a sufferer from tuberculosis himself; of how he went to Basutoland, and there consulted a witch doctor garbed in a blanket and a leopard skin, who made him drink a decoction of some root then unknown to him, which at first made him vomit; of how for days he vomited whenever he took the stuff till he nearly gave up all hope; and of how he ultimately was cured. This story, it is true, was somewhat discounted by his letters to a person named WIEMAN, which were put to the plaintiff in cross-examination, and which rather strongly suggested that it was WIEMAN, his prospective father-in-law, and not a witch doctor, who brought a mysterious plant "umckoloabo" to his notice, but it was a tale calculated to impress those who heard it, and presumably it gained credence from some members of the jury in October. It was, however, a feature of Mr. STEVENS's case that there was a copious lack of corroboration of an authoritative and trustworthy nature with regard to all the material points in his story. No one consulted by the British Medical Association could trace "umckoloabo" in Africa or anywhere else. One or two witnesses for the plaintiff professed to do so, and one of them, a gentleman with medical qualifications, produced what he said were specimens of it, and gave the meaning of the name as "life everlasting." Unfortunately, however, for the plaintiff, who had given the meaning of "umckoloabo" as "blood spitting," a noticeable discrepancy, the specimens exhibited by his witness when submitted to scientific examination were found to belong to a plant of a totally different kind from the specimens which he had himself brought into court. The defendants, on the other hand, suggested that there was krameria in the nostrum, which allegation the plaintiff denied. A prominent feature in Mr. STEVENS's evidence was the production of witnesses who declared that they had been cured by him of consumption. If these had been corroborated by medical men the essential point in his claims to stay the course of the disease would have been reached, but in the trial it could hardly be said to have been approached. The learned judge in his fair and impartial summing up pointed out that 29 witnesses, no doubt genuinely, believed themselves to have been cured, and left the jury to weigh this against proved instances of failure, and evidence of the probability of error in the judgments formed upon such a topic by the patients themselves. Presumably the jury appreciated as men of common sense the necessity of proof that a man has suffered from tuberculosis before he can be said to have recovered from it, and of proof that a particular agency has cured a patient, stronger than the sufferer's statement that he paid for an advertised compound of unknown ingredients, took it, and afterwards enjoyed better health than before. The jury also, no doubt, gave its full importance to positive scientific evidence as to the failure of the drug supplied by the plaintiff to affect the bacilli of tuberculosis to any extent which could render it effective as a medicine.

Nevertheless, however absurd the pretensions of the plaintiff may appear to members of the medical profession, the issue of the case was by no means a foregone conclusion, and the verdict is for that reason a cause of warm congratulation for the defendants. It is not always easy to justify and defend honest but unsparing criticism of picturesque tales told by one who claims to have benefited humanity. In the minds of some members of the lay public the medical profession has conspired to erect a ring fence around preserves which it claims as sacred for the pecuniary benefit of its members, and the person alleged to be libelled on behalf of the medical profession starts with many points in his favour. There are judges—we say it with deep regret and with an expression of profound respect for the judicial bench of our country—who are not wholly free from bias of this kind. It is perfectly natural that men having sympathies as such should not find it difficult to rid themselves temporarily of opinions which they have a right to hold in their private lives. It is, however, a matter of regret that any such preconceived views should ever render themselves apparent. The result of a case of the nature of that under comment should not depend in any degree upon chance, and yet what defendant in a medical libel action, or indeed in any libel action, would ever be found to profess to indifference as to the judge in whose court he might be about to find himself? It is a sad affair that it should be so, but we doubt if any one who has had experience during recent years in our courts would deny that there are judges whose mental attitude towards certain subjects can be predicted before the case is opened. We congratulate the British Medical Association alike on the courage with which they have taken grave risks, and on the outcome of an important trial where their policy was challenged.

PORTSMOUTH EYE AND EAR HOSPITAL.—Princess Henry of Battenberg opened a new wing of the Portsmouth Eye and Ear Hospital on July 22nd, by which the accommodation for patients has been doubled, bringing it up to 42, and comfortable quarters have been provided for the nurses. The cost of the new building has been £4000, of which the greater part has still to be raised. This hospital, which was started 31 years ago, is now the largest special hospital of its kind (omitting London) south of Birmingham.

Annotations.

"Ne quid nimis."

THE EFFECT OF "MATERNITY BENEFIT" ON MIDWIFERY TRAINING.

MOST medical men retain vivid recollections of their experiences when attending in their student days the midwifery cases prescribed by the medical curriculum. For most medical students obtain their practical obstetric experience on "the district" system, where new aspects of life, some humorous, some horrible, are presented to their gaze. Nor are medical students the only ministers of this particular form of charity; midwives in great numbers also derive their training very largely on a similar system. So that any social experiment which threatens to upset this kind of midwifery practice among the poorest classes is bound to have far-reaching effects upon the education of both medical men and midwives. "Maternity benefit" under the National Insurance Act endows a high proportion of the mothers amongst the labouring classes with the sum of thirty shillings for each confinement. It thus renders those mothers less dependent upon free attendance, and more able to engage a trained obstetrician, whether midwife or practitioner, for the occasion. Such a position is bound to affect the working of the various charities which have hitherto afforded free obstetric attendance to the poor, and incidentally to affect the "district" system of education. In passing, it may be remarked that this preference on the part of those entitled to maternity benefit for paid assistance by no means necessarily indicates any dissatisfaction with the skill of the unpaid workers, but is more likely explicable on personal grounds. The drawback of the "district" system from the point of view of the patient is the impossibility of knowing beforehand who will attend when the summons is sent, and the natural dislike of being in the hands of a total stranger on such an occasion. The extent to which the Insurance Act has actually brought about these changes has lately been investigated, at the instance of the Charity Organisation Society, in London by Mr. E. S. Kemp, who read a paper on the subject before the council of that body on May 11th last. It appears from this report that there has been a very definite and considerable decrease among the midwifery cases treated "on the district" in London directly due to the Act. To some slight extent this is due to the fact that some institutions have increased the charges formerly made, or have imposed charges where none were asked before. But in the main the decrease has been due to the utilisation of "maternity benefit" in securing the services of a paid midwife. At the City-road Hospital the reduction of out-patient cases amounts to 59 per cent., attributable mainly to this cause. In the out-patient maternity departments of the general hospitals the reduction is smaller—namely, 13 per cent. Mr. Kemp says that 6 out of the 12 general hospitals which possess such departments find some difficulty in obtaining a sufficient supply of patients for the instruction of their students, and there is no likelihood of their risking any further diminution by imposing any charge. Three others, however, do make, or propose to make, a charge; these are St. Thomas's, the London, and St. George's. Of the competition for cases in the region to the north of Oxford-street Mr. Kemp has some very scathing and pertinent remarks to make. This district is served by four general hospitals, three lying-in charities, and a women's hospital. A great deal of bribery in the form of relief is stated to exist, and little proper discrimination is exercised as to the circumstances of applicants. Unsuitable patients are accepted freely, and relief in the shape of food and maternity outfits is distributed broadcast. It is quite common for one hospital to complain bitterly that another is poaching on its preserves. That, in substance, is Mr. Kemp's indictment; and it requires an answer. He does not admit that the plea, "We must keep up our school," is any sufficient excuse for the abuses he describes. The whole subject is in need of consideration.

WILD MEN OF THE WOODS.

THE discovery in the woods near Naini Tal (United Provinces) of a wild-looking female child, whose back is covered with hair and whose actions are those of an ape, carries on an immemorial tradition. Stories of wild men and women of the woods abounded in Europe itself as long ago as the sixteenth century, when roads were few and desert and forest were everywhere. The most famous of these recitals is that of the boy of the Ardennes, told by De Humière, huntsman to Charles IX. in 1563. He had killed a dozen wolves when he noticed a she-wolf approaching, followed by a naked child, about seven years of age, who showed a desire to tear the huntsmen with her teeth. The story gained credence at the time from the fact that a mother had some years earlier abandoned an infant girl at the same spot. Simon Goulard tells of a little girl discovered in Hesse, who walked on all fours and made noises like those of a bear. She was ultimately taught to speak. The newly discovered Indian child is supposed by the natives to have been brought up by bears. It is to medical men that the task of educating these remarkable creatures was usually confided. Thus at the end of the eighteenth century the famous Virey, and then Dr. Itard, an able physician and well-known physiologist, undertook the education of a child known as the "savage of Aveyron," which had been taken in 1799 after evading capture for months, as he leapt or crept from branch to branch of the trees in the wood of La Bassine. The boy, stark naked when captured, appeared to be about 12 years old, and his body showed the cicatrices of a number of wounds, which led to the inference that an attempt had at one time been made to kill him. He was well built, active, had piercing eyes, and was ambidextrous, but the conformation of his arms and hands was that of a savage. He ran occasionally on all fours, grew in time somewhat stout, and was always dumb, but not deaf. He preferred raw to cooked food, and detested beds and clothes. Itard's patient attempts to awake his faculties were only partially successful, but led to a number of very interesting observations being made on him. He lived 20 years of a semi-civilised life, and died, still unable to use articulate speech, in 1828. His career is an ample commentary on the simple life of the noble savage of Rousseau. His character was not bad, but not brilliant. He loved freedom and loathed all forms of alcohol, but was not conspicuously grateful or amiable. His was really not a case of savagery, for any savage, even the lowest, is the inheritor of a mass of tradition and behaviour, and this creature came, as it were, fresh, and unconditioned mentally, into the world. We may most fitly compare him to the mentally deficient or to the morally retarded. The kindly Dr. Itard doubtless christened him Victor, in allusion to the many difficulties which in his case had to be overcome. (The name Victor, by the by, is sometimes given in France to a baby who has survived a very difficult labour. It would be interesting to know whether this kind of medical nomenclature has been observed by any English practitioner.) Victor's health was good. He caught small-pox almost as soon as he came within the zone of civilisation, but he recovered with remarkable rapidity, and refused all the medicines of the day with savage doggedness. The cause of his death, which occurred early in life, is not noted in the documents accessible to us. Probably he died from sheer boredom in Paris, where he was on show. Tradition is full of stories of beast children, from Romulus and Remus to Valentine and Orson. These legends are rather of the nature of totem stories than of actual records of fact, but they point to a belief that animals take kindly to human children. It is no uncommon sight, indeed, to see a very small baby on good terms with a fierce dog. But the idea that a little boy could escape the onset of wolves in a French forest in 1799 is untenable unless, as we are led to believe, he was able to climb trees and to remain in them for long periods. The story of Victor of Aveyron would stagger credibility were it not so well authenticated by eminent French medical men of the early nineteenth century.

HEAT PRODUCTION IN INFANTS.

IN a very interesting report entitled "The Gaseous Metabolism of Infants," recently published by the Carnegie Institute in Washington, Francis G. Benedict and Fritz B. Talbot discuss this question and give a very complete *résumé* of the literature bearing on the subject of heat production in infants as estimated by the direct and indirect calorimetric methods. The net result of the investigation carried out at the Carnegie Institution is to cast very considerable doubt on the accuracy of the generally accepted law of Rubner that the metabolic processes and loss of heat in infants are proportional to the extent of the body surface; Schlossmann and Murschhauser have quite recently defended this law in a series of communications. Benedict and Talbot in their report emphasise the difference between the varying metabolism of infants when they cry or indulge in voluntary movements and their relatively constant metabolism when they are asleep or under conditions of rest. Metabolism under the latter conditions they term "basal" or "fundamental" metabolism. Their inquiry has been largely directed towards a determination of this basal metabolism in different infants. To this end they have designed a very ingenious set of apparatus which can be applied to the infant in a calorimeter, and which is capable of recording graphically its voluntary movements; by a very simple attachment of a stethoscope the pulse-rate can also be recorded. They find that the pulse-rate is a fairly accurate measure of muscular exertion, whether the results are reflected in internal or external work, and that with a rise of pulse-rate there is a more or less parallel output of heat, and presumably, therefore, a more or less parallel increase in metabolism. In order that the basal metabolism may be estimated in any particular case without the disturbing factor of muscular effort, the authors make their observations only during those periods in which the readings of the kymograph and the recording stethoscope indicate that the infant is at rest. The results of observations made under these conditions prove that there is no relationship between the heat lost and the surface area, and that the law of cooling bodies does not apply; "the heat produced is more dependent on the mass of active protoplasm" This may explain the anomalously slow metabolism of fat babies and the more active metabolism of lean ones. Very important deductions may be made from these investigations with regard to the food requirements of infants, for if the loss of heat is, as Benedict and Talbot claim, proportional to the mass of active protoplasm and not to the gross weight or surface area, infants should be fed in accordance with their muscular development and tonus and not in accordance with their age, weight, or size. It is, however, quite possible that a further factor will have to be taken into consideration which has reference to rates or coefficients of metabolism, qualities which may be dependent on dietetic habits or past experiences.

THE RELATION OF PAIN TO INFLAMMATION.

INVESTIGATIONS into the nature and treatment of inflammation made at the Physiological Laboratory of Helsingfors have been published by Dr. Henri Bardy in *Finska Laekaresaellskapets Handlingar.* In his records of the numerous experiments made on the eyes of rabbits the conclusions to which he comes are concise and instructive. His investigations were stimulated by the views on inflammation advanced by Rosenbach in 1902 which were at that date unorthodox. The somewhat vague and speculative views of this writer, when stripped of their most philosophical qualities, attributed to pain a far more important part in the pathology of inflammation than had hitherto been usually granted. He accordingly treated inflammatory conditions with morphia and claimed to have thereby averted attacks of pneumonia and colds in the head. Numerous clinical observations made independently by Spiess pointed to the same conclusions; and of the four signs of inflammation—rubor, turgor, calor, and dolor—he considered dolor the most important, and that on which the other signs depended. It is pain, he suggested, which induces reflex vaso-dilatation, and this, again, is the cause of redness, swelling, and heat. When the affected area is anæsthetised by the transudation of fluid, acting in the manner of infiltration anæsthesia, the remaining three signs of inflammation subside. To his numerous clinical observations supporting this view may be added the observations made by Professor Cramer on an hysterical woman suffering from hemianæsthesia. When her body was exposed to the stings of gnats the anæsthetic areas showed no reaction, while the normal areas presented the raised red spots characteristic of gnat stings. In 1910 Bruce confirmed experimentally these clinical observations, and it is on the lines followed by Bruce that Dr. Bardy has pursued his investigations. Apart from a few insignificant details the observations and deductions made by the two are strikingly similar, and may, therefore, be cited together. When a drop of oleum sinapis is placed on the eye of a rabbit severe conjunctivitis follows, reaching its height in about 15 minutes. But if the eye is previously anæsthetised with cocaine conjunctivitis does not occur until the anæsthesia has passed off. If the eye is anæsthetised by section of the ramus ophthalmicus of the trigeminal nerve, conjunctivitis is still provoked in this eye as readily as before. But if the experiment is repeated eight days later, when the peripheral portion of the divided nerve has degenerated, even repeated instillation of oleum sinapis provokes no reaction. This indicates that the whole reflex mechanism is peripheral. Dr. Bardy has also succeeded in intercepting the conjunctival reflex both by intravenous and local administration of nicotine. He also finds that the conjunctival reaction to oleum sinapis is unhindered by extirpation of the uppermost cervical, sympathetic ganglia. When a rabbit was anæsthetised with ether no conjunctivitis was provoked until the anæsthesia passed off; but then conjunctivitis developed without any further instillation of oleum sinapis. Dr. Bardy concludes with the confession that in the past he has felt like a specious opportunist when giving codeine, morphine, opium, and cocaine for various inflammatory conditions, although the results were excellent. Now, however, he is convinced that this procedure is perfectly rational, and, though he deprecates every treatment of appendicitis other than an operation, he suggests that the frequent success obtained with opium in this disease depends on the anæsthetic action of the drug.

EXPERIMENTAL OPERATIONS ON THE SIGMOID VALVES OF THE PULMONARY ARTERY.

Dr. Alexis Carrel, in the *Journal of Experimental Medicine* (vol. xx.), describes how he has, in seven instances out of ten, successfully carried out such operations as incision, suture, and cauterisation of the pulmonary valves in living dogs. The practical significance of these heart procedures is obvious. The pulmonary valve was chosen on account of its accessibility for the immediate purpose of the operation, which was to determine its practicability and the necessary technique. The operation requires some speed of execution; it is described in four stages: 1. The stoppage of the circulation of the heart. This has already been done in different ways. The best method, and the one adopted in these experiments, was clamping in mass the pedicle of the heart by means of large soft-jawed forceps. The heart was not taken out of the pericardium, but the incision into the pericardium was large enough to permit the easy introduction of one of the jaws of the forceps under the pedicle. Handling was gentle, and to keep the heart in good condition the blood was for a time over-ventilated by means of the Meltzer-Auer respiratory apparatus. When all is ready for clamping this is done, and the heart or vessel is opened at once. It is possible to clamp for as long as 2½ to 3 minutes without subsequent trouble. When the clamp is removed the heart resumes its pulsations, and soon they become again normal. 2. Opening of the pulmonary artery. The pulmonary orifice is exposed by means of an incision made through the anterior wall at a level of, or a little above, its junction with the heart. Immediately there is a large rush of venous blood, and consequently the operating field must be narrowly walled off by silk and cotton padded towels in order to prevent the escape of the blood into the pleura. The particular operation upon the valve is then performed. 3. Closing of the pulmonary artery; through-and-through suture. The time occupied by incision of the pulmonary artery, the operation itself, and the suture of the artery varied between 1½ minutes and 3 minutes. 4. Re-establishment of the circulation through the heart. When suturing is complete the clamp is removed. Generally during the period of the interruption the heart is still beating feebly, but it may have stopped. As soon as the blood is allowed to flow from the vessels into the heart the pulsations recommence, weak at first, but very soon becoming quite normal. Care was taken not to close the pericardium before the line of suture was absolutely without leakage. The general condition of the surviving animals was excellent. They sustained no shock; usually one hour after the operation they walked about, and three or four hours after they ate and drank. The three deaths were due to different causes, all probably to be eliminated with improved technique. One died from pneumonia 20 days after the operation; one died on the table from fibrillary cardiac contractions; the third died from purulent pleurisy. These observations certainly constitute a landmark of cardiac surgery, and allow anticipation with more confidence than hitherto of the possible extension of similar proceedings to man.

THE ORIGIN OF SHOCK DURING ANÆSTHESIA.

To the numerous recent researches into the nature and causation of shock Dr. F. C. Mann has added some investigations carried out in the Laboratory of Experimental Surgery of Indiana University, and published in the *Johns Hopkins Hospital Bulletin* for July. His work was carried out entirely upon anæsthetised animals, and he is particularly careful to confine his deductions to shock occurring during ether anæsthesia; so-called "pure" shock, as seen after accidents, may possibly be due to much more complex factors than shock in the anæsthetised state. In several respects Dr. Mann supports neither Crile nor Yandell Henderson, though it would seem that he diverges from the views of the former more widely than from those of the latter. His researches lead him to the following definite conclusions: 1. It is impossible to reduce the anæsthetised animal to a state of shock by any degree of sensory stimulation, provided all hæmorrhage is prevented and the abdomen is not opened. 2. He has been unable to show that acapnia is a primary factor in the production of shock. 3. Shock is not due to disturbance of the respiration, though it is true that the respiratory centre is more quickly injured than any other vital centre by shock. 4. The vaso-motor centre is not fatigued nor depressed in shock: it is the most resistant of all the vital centres. The peripheral and untraumatised visceral arteries are constricted in shock. 5. Shock is not due to primary failure of the heart, nor to involvement of the cardio-inhibitory or cardio-accelerator mechanism. 6. It is possible to produce the signs of shock by the use of excessive heat or cold. 7. The easiest and most certain method of producing shock is by exposure and trauma of the abdominal viscera; this, judging from the literature, has been the method used by nearly all investigators of shock. 8. Shock produced by exposure and trauma of the abdominal viscera is not due alone to a paralysis of the vaso-motor mechanism of the splanchnic area; for section of the cord or of the splanchnic nerves does not produce shock, and when all the abdominal and thoracic organs are taken from an animal this "visceral organism" can still be kept alive for many hours, can digest food, excrete urine, &c. Therefore, some other cause than vaso-motor paralysis or inhibition is involved. 9. The cause of shock is the tremendous loss of red cells and fluid from the blood, due to the reaction of the splanchnic area to irritation—an acute inflammation of the peritoneum, due to trauma and exposure to the air and to changes of temperature. The great amount of this loss is apparent when it is taken into consideration that the peritoneum has an extent as great as the entire cutaneous surface of the body. The factors involved in this reaction to irritation are the same as those involved in any other local inflammatory process, and certainly do not involve the nervous system to any greater extent. The profound general effect is due to the actual loss of red cells and fluid through stasis, diapedesis, exudate, and endothelial changes. It is to be noted that some of the classical descriptions of inflammation were made from observations on the exposed omentum and mesentery. In the course of operations in which the abdomen has not been opened a loss of fluid and cells from the blood occurs. But the loss is, except when great areas of subcutaneous tissue have been exposed, comparatively unimportant. 10. Certain accessory factors which help to produce the condition of shock should be mentioned. These are muscular relaxation, decrease in intra-abdominal pressure, and impaired respirations, all of which tend to decrease the amount of blood returned to the heart. The effect of chilling and the use of hot applications should be considered. 11. Degenerative changes in the cells of the central nervous system are the result and not the cause of shock. Identical changes are produced in the nerve cells by hæmorrhage. 12. General anæsthesia of moderate depth prevents painful impulses from affecting the nerve-cells of the central nervous system. Nerve blocking under such conditions is useless so far as the prevention of shock is concerned. 13. A relatively slight decrease in blood-supply may be sufficient to depress markedly the cells of the cerebral cortex. Care should therefore be taken to exclude this factor before ascribing such depression to inhibition. 14. The use of the word "shock" should be avoided, and instead an accurate and detailed description of the patient's condition should be given. If the term be used at all it should be applied to the condition in which, without any grossly discernible hæmorrhage having occurred, the amount of circulatory fluid is greatly diminished on account of stagnation of the blood in the smaller veins and capillaries or by exudation of the fluid and cellular elements of the blood from the same.

THE DISPENSING OF ABNORMAL PRESCRIPTIONS.

IN view of the fact that last year something like 30,000,000 prescriptions were written for insured persons, and probably as many for private patients, it would be surprising if there were not some among them which dispensers found difficult to decipher or which presented perplexing features of one kind or another. Abnormal prescriptions are not as a rule due to any obscure cause, but seeing that there always have been, and always will be, such prescriptions it would be a sound policy if chemists were to adopt some regular plan for dealing with them. When any doubt arises in the mind of a dispenser as to the interpretation and dispensing of a prescription it is obviously his duty to consult the prescriber; but it happens sometimes that this is impracticable or impossible, and then the dispenser is placed in a rather difficult position. The executive of the British Pharmaceutical Conference conceived the idea of suggesting a code of rules for dealing with such difficulties, and at the annual meeting at Chester Mr. E. S. Peck opened a discussion on the subject and submitted a set of rules which might serve as a guide, subject, of course, to the discretion and well-considered decision of the trained pharmacist brought to bear upon each problem in the prescription. Before formulating these suggested rules Mr. Peck distributed a set of questions to practising pharmacists and local associations and received replies from 100 associations and 50 individual chemists; the proposed rules are therefore representative of pharmaceutical opinion throughout the country. In the case of prescriptions containing an illegible ingredient or an illegible quantity it is suggested among other expedients that the dispenser should communicate with the first dispenser, if the prescription has been previously dispensed, or confer with other pharmacists, and that failing any decision that seems to meet the case the pharmacist should decline to dispense the prescription. In the case of an apparently excessive dose the following suggestions are made: "Take into consideration the age, sex, and condition of patient, amount of excess, and frequency of dosage. Dispense generally as written all drugs frequently prescribed above the B.P. maximum, such as liquid ext. ergot, potass. iodid., potass. brom., tinct. bellad., and tinct. scillæ. If drug is a potent or dangerous one, and you know of no circumstance which would indicate necessity for large dosage, dispense the pharmacopœial maximum." In considering this suggestion it must be borne in mind that it is not put forward as a hard-and-fast rule, but merely as a suggested way of dealing with a prescription the writer of which cannot be consulted. Clearly the suggestion could not be adopted in all cases. With reference to the interpretation of prescriptions for percentage solutions it is suggested that it is advisable for the attainment of greater uniformity in practice to interpret percentage solutions as *x* grains or grammes by weight in 100 grains or grammes by weight of the solution or finished product. Regarding incompatible ingredients the proposed rule is that when the incompatible substances form a product which is harmless or unobjectionable they should be dispensed as written, but that in the case of a dangerous incompatibility it would be wiser to decline to dispense the prescription. These suggested rules were agreed to by the Conference, and it was resolved to refer the matter to the executive to take such action as may be deemed advisable. No doubt the executive will adopt the obviously desirable plan of conferring with representative medical practitioners.

LONDON INSURANCE COMMITTEE AND THE UNALLOTTED FUND.

AT a meeting of the London Insurance Committee it was announced that the Medical Benefit Subcommittee recommended that as the Insurance Committee was unable to agree as to the method of distribution to be adopted in respect of the unallotted fund, the Insurance Commissioners should be requested to distribute such moneys among the practitioners on the panel. The recommendation was adopted by 38 votes to 19. Application was made on the morning of July 29th before

Mr. Justice Bailhache by counsel on behalf of Mr. H. Bazett for an interim injunction against the London Insurance Committee to prevent them from acting on the resolution carried at their last meeting, and from disposing of any part of the balance left in the Panel Fund for 1913 until the action brought by Mr. Bazett against the committee shall have been heard and decided. A summons for an injunction was granted to Mr. Justice Bailhache, returnable to-day (Friday, July 31st). Mr. Bazett's action is for a mandamus to compel the committee to "distribute" the unallotted persons, as required by the Acts and Regulations, and for damages for breach of their agreements with him through their failure and definite refusal to do this for 1913.

Professor J. C. Bose, of Calcutta, will give a lecture before the Royal Society of Medicine, on Oct. 30th, on the Modification of Response in Plants under Action of Drugs. Professor Bose is expected to illustrate his lecture by the demonstration of experiments upon sensitive plants.

EPSOM COLLEGE.

Lord Rosebery attended the celebration of Founder's Day at Epsom College on July 25th, that being the last time on which the present headmaster, the Rev. T. N. H. Smith-Pearse, would preside after his 25 years' service. Amongst those on the platform were Sir Henry Morris (treasurer), Sir William S. Church (chairman of the Council), Sir John F. H. Broadbent, Mr. Stanley Boyd, Dr. Charles Caldecott, Dr. F. de Havilland Hall, Dr. Guthrie Rankin, Dr. Septimus P. Sunderland, Dr. Frederick Taylor, Dr. W. Essex Wynter, and members of the teaching staff.

The Headmaster briefly referred in his address to the progress which had been made by the College since his appointment, and touched upon the increase in the number of boys, the honours won in open competition, and the numerous extensions and improvements in the College buildings. He expressed his appreciation of the support which he had always received from the Council of the College, as well as from the staff and other officials at the College, and referred to the deep debt of gratitude which was owing to his wife.

Amongst the honours which have been gained direct from the school since last Founder's Day are a senior scholarship of £60 at Clare College, Cambridge, by A. R. Wood; a classical exhibition at Wadham College, Oxford, by L. V. Ardagh; an open scholarship at St. Mary's Hospital by G. V. Davies; and the Maxwell scholarship at Faraday House, London, by C. H. P. Ewbank. At the recent matriculation examination of the University of London 18 boys out of 23 had passed, six of them being in the first division. Amongst honours gained by former pupils may be mentioned a first class in classical moderations, also an honorary scholarship at Hertford College, Oxford, by H. W. Hodges; a first class in the natural science tripos, also a foundation scholarship at St. John's College, Cambridge, by G. M. Kendall; a second class in final Literæ Humaniores, Oxford, by C. A. Mallam; the Brackenbury scholarship for medicine at St. Bartholomew's Hospital by F. G. A. Smyth; and an open scholarship in arts at St. Bartholomew's Hospital by J. W. S. Dick.

Lord ROSEBERY having given away the chief prizes addressed the boys on the Formation of Character, but before doing so he observed that never, or hardly ever, had he seen the political horizon both in Great Britain and Europe so charged with clouds, pregnant with thunder, as it was that day. He stated that any boy who found after leaving school that he had taken from it no serious result of his studies would decide that he had made a mighty bad bargain of his time, and would find good cause to have remorse for his life. Having defined character, he said that from the very moment we had consciousness the world was constantly carving and chiselling at our characters. The years spent in school were far more important in the formation of character than all the years spent afterwards. The school moments decided whether they were going to be men in the highest sense of the word or whether they were going to pass through life as atoms. There was only one way by which the character of a man at its best showed itself, and that was by his manners. Of course this was not an infallible way, as he had known many excellent people who from shyness had the most execrable manners, and he had also known scoundrels with the most charming and fascinating manners used by them for much the same reason as the web was used by the spider. But those were not the manners he referred to; he meant those simple manly manners which were the index of a straightforward character. They should make their manners worthy of their character, and their character worthy of their manners: the two processes went hand-in-hand. He did not know of any profession in which manners were of so much importance as in the noble profession of medicine. Those who had been attended by a doctor must have realised the difference between the one who came in with a gloomy and austere expression, with bills of mortality condensed in his countenance, enough to take the heart out of the most courageous patient, and the doctor who instinctively seemed to spread a sunny atmosphere through the room the moment he opened the door, giving the patient a feeling of hope and encouragement. If the first doctor was the best in the world and the second was only third rate, he would a thousand times rather have the third-rate doctor with his genial manners, except perhaps for an occasional consultation.

Sir HENRY MORRIS proposed a cordial vote of thanks to Lord Rosebery, which was seconded by Sir WILLIAM CHURCH and carried by acclamation, cheers being called for him by the senior prefect.

ROYAL COMMISSION ON VENEREAL DISEASES.

Sir John Collie at the forty-eighth meeting of the Commission gave the results of some observations he had recently made in connexion with 2176 men referred to him for medical report. The 2176 men were divided into three classes: (1) 1119 whom accident or illness had overtaken; (2) 557 apparently healthy, but required to pass medical examination before entering employment; (3) 500 of the same class as the second division, but who also submitted themselves to the Wassermann test. Of all three divisions 106 were found to be suffering from venereal disease. In the first two divisions, in connexion with which clinical evidence was relied upon, 60, or 3·8 per cent., were found to be infected; in the third class, where the Wassermann test was applied, 46, or 9·2 per cent., were shown to have had syphilis. The 500 cases of those apparently in perfect health (as evidenced by a thorough physical examination) were taken consecutively as they presented themselves for examination, and no selection was made except that working-class people over 21 years of age only were chosen. 103 of the 500 had served in the army or navy, and of these 24, or 18·9 per cent., gave a positive Wassermann reaction; the percentage of positive reactions in the remainder of the 500 was only 6. Sir John Collie stated that the figures probably did not represent the full extent of the existence of the disease, for the men examined were of a somewhat superior artisan class. An interesting feature of the investigation was the fact that the Wassermann test showed a positive reaction in as many as 12, 16, and 19 years, and in one case as late as 29 years after infection, and long after all recollection of the infection had disappeared.

Mr. Frederick J. McCann, surgeon to the Samaritan Free Hospital for Women, said that it was of the utmost importance that syphilis and gonorrhœa should be regarded as common female ailments, for which the same facilities for treatment should be available as for other female ailments without any special stigma being attached to them. If proper facilities for in-patient and out-patient treatment were provided the special aspects of these diseases would to a large extent disappear. Systematic instruction in the early local signs of syphilis and the signs and symptoms of gonorrhœa was much required; this instruction should be given at the special hospitals for women and in the gynæcological departments of the general hospitals. It was essential that gonorrhœa should be regarded as a serious disease in both sexes, especially in women, and that prompt and effectual treatment was required. The medical profession could do much in this respect by impressing upon patients the gravity of the disease and the necessity for curative treatment.

Dr. A. K. Chalmers, medical officer of health of Glasgow, gave supplementary evidence at the forty-ninth meeting of the Commission with reference to the experience of the health committee of the corporation of Glasgow. He stated that ophthalmia neonatorum was made compulsorily notifiable in Glasgow in 1911, and that in the beginning an attempt was made to supervise the cases at the homes. It was, however, soon apparent that there was definite need for provision being made for hospital treatment. Arrangements had accordingly been made for this treatment, and it had been necessary in some cases to provide also for the reception into hospital of the mother. Their experience had shown that a proportion of children affected with ophthalmia neonatorum also suffered from congenital syphilis, and that the resultant defects in vision were greatest when the diseases were concurrent. In the period ending December, 1913, of 463 children suffering from ophthalmia neonatorum 13·6 per cent. were found also to be syphilitic. With regard to syphilis generally, the corporation of Glasgow had made arrangements for placing opportunities of obtaining a Wassermann test at the disposal of any practitioners who desired it; and in view of the information required with any specimen sent for examination it had been arranged to pay a fee of 2*s.* 6*d.* Between September, 1913, and June 25th last 953 equipments for the purposes of obtaining a Wassermann test had been issued to practitioners by the corporation. Dr. Chalmers was of opinion that no form of compulsory notification of venereal disease, whether for any group of persons or of cases, would effect its object. His view was that the public required not compulsion but education, and he thought that the issue of an authoritative statement showing the danger to life in after years of syphilis contracted at an earlier period and of the disastrous effect on children would help to form an educated public opinion which would at least induce those who might contract the disease to seek effective treatment, even if it failed in the ultimate purpose of inducing them to avoid exposure to it. The main problem at the present time was the organisation of means of diagnosis and treatment.

Public Health.

ANNUAL REPORTS OF MEDICAL OFFICERS OF HEALTH.

First Report on Tuberculosis and the Administration of Sanatorium Benefit in the County of Kent.—The county medical officer of health of Kent, Dr. A. Greenwood, has presented to his county council and to the Kent Insurance Committee a separate report with this title, covering some 200 pages, and well illustrated by maps and diagrams. It is permissible, on theoretic grounds, to regret the separation of one disease in this way from the many other health matters which fall within the province of a medical officer of health, and particularly where the disease is tuberculosis. It is natural to regard the introduction of the vast national schemes of the last two years as the beginning of a new era, but from the time of the earliest medical officer of health efforts have been made, and with much success, to attack tuberculosis by ascertaining and dealing with the conditions which have been associated with its prevalence, and to expedite the steady fall in its fatality which has been brought about by healthier conditions of living and social betterment. It is to be anticipated that the new organisation dealt with in this volume will be fruitful of good in various ways, but its effect can never be separated from a host of concurrent factors for the reduction of tuberculosis prevalence and mortality which are operating at the same time, and which in some instances involve administrative work far outside the scope of such a volume as this. To do Dr. Greenwood justice many passages in the volume show that these considerations have been fully in his mind, and the case for the issue of the separate volume on practical grounds is very strong. The committees of the county council and for insurance require for their administration to have just such a report and record as Dr Greenwood has put before them, and the record is creditable to both bodies. The organisation so far undertaken has evidently been well carried out, and the large sums of money made available for sanatorium benefit and special tuberculosis treatment are being judiciously expended. About 300 cases had received treatment in different residential institutions by arrangement up to the end of the year; there is as yet no county sanatorium, but a site of 54 acres has been obtained near Lenham, on the Maidstone to Ashford branch of the South-Eastern and Chatham Railway, and plans have been prepared and approved by the Local Government Board for the erection there of a sanatorium of 100 beds, with necessary adjuncts. It is proposed also to retain 75 beds for advanced cases, at a cost not exceeding 30*s.* per head per week, at existing institutions in the county, though difficulty has arisen owing to the small number of isolation hospitals at which satisfactory accommodation for the purpose can be obtained. The principal immediate progress which has been made is with the dispensary system; 18 dispensary centres have been established in different parts of the county, together with some associated calling stations. The county authorities have appointed four whole-time tuberculosis officers, at salaries of £500 with travelling and subsistence allowance, and in addition have obtained the services of two part-time local tuberculosis officers at Sheerness and at Beckenham. Five whole-time "tuberculosis nurses" have also been appointed, who attend the dispensaries and undertake home visiting. Every effort is to be made by them to secure the attendance at the dispensary of all other occupants, whether they seem ill or not, of the house in which a patient has been visited. It may be noted that nurses are instructed, where the patient is receiving domiciliary treatment from a panel doctor, to ascertain "what orders have been given by the doctor before trying to find out whether they have been carried out." The dispensaries, which are described in detail, are attended by dispensary clerks, the importance of whose services may in part be gathered by the pages of specimen forms, cards, and case papers which are given in the report. These give a good illustration of the work which has been involved and the complexity of the organisation, particularly in regard to the formalities to be observed when questions such as the provision of "nourishment ancillary to treatment" have to be dealt with. Most of the dispensaries were not established and at work until after the beginning of the year, and the figures as to their use in 1913 would thus be of little value, but their records in future reports of this series will be looked forward to with interest. The report should be in the hands of practitioners generally throughout the county, and will interest the wider medical public which is concerned with similar questions of organisation.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN the 97 English and Welsh towns with populations exceeding 50,000 persons at the last Census and whose aggregate population at the middle of this year is estimated at 18,120,059 persons, 8759 births and 3928 deaths were registered during the week ended Saturday, July 25th. The annual rate of mortality in these towns, which had been 12·7, 11·5, and 11·6 per 1000 in the three preceding weeks, declined to 11·3 per 1000 in the week under notice. During the 13 weeks of last quarter the mean annual death-rate in these towns averaged 13·8, or 0·7 per 1000 above the rate recorded in London during the same period. Among the several towns the death-rate last week ranged from 4·5 in Bath, 5·5 in Leyton, in Bournemouth, and in Devonport, 5·9 in Ealing and in Hornsey, and 6·1 in Wimbledon and in Ipswich, to 17·2 in Preston, 17·8 in Bootle, 19·0 in Lincoln, 21·9 in Middlesbrough, and 22·0 in Stockton-on-Tees.

The 3928 deaths from all causes were 90 fewer than the number in the previous week, and included 478 which were referred to the principal epidemic diseases, against 394 and 406 in the two preceding weeks. Of these 478 deaths, 209 resulted from infantile diarrhœal diseases, 98 from measles, 83 from whooping-cough, 46 from diphtheria, 28 from scarlet fever, and 14 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 1·4 per 1000, or 0·2 above the rate in the previous week. The deaths of infants (under 2 years) attributed to diarrhœa and enteritis, which had been 116, 112, and 151 in the three preceding weeks, further rose to 209 last week; of this number 34 were registered in London, 22 in Sheffield, 16 in Liverpool, 15 in Birmingham, 11 in Hull, 10 in Leeds, 8 in Manchester, and 7 in West Ham, in Bootle, and in Newcastle-on-Tyne. The deaths referred to measles, which had been 130, 139, and 110 in the three preceding weeks, further declined to 98 last week, and included 31 in London, 13 in Liverpool, 9 in Leeds, 9 in Sheffield, 5 in Birmingham, and 4 in Oldham. The fatal cases of whooping-cough, which had been 95, 77, and 73 in the three preceding weeks, rose to 83 last week, of which 19 occurred in London, 10 in Liverpool, 6 in Manchester, 5 in Salford, 4 in Leeds, 3 in Burnley, and 3 in Birmingham. The deaths attributed to diphtheria, which had been 64, 30, and 34 in the three preceding weeks, further rose to 46 last week, and included 14 in London and 2 each in East Ham, Stoke-on-Trent, Nottingham, Sheffield, and Darlington. The deaths referred to scarlet fever, which had been 23, 22, and 26 in the three preceding weeks, further rose to 28 last week, of which 4 occurred in London, 4 in Birmingham, 4 in Liverpool, 2 in Manchester, and 2 in Preston. The fatal cases of enteric fever, which had been 16, 13, and 12 in the three preceding weeks, were 14 last week, of which 2 were registered in London, 2 in Portsmouth, and 2 in Blackburn.

The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had steadily increased from 2862 to 3126 in the ten preceding weeks, further rose to 3135 on Saturday last; 414 new cases were admitted during the week, against 442, 414, and 430 in the three preceding weeks. These hospitals also contained on Saturday last 1075 cases of diphtheria, 189 of whooping-cough, 33 of enteric fever, and 27 of measles, but not one of small-pox. The 922 deaths from all causes in London were 99 below the number in the previous week, and corresponded to an annual death-rate of 10·6 per 1000. The deaths referred to diseases of the respiratory system, which had been 127, 111, and 128 in the three preceding weeks, declined to 86 in the week under notice, and were 29 below the number registered in the corresponding week of last year.

Of the 3928 deaths from all causes in the 97 towns, 169 resulted from different forms of violence and 316 were the subject of coroners' inquests, while 1231 occurred in public institutions. The causes of 30, or 0·8 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in Manchester, Sheffield, Leeds, Bristol, Bradford, Hull, Newcastle-on-Tyne, and in 74 other smaller towns. Of the 30 uncertified causes of death, 7 were registered in Birmingham, 4 in Liverpool, and 2 each in London, Barrow, Huddersfield, South Shields, and Gateshead.

HEALTH OF SCOTCH TOWNS.

In the 16 largest Scotch towns with an aggregate population estimated at 2,293,200 persons at the middle of this year, 1219 births and 592 deaths were registered during the week ended Saturday, July 25th. The annual rate of mortality in these towns, which had been 14·1, 13·6, and 12·7 per 1000 in the three preceding weeks, rose to 13·5 per 1000 in the week under notice. During the 13 weeks of last quarter the mean annual death-rate in these towns averaged 15·5, or 1·7 per 1000 above the rate recorded in the 97 large English towns during the same period. Among the several towns the death-rate ranged from 4·4 in Kilmarnock, 6·3 in Kirkcaldy, and 9·4 in Ayr, to 14·5 in Coatbridge, 16·0 in Aberdeen, and 18·1 in Greenock.

The 592 deaths from all causes were 33 in excess of the number in the previous week, and included 50 which were referred to the principal epidemic diseases, against 41 and 58 in the two preceding weeks. Of these 50 deaths, 20 resulted from infantile diarrhœal diseases, 9 from whooping-cough, 8 from measles, 8 from scarlet fever, 3 from diphtheria, and 2 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 1·1, against 1·4 per 1000 in the 97 large English towns. The deaths of infants (under 2 years) attributed to diarrhœa and enteritis, which had been 13, 10, and 18 in the three preceding weeks, further rose to 20 last week, of which 11 were registered in Glasgow and 2 in Edinburgh. The deaths referred to whooping-cough, which had been 12, 13, and 15 in the three preceding weeks, fell to 9 last week, of which 7 occurred in Glasgow. The fatal cases of measles, which had increased from 7 to 12 in the four preceding weeks, declined to 8 last week, and comprised 3 in Glasgow, 3 in Dundee, and 2 in Coatbridge. The deaths attributed to scarlet fever, which had been 1, 3, and 7 in the three preceding weeks, were 8 last week, of which 3 were recorded in Glasgow and 3 in Dundee. The 3 deaths referred to diphtheria were slightly below the average in the three preceding weeks, and showed no excess in any of the towns. The 2 fatal cases of enteric fever were registered in Glasgow.

The deaths referred to diseases of the respiratory system, which had steadily declined from 99 to 51 in the seven preceding weeks, rose to 70 in the week under notice; 27 deaths resulted from various forms of violence, against 26 and 21 in the two preceding weeks.

HEALTH OF IRISH TOWNS.

In the 27 town districts of Ireland, with an aggregate population estimated at 1,205,280 persons at the middle of this year, 604 births and 335 deaths were registered during the week ended Saturday, July 25th. The annual rate of mortality in these towns, which had been 16·2, 15·9, and 16·1 per 1000 in the three preceding weeks, fell to 14·5 per 1000 in the week under notice. During the 13 weeks of last quarter the mean annual death-rate in these towns averaged 19·0 per 1000, against corresponding rates of 13·8 and 15·5 per 1000 in the English and Scotch towns respectively. The annual death-rate last week was equal to 15·3 in Dublin (against 10·6 in London and 14·3 in Glasgow), 14·5 in Belfast, 13·6 in Cork, 15·2 in Londonderry, 12·2 in Limerick, and 13·3 in Waterford, while in the 21 smaller towns the mean rate was 13·7 per 1000.

The 335 deaths from all causes were 36 in excess of the number in the previous week, and included 38 which were referred to the principal epidemic diseases, against 38 and 43 in the two preceding weeks. Of these 38 deaths, 21 resulted from infantile diarrhœal diseases, 8 from measles, 4 from whooping-cough, 2 from scarlet fever, 2 from enteric fever, and 1 from diphtheria, but not one from small-pox. The mean annual death-rate from these diseases last week was equal to 1·6, against 1·4 and 1·1 per 1000 in the English and Scotch towns respectively. The deaths of infants (under 2 years) attributed to diarrhœa and enteritis, which had been 14, 13, and 14 in the three preceding weeks, further rose to 21 last week, of which 8 were recorded in Belfast, 6 in Dublin, and 3 in Cork. The deaths referred to measles, which had been 15, 10, and 14 in the three preceding weeks, fell to 8 last week, and comprised 5 in Sligo, 2 in in Dublin, and 1 in Belfast. The fatal cases of whooping-cough, which had been 10, 5, and 6 in the three preceding weeks, fell to 4 last week, of which 2 were registered in Belfast and 2 in Cork. The 2 deaths attributed to scarlet fever were recorded in Belfast, and the fatal cases of enteric fever and diphtheria in Dublin. In addition to the above deaths a fatal case of typhus was registered in Belfast.

The deaths referred to diseases of the respiratory system, which had been 41, 53, and 41 in the three preceding weeks, further fell to 34 in the week under notice. Of the 335 deaths from all causes, 103, or 31 per cent., occurred in public institutions and 6 resulted from various forms of violence. The causes of 11, or 3·3 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the 97 English towns the proportion of uncertified causes last week did not exceed 0·8 per cent.

THE SERVICES.

ROYAL ARMY MEDICAL CORPS.

THE undermentioned Majors are placed on retired pay (dated July 28th, 1914): Stephen W. Sweetnam and Arthur E. Milner.

Captain James A. B. Sim resigns his commission (dated July 25th, 1914).

Captain Philip C. Field is seconded for service with the Egyptian Army (dated July 1st, 1914).

The undermentioned Lieutenants to be Captains (dated July 27th, 1914): Benjamin Biggar, James D. Kidd, Charles M. Finny, Gordon Wilson, William S. R. Steven, Edward G. S. Cane, William A. Frost, William T. Graham, Francis A. Robinson, Douglas Reynolds, John S. Levack, Pierce M. J. Brett, Patrick Hayes, Thomas A. Weston, Walter Bisset, Tom C. R. Archer, William L. E. Fretz, and Charles D. K. Seaver.

Supernumerary Lieutenant Bernard Woodhouse is restored to the establishment (dated July 25th, 1914).

Surgeon-General R. W. Ford, D.S.O., has taken up duty as Deputy Director of Medical Services on the Headquarters Staff of the Northern Command.

Lieutenant-Colonel W. T. Swan has been selected for appointment as Assistant Director of Medical Services to the Western Command. Lieutenant-Colonel J. S. Davidson has been granted six months' general leave of absence home from Agra Cantonment. Lieutenant-Colonel S. H. Withers has been appointed Senior Medical Officer at Dagshai. Lieutenant-Colonel A. P. Blenkinsop has been granted four months' combined leave of absence home from India. Lieutenant-Colonel F. S. Le Quesne, V.C., has been placed under orders for service abroad. Lieutenant-Colonel J. E. Brogden has arrived home on leave of absence from Imtarfa, Malta.

Lieutenant-Colonel T. B. Beach has been appointed to hold charge of the Military Hospital at Alexandria.

Major H. O. B. Browne-Mason has been selected for appointment as Officiating Assistant Director of Medical Services at Army Headquarters, Simla, during the absence on leave of Lieutenant-Colonel A. P. Blenkinsop. Major A. H. Waring and Major L. Humphry have been placed under orders for service abroad. Major V. J. Crawford has joined at Hilsea. Major E. W. Siberry has been appointed for duty to the Central Recruiting Depôt in the London District. Major E. P. Connolly has been transferred from Rawal Pindi to Murree Cantonment. Major L. M. Purser has been appointed to the Military Hospital at Ranikhet. Major R. B. Ainsworth has taken up duty at Headquarters, Tidworth, as Specialist Sanitary Officer. Major H. R. Bateman has been appointed Specialist in Bacteriology to the Military Hospital at Shorncliffe. Major M. C. Beatty has joined at Devonport. Major J. G. Gill has arrived home for duty from Rangoon. Major A. Chopping has been appointed Registrar to the Royal Victoria Hospital at Netley. Major P. H. Henderson has been appointed to hold charge of the Reception Station at Portsmouth. Major J. F. M. Kelly has been appointed to the Military Hospital at Colchester. Major M. F. Foulds has taken up duty in the Belfast District as Specialist in Operative Surgery. Major D. Harvey has been appointed Clinical Pathologist at the Royal Army Medical College, Grosvenor-road. Major E. E. Powell has been appointed to the staff of the Military Hospital at Ambala Cantonment. Major J. H. R. Winder has been appointed to hold Medical Charge of Families, Wellington Lines, Aldershot. Major A. E. Smithson has been appointed to hold charge of the Royal Infirmary and Detention Barracks at Arbor Hill, Dublin. Major A. H. O. Young has been appointed Staff Surgeon at Jullundur Cantonment. An exchange on the roster for service abroad has been approved between Major G. M. Goldsmith and Major R. B. Ainsworth; the latter officer will now remain on the home establishment.

Captain D. P. Watson has been appointed Clinical Pathologist at the Curragh. Captain S. G. Walker has been granted four months' general leave of absence from Cawnpore Cantonment. Captain W. R. O'Farrell has arrived home on leave of absence from Egypt. Captain G. G. Tabuteau has been appointed Specialist in Operative Surgery to the Military Hospital at Cork. Captain C. M. Rigby has been appointed embarkation medical officer at Bombay. Captain C. R. Sylvester Bradley has taken up duty as Adjutant of the Royal Army Medical Corps School of Instruction at Exeter. Captain C. J. Wyatt has arrived home for duty from West Africa. Captain C. A. T. Conyngham has been transferred from the Fifth (Mhow) Division to the Ninth (Secunderabad) Division. The following Captains have been placed under orders for service abroad: P. J. Hanafin, R. T. Collins, A. L. Otway, and R. B. Hole. Captain V. H. Symons has been appointed to hold charge of the Military Hospital at Seaforth. Captain M. B. H. Ritchie has been placed under orders to join the Royal Army Medical College for the next courses of instruction for promotion to the rank of Major. Captain J. H. Duguid has been transferred from the Military Hospital at Secunderabad to Bellary Cantonment. Captain P. S. Stewart has arrived home for duty from Malta. Captain C. H. Turner has been appointed Specialist in Operative Surgery to the King George V. Military Hospital at Dublin. Captain M. White has joined at Shwebo. Captain E. C. Phelan has arrived home for duty from Barrackpore Cantonment. Captain E. D. Caddell has been transferred from the Dublin District to the Military Hospital at Chatham. Captain C. Robb has been appointed to the Public Health Department in Egypt. Captain A. A. Sutcliffe has taken up duty at the Military Hospital, Chester. Captain J. R. Foster has been transferred from Kilbride Camp to the Military Hospital at Dublin. Captain A. M. Rose has been appointed to hold charge of the Reception Station at Longmoor Camp.

Lieutenant P. Hayes has been appointed Specialist in Dermatology and Venereal Diseases to the Mhow Division. Lieutenant J. M. Elliott has been transferred from Rawal Pindi to Baracao. Lieutenant B. H. H. Spence has been appointed for duty with the Egyptian Army. Lieutenant F. C. Cowtan has been placed under orders for service abroad. Lieutenant E. C. Deane has been transferred from the Military Hospital at Bareilly to Meerut Cantonment. Lieutenant W. McNaughtan has taken up duty at Karachi on transfer from the Military Hospital at Quetta Cantonment. Lieutenant D. T. M. Large has been appointed to the Mhow Division.

Indian Medical Service.

Colonel A. O. Evans has been granted 13 months' combined leave of absence home. The services of Colonel R. W. S. Lyons have been placed permanently at the disposal of the Government of Bombay.

Lieutenant-Colonel C. R. Pearce has been appointed to the Bacteriological Department for duty at the Pasteur Institute in Burma. Lieutenant-Colonel H. E. Drake-Brockman has been granted six months' combined leave of absence home from India. Lieutenant-Colonel R. G. Turner has been selected for appointment as Civil Surgeon at Lucknow. Lieutenant-Colonel C. C. Manifold has arrived home from India.

Major J. R. J. Tyrrell has been appointed Agency Surgeon at Bundelkhand. Major A. Fenton, civil surgeon at Rangoon, has taken over charge of the duties of Superintendent of the General Hospital at Rangoon. The services of Major M. Corry have been placed temporarily at the disposal of the Chief Commissioner at Delhi. Major D. McCay has been granted four months' extension of leave of absence home from India. Major W. V. Coppinger has been appointed to officiate as Ophthalmic Surgeon to the College Hospital, Calcutta, *pro tem.* The services of Major M. MacKelvie have been placed permanently at the disposal of the Government of Bengal Presidency. Major S. R. Christophers has been appointed to officiate as Director of the Central Research Institute at Kasauli. Major J. C. Robertson, C.I.E., has been granted two months' privilege leave of absence home from India.

Captain W. F. Brayne has been appointed to officiate as Deputy Sanitary Commissioner, Burma. The services of Captain A. F. Babonau have been placed at the disposal of the Government of Assam for employment as Civil Surgeon in the Naga Hills District. The services of Captain C. H. Cross have been placed temporarily at the disposal of the Government of Madras Presidency. An exchange has been approved between Captain F. R. Coppinger, of the Indian Medical Service, and Captain J. B. Hanafin, of the Royal Army Medical Corps. Captain A. N. Dickson has been appointed Agency Surgeon of the Second Class at Muscat. Captain J. H. Murray has been appointed Senior Medical Officer at Port Blair. Captain W. D. Keyworth has joined at Poona. The services of Captain J. T. McGillivray have been placed temporarily at the disposal of the Government of Burma. Captain G. G. James has been appointed Assistant Chief Quarantine Medical Officer in the Persian Gulf. Captain P. K. Gilroy has been appointed officiating Medical Officer to the 12th Pioneers. Captain J. H. Horne has been appointed on special duty in connexion with the prevention of malarial fevers in Madras Presidency. Captain A. J. Lee has been appointed Specialist in Electrical Science to the Poona Division. Captain R. H. Bott has taken up duty at the Government Medical College, Lahore. Captain N. S. Simpson has been appointed to the Lucknow District. Captain C. H. Smith has been appointed Specialist in Advanced Operative Surgery to the Peshawar Division. Captain H. W. Acton has taken up duty at the Central Research Institute, Kasauli Cantonment. Captain G. S. Husband has joined at Lahore. Captain K. S. Singh has been appointed to the Amritsar District. Captain V. B. Green-Armytage has been appointed Resident Surgeon to the Eden Hospital at Calcutta. Captain A. J. H. Russell has been appointed Professor of Hygiene at the Government Medical College, Madras.

Special Reserve of Officers.

Royal Army Medical Corps.

The undermentioned, from the Belfast University Contingent, Officers Training Corps, to be Lieutenants (on probation) (dated July 7th, 1914): Cadet Corporal William Bryars and Cadet George Chesney.

Lieutenant Charles R. McIntosh is confirmed in his rank.

Territorial Force.

Royal Army Medical Corps.

2nd Home Counties Field Ambulance: Captain William E. Alston, from attachment to Units other than Medical Units, to be Captain (dated June 20th, 1914).

East Anglian Clearing Hospital: Major James S. Warrack, from attachment to Units other than Medical Units, to be Major (dated June 25th, 1914).

Unattached List for the Territorial Force.—Lieutenant John R. Sutherland resigns his commission (dated July 29th, 1914).

Sanitary Officers.—Major John Robertson resigns his commission (dated July 25th, 1914).

Attached to Units other than Medical Units.—James Alwin Colville Scott to be Lieutenant (dated June 11th, 1914).

Supernumerary for service with the Officers Training Corps.—Lieutenant Thomas B. Layton, serving with the University of London Contingent, Senior Division, Officers Training Corps, to be Captain (dated July 3rd, 1914).

Territorial Force Reserve.

Royal Army Medical Corps.

Captain Francis R. M. Heggs, from the Notts and Derby Mounted Brigade Field Ambulance, to be Captain (dated July 25th, 1914).

The Territorial Decoration.

The King has conferred the Territorial Decoration upon the undermentioned officers of the Territorial Force (R.A.M.C.): —Attached to Units other than Medical Units: Major John Robinson Harper, attached to the Royal North Devon

(Hussars) Yeomanry. Major William Sinclair, attached to the City of Aberdeen (Fortress) Engineers, Royal Engineers. Major Frederick Lace, attached to the 4th Battalion, Prince Albert's (Somerset Light Infantry). Major Thomas Holt, attached to the 6th Battalion, The Lancashire Fusiliers. Major William Mabsom Gabriel, attached to the 6th Battalion, The Duke of Wellington's (West Riding Regiment). Major John Boyd Jamieson, attached to the Lowland Divisional Transport and Supply Column, Army Service Corps.

THE CONVALESCENT HOME AT OSBORNE.

The King has approved of the appointment of the undermentioned to the Consulting Staff of the Convalescent Home for Officers of H.M. Navy and Army, Osborne, Isle of Wight, as from July 28th, 1914:—Sir John Rose Bradford, K.C.M.G., F.R.S., Lieutenant-Colonel E. M. Pilcher, D.S.O., R.A.M.C., and Lieutenant-Colonel O. L. Robinson, R.A.M.C.

BULLETINS OF THE NAVAL MEDICAL ASSOCIATION OF JAPAN.

Nos. 7 and 8 of these bulletins, just to hand, although printed for the most part in the Japanese character, contain a brief précis of the contents in English. In No. 7 Surgeon-Inspector S. Oishi describes two cases of nerve sequelæ following salvarsan injection with symptoms of tumour in the pons of the cerebellum, and Fleet-Surgeon K. Momose details some investigations of the antigen action of fat-free tubercle bacillus, the experiments being of theoretical interest so far as they prove that the antigen action of tubercle bacilli is not destroyed by treatment with alkali previous to the chloroform; but further researches, it is hoped, will point out how this result may be turned to practical use, as, for example, in the sero-diagnosis of tuberculosis. Among the interesting contents of No. 8 are some statistics on spinal and sacral anæsthesia at Kure Naval Hospital by Fleet-Surgeon H. Yamamoto. In most cases by-effects were absent.

THE AUSTRO-SERVIAN WAR.

Baron Louis de Rothschild and his brother, Alfons Eugen, have given £4000 to the Red Cross Fund.

CHOLERA IN THE NEAR EAST.

(FROM THE BRITISH DELEGATE TO THE CONSTANTINOPLE BOARD OF HEALTH.)

A PROLONGED absence from Constantinople has prevented me from continuing the record of cholera in the Near East since my last letter on this subject, which appeared in THE LANCET of Feb. 7th. That letter, written many weeks earlier, brought the records down to the month of November last.

Cholera in Constantinople and Neighbourhood.

It will be recalled that throughout October only occasional sporadic cases of cholera occurred in the Turkish capital. In November and December the cases became more frequent. The following figures, in continuation of those contained in my former letter, show the further course of the outbreak :—

From Oct. 27th to Nov. 2nd	...	2 cases,	0 deaths.
,, Nov. 3rd ,, ,, 16th	...	11 ,,	5 ,,
,, ,, 17th ,, ,, 23rd	...	5* ,,	5 ,,
,, ,, 24th ,, ,, 30th	...	5† ,,	3 ,,
,, Dec. 1st ,, Dec. 7th	...	45 ,,	17 ,,
,, ,, 8th ,, ,, 14th	...	47 ,,	15 ,,
,, ,, 15th ,, ,, 21st	...	18 ,,	9 ,,
,, ,, 22nd ,, ,, 28th	...	2 ,,	0 ,,
,, ,, 29th ,, Jan. 4th	...	5 ,,	1 death.
,, Jan. 5th ,, ,, 11th	...	6 ,,	4 deaths.
,, ,, 12th ,, ,, 18th	...	5 ,,	4 ,,
,, ,, 19th ,, ,, 25th	...	9 ,,	2 ,,
,, ,, 26th ,, Feb. 1st	...	4 ,,	2 ,,
,, Feb. 2nd ,, ,, 8th	...	1 case,	1 death.
,, ,, 9th ,, ,, 15th	...	1 ,,	0 ,,

* And 5 suspected cases. † And 3 suspected cases.

No subsequent cases occurred for some time, and Constantinople was declared cholera free on Feb. 24th. The outbreak had lasted from August, 1913, to February, 1914, but during those six months only 217 cases of disease, with 95 deaths, were registered. No doubt these figures were below the truth, but in any case the outbreak was a mild one throughout, and can scarcely be said to have taken on the proportions of an epidemic at any time. A little later, in March, two or three isolated cases of cholera were seen in the capital, but the port was not declared again "infected."

Cholera on the Shores of the Marmara and the Dardanelles.

Throughout last autumn and winter there was continual movement of masses of persons—either troops returning to their quarters after the war or of emigrants from the lost provinces—across the sea of Marmara and the Dardanelles. From time to time cholera prevailed among these persons, but here also the disease appears to have been mainly of a sporadic character. In view of all the circumstances, it is a remarkable and fortunate fact that it did not take on the characters of a disastrous epidemic, and this would seem to confirm the view I ventured to put forward in an earlier letter—that the cholera prevalence in this part of the world during the past two years and more has been due to a relatively non-malignant and inactive virus; that the virus has acquired these qualities during the many years that have elapsed since it reached Europe from its epidemic home in India; and that if this prevalence had been brought about by a fresh importation from India there would have been a very different tale to tell. At Rodosto, on the Marmara, 12 cases of cholera with 8 deaths occurred late in September and early in October. Some isolated cases were seen in October at Kalémi, in the Marmara islands, and at Silivri, between Rodosto and the capital, and at Derinjé on the Gulf of Ismidt. Later, further cases were seen at Rodosto and at Callicratia, on the Marmara. At Gallipoli and Boulair (the fortified isthmus of the Gallipoli peninsula) cholera caused a considerable mortality in October last. At one time 40 cases were simultaneously under treatment in the military hospital at Boulair. Later on, in January, and again in April and May, some sporadic cases occurred in Gallipoli and at Tchanak Kaleh, in the Dardanelles. They seem to have been confined to the troops and their number was small throughout. Typhus fever, indeed, has caused a far higher mortality among the returning troops and emigrants than has cholera.

Cholera Elsewhere in Turkey.

In March, April, and May cholera prevailed to some extent in the garrisons of Adrianople and Kirk Kilissé. Something over 100 cases of the disease were officially admitted to have occurred in Adrianople alone. The outbreak here appears to have come to an end about the middle of May. In Smyrna only occasional imported cases were seen after Oct. 12th (the date down to which the records were brought in my last letter). At Aivali, on the coast of Asia Minor, north of Smyrna, 9 cases of cholera, with 4 deaths, were registered in January. Imported cases of the disease have also been reported from time to time from Trebizond, Kavak (at the northern end of the Bosphorus), and elsewhere.

Cholera in Roumania.

Cholera continued to prevail in different parts of Roumania until early in December, as shown by the following figures (in continuation of the table published in my last letter) :—

From Oct. 6th to Oct. 14th	... ...	313 cases.
,, ,, 14th ,, ,, 21st	... ...	293 ,,
,, ,, 21st ,, ,, 29th	... ...	43 ,,
,, ,, 29th ,, Nov. 5th	... ...	10 ,,
,, Nov. 5th ,, ,, 14th	... ...	? ,,
,, ,, 14th ,, ,, 22nd	... ...	16 ,,
,, ,, 22nd ,, ,, 29th	... ...	0 ,,
,, ,, 30th ,, Dec. 7th	... ...	2 ,,

The last cases of cholera in Roumanian ports occurred respectively in Balatz on Oct. 2nd, in Braila on Oct. 8th, and in Kustendje on Oct. 12th. Since the above-named dates Roumania appears to have been entirely free from cholera.

Cholera in Austria-Hungary.

The cholera infection lingered on in different portions of the Austro-Hungarian empire until the middle of December. In Austria proper, where it will be recalled 25 cases with 13 deaths occurred before the end of September, no further cases were seen after that date. In Hungary the epidemic was more severe and lasted longer. Through October the weekly bulletins were not received here, but it was announced that the following places had been declared infected with cholera: Illyed, in the county of Krassi-Szörény; Gerebenz, in the county of Temes; and Unglovasd, in the county of Ung. On Oct. 25th a case of cholera was seen on a Danube steamer at Budapest, but no other cases appear to have occurred here. Later the following weekly bulletins for all Hungary were issued:—

From	Nov.	2nd	to	Nov.	8th	...	51	cases,	22	deaths.
,,	,,	9th	,,	,,	15th	...	?	,,	?	,,
,,	,,	16th	,,	,,	22nd	...	29	,,	17	,,
,,	,,	23rd	,,	,,	29th	...	11	,,	5	,,
,,	,,	30th	,,	Dec.	6th	...	4	,,	7	,,
,,	Dec.	7th	,,	,,	13th	...	5	,,	2	,,

On Dec. 18th a labourer in a factory at Uzverbasz, in the county of Bacs-Bodrog, was attacked with the disease, and this appears to have been the last case of cholera in Hungary, or indeed in the whole empire, and on Dec. 29th the country was officially declared cholera-free.

For Croatia-Slavonia the following figures were published:

From	Oct.	6th	to	Oct.	12th	...	62	cases,	22	deaths.
,,	,,	12th	,,	,,	20th	...	57	,,	26	,,
,,	,,	21st	,,	,,	27th	...	12	,,	6	,,
,,	,,	27th	,,	Nov.	3rd	...	16	,,	9	,,
,,	Nov.	3rd	,,	,,	10th	...	20	,,	7	,,
,,	,,	10th	,,	,,	17th	...	3	,,	2	,,
,,	,,	17th	,,	,,	25th	...	11	,,	6	,,

The last case of cholera in Croatia-Slavonia appears to have occurred on Nov. 27th, and the provinces were declared free from the disease on Dec. 12th.

In Bosnia-Herzegovina cases of cholera in small numbers occurred during October and November, at Sjekovac, Zenica, Kostajnica, Bosnich-Brod, and some other places. By the end of November the outbreak was almost extinct, but at Zepcé a few cases of cholera were seen before Dec. 18th.

It will be remarked that this epidemic covered a very considerable portion of Austria-Hungary, but it was nowhere very severe. The districts most affected were the Hungarian counties of Bacs-Bodrog and Torontal bordering on the river Drave and the Slavonian provinces lying between the Save and the Drave.

Cholera in Russia.

Last year's cholera epidemic in Russia was a mild one and was confined mainly to the southern governments. The following weekly bulletins were issued:—

From	August	20th	to	August	30th	...	16	cases,	5	deaths.
,,	,,	31st	,,	Sept.	6th	...	?	,,	?	,,
,,	Sept.	7th	,,	,,	13th	...	34	,,	15	,,
,,	,,	14th	,,	,,	20th	...	48	,,	24	,,
,,	,,	21st	,,	,,	27th	...	41	,,	20	,,
,,	,,	28th	,,	Oct.	4th	...	42	,,	15	,,
,,	Oct.	5th	,,	,,	11th	...	27	,,	9	,,
,,	,,	12th	,,	,,	18th	...	23	,,	4	,,
,,	,,	19th	,,	,,	25th	...	17	,,	6	,,
,,	,,	26th	,,	Nov.	8th	...	14	,,	5	,,

(All the above dates are according to the New Style.)

The total number of cases in the whole empire was placed at 269 and that of deaths at 120. The only provinces affected were the governments of Kherson, Taurida, Bessarabia, Kief, Poltava, and Ekaterinoslav. Of these the government and town of Kherson suffered most; 152 cases with 69 deaths were registered here.

The epidemic in Russia came to an end in November; but quite recently (on July 9th) a fatal case of cholera was reported from Kherson, and a revival of the outbreak there may be anticipated; but there is every reason to believe that in Russia, as in Turkey, Austria-Hungary, and Roumania, the cholera infection has lost its virulence, and to hope that if epidemics do recur here they will be essentially of a mild and non-malignant character.

Typhus Fever in Turkey.

As stated above, typhus fever has caused more serious ravages among troops and emigrants in this country during recent months than has the cholera. The returns are exceedingly imperfect, and before the month of March no figures were published. Since then the following returns for the whole empire have been issued. During March 278 cases with 98 deaths were registered, of which 189 cases and 82 deaths occurred among troops and 89 cases with 16 deaths in the general population. In April the cases rose to 509 and the deaths to 110; of these, 321 cases and 84 deaths were ascribed to troops and 186 cases with 28 deaths to the general population. In May there were 335 cases with 99 deaths, of which 251 cases and 55 deaths occurred among troops and 84 cases with 44 deaths in the general population. The tables include places as widely apart as Constantinople, Adrianople, Adalia, Angora, Jerusalem, Aintab, Gallipoli, Sivas, Van, Broussa, Erzeroum, Beirut, and many others. There is no question that the published figures are considerably below the truth, for in some instances—e.g., Gallipoli—where separate returns have been received, these have greatly exceeded the total recorded in the tables. At the same time, there is no reason to suppose that the disease has anywhere caused a very violent epidemic, and there has been nothing to compare with the appalling mortality that occurred in the Turkish capital after the Russo-Turkish war in 1878.

Constantinople, July 13th.

Home and Foreign Notes.

(FROM OUR OWN CORRESPONDENTS.)

LIVERPOOL.

A Ward for Tropical Diseases at the Royal Infirmary.

The "Sir Alfred Jones Tropical Ward" at the Royal Infirmary was opened on July 23rd by the Countess of Derby. There were also present the Earl of Derby, Sir Thomas Barlow, Sir Ronald Ross, Sir William Lever, Sir Alfred Dale (Vice-Chancellor of the University), the Lord Mayor and Lady Mayoress, Mr. H. Wade Deacon (chairman of the hospital), Mr. F. C. Danson (chairman of the Tropical School), Mr. O. Harrison Williams, members of the committee and honorary and resident medical staffs of the Royal Infirmary, and many others. Mr. Danson, who presided, said that the ward represented an important development in the work of the school. It also involved some little change in their work. When the school first started 15 or 16 years ago it at once became apparent that they could not do really satisfactory work without giving the teachers and students an opportunity of studying the tropical diseases at the bedside. That difficulty was overcome by the generous and spontaneous assistance of their good friends at the Royal Southern Hospital, who placed a ward aside for the treatment of tropical diseases. He acknowledged the indebtedness of the school to the Southern Hospital for the assistance they had rendered. The Tropical School, however, grew out of the accommodation possible for the Southern Hospital to give them. It was perfectly obvious that the Royal Infirmary was the proper site for the ward of the school, owing to its proximity to the University. Hence they negotiated with the Royal Infirmary, and that ward was the result. He trusted that the new ward would thoroughly fulfil all the objects they had in view. As a teaching institution it would be of the utmost value, and he trusted it might also prove a source of relief to the suffering ones who might come there as patients. The Countess of Derby said she had great pleasure in declaring the ward open, and wished it every success as an adjunct to the Royal Infirmary. Mr. Danson then formally asked the chairman (Mr. Wade Deacon) to accept on behalf of the infirmary the new ward from the school committee.

A Luncheon to Sir Thomas Barlow.

Subsequently Sir Thomas Barlow was the chief guest at a luncheon given in the Adelphi Hotel by Mr. Danson in his capacity as chairman of the Tropical School. Following the loyal toast, the company, in silence, drank "The memory of our Founder, Sir Alfred Jones." Mr. Danson, in offering the toast of "Sir Thomas Barlow," said their guest was a member of the Advisory Committee on Tropical Diseases, and was more or less directly interested in the work the Liverpool School was doing. He trusted that what Sir Thomas Barlow had seen and heard that day of the work for the development of the study of tropical diseases had favourably impressed him, and that he would be able to report to his committee in such a manner as would meet with their approval and result in the Liverpool School getting an increased grant in the near future. Sir Thomas Barlow, in responding, paid a warm tribute to the personal character and life work of Sir Alfred Jones. The Liverpool School of Tropical Medicine, he said, had long since passed through the experimental stage. Its numerous expeditions, carried to the very homes of death and disease, had afforded records full of real actual romance. Those expeditions, followed up by protracted researches in the school, had not only elicited valuable additions to the natural history of the diseases investigated, but had been justified up to the hilt by the actual improvement in the health conditions of the districts concerned from carrying out the lessons enforced by research. The school and its workers had lived through the half-hearted Laodicean criticisms of people who ought to have known better, and who had not the courage of their convictions, and now it had received recognition for its work. The workers of the school had given the greatest of all proofs of devotion by being ready to sacrifice their lives in the cause of science and humanity. The second great achievement of the school had been its instruction given in tropical medicine and hygiene to post-graduates, especially those who had already had some tropical experience and who had desired to increase their knowledge as to the accurate recognition of tropical disease and to get some acquaintance with the methods of dealing with it. "When one reads the accounts of the faulty hygienic conditions in many of our tropical colonies, especially in the native compounds," said Sir Thomas Barlow, "one is tempted to say, 'Who is responsible for these things.' The scientific study of tropical diseases shows conclusively where and how the doctor should begin and which particular measures would rapidly repay efforts and expenditure." At Liverpool they now had the first stage of research, which happily went on; the second stage of post-graduate teaching which would still continue; and they were about to take on a third function, that of bringing the study of tropical diseases within the curriculum of the medical undergraduate that was within the school itself. The association of the study of tropical diseases with that of general medicine could not be too close and intimate. The teacher, as well as the advanced student, could not be too solicitous to maintain a wide and comprehensive outlook, and to keep all his methods of examination up to the highest pitch of accuracy, while the real justification of this third step was the bringing of the laboratories and the sick man close together so that there might be the readiest possible facilities for identifying the real cause of the disease. He thought that the arrangement which would now exist was almost ideally complete. They had a constant succession of men of high scientific attainment bringing forth treasures new and old from their investigations far afield and from their laboratory researches. The new departure represented by that ward had a beneficial bearing upon the citizens of Liverpool. Everything that widened and strengthened the culture of their young doctors was a matter of profound importance to them. In their generous efforts on behalf of that school the citizens had had in their minds the health and vigour of their own countrymen in the great dependencies of the empire.

University of Liverpool: Medical Faculty.

Sir Victor Horsley, F.R.S., will deliver an address at the commencement of the winter term on Oct. 9th.

Heswall Sanatorium Enlargement.

At the last meeting of the West Derby guardians the union clerk (Mr. Harris P. Cleaver) submitted a letter which it was proposed to send to the other unions in Liverpool inviting them to share in a scheme for the enlargement of the sanatorium at Heswall so as to increase its accommodation from 50 to 106 beds. The scheme includes provision for the enlargement of the staff quarters. The undertaking is to cost £7000, and, on the basis of a 20-years' loan, the charge to West Derby would be £196 per annum, to Liverpool parish £196, and to Toxteth Park £98. Of the beds, West Derby and Liverpool parish would have 22 each and Toxteth 12. The letter stated further that the joint hospital committee in considering the matter had regard to the fact that a considerable number of children whose parents are in receipt of outdoor relief are in serious need of sanatorium treatment, and the committee trusted that the guardians would give due consideration to this important matter in considering the proposals submitted. Dr. Grimes, in proposing the adoption of the report, said they had at Heswall one of the finest sanatoriums in the country so far as its extent would allow, though it was too small. They had no hesitation in strongly recommending the guardians to agree to the expenditure of the moderate sum proposed in order to more than double the accommodation. The proposition was carried unanimously.

July 28th.

SCOTLAND.

Public Health Congress in Edinburgh: Child-Welfare Exhibition.

IN connexion with the Section on Child-Welfare an exhibition was held dealing with this subject, and was open for three days. As stated in the programme, it was "intended to be a means of helping mothers to understand better how to keep their children in good health, and a guide to health visitors in carrying out their difficult work." As such it can only be described as a complete success. In addition to providing interesting exhibits and many excellent practical demonstrations by nurses, medical men, and social workers, it drew to itself a large number of health visitors, district nurses, and poor mothers, thus reaching the classes for which it was intended. No price was charged for admission.

Proposed Chair of Tuberculosis for the University of Edinburgh.

The Edinburgh University Court at its meeting on July 20th received and approved a proposal from the honorary secretaries of the Royal Victoria Hospital for Consumption that a chair of Tuberculosis should be founded in connexion with the school.

The National Insurance Act.

The following letter has been issued by the Local

Government Board to secretaries and medical officers of poorhouses :—

> It has been brought to the notice of the Board that in certain cases the medical officers of poorhouse hospitals have refused to grant medical certificates to insured persons who are inmates of the hospital, thereby depriving them, when they leave the institution, of their right to sickness benefit for the period of total incapacity during their stay in hospital. The Board are of opinion that it is the duty of the poorhouse medical officer to afford to insured persons who are inmates of the poorhouse full facilities for obtaining the benefits of the National Insurance Act, and they accordingly instruct that, in future, medical officers will, in cases of total incapacity, grant certificates showing the cause of the incapacity of the insured person, when required to do so, for the purposes of his Approved Society.

New Veterinary College for Edinburgh.

As indicating the progress of veterinary science in the city the laying of the foundation-stone of the new buildings of the Royal (Dick) Veterinary College, Edinburgh, is of interest. The ceremony was performed by the Marquis of Linlithgow in the presence of a large gathering. It is intended that the new building shall be a type of the model veterinary college of the present day. So much has the work expanded of recent years that the accommodation at the old college has long been overstepped.

July 28th.

PARIS.

The Menace of Dust and Flies.

M. Henri Schmidt and M. Justin Godart have carried the war against dust and flies into Parliament by the introduction of a Bill which forbids, under penalty of a 500 francs fine—with one to three days' imprisonment for a repetition of the offence—"the exposure or sale on the public way of foodstuffs intended to be eaten in the raw state, unless they are completely protected against flies and dust." A lay journal publishes the results of its interviews with representatives of both the shopkeepers and the street hawkers. The first contend that though the object of the Bill is praiseworthy the measure is impracticable, for the maximum of possible precautions are already taken; whenever possible the commodities are covered with fine gauze, waxed paper, or tinfoil. But it would be impossible to apply such measures, for instance, to a sausage or a pâté sold in cut slices, which must be exposed to the view of the customer, and the same, it is alleged, applies to fruits, salad, vegetables, and cheeses. Even if they were displayed under a glass case, it would have to be so continuously opened that it would be finally left open. Such a measure would necessitate the abolition of the display of such goods in front of shops, for which tradesmen pay large rents to the municipality. The hawkers also consider the measure impracticable, for their ordinary customers insist on handling the goods to satisfy themselves of their quality and to make their choice. All tradesfolk are united in the opinion that it would be entirely impossible to shelter their wares from flies, and insist that the only practicable measure is the energetic destruction of flies and the abolition of their breeding places, which are found especially in the public lavatories and the manure heaps and dairies and gardens.

Painless Childbirth.

Professor Ribemont-Dessaignes has communicated to the Académie de Médecine the discovery of a new remedy for totally suppressing the pains of childbirth. It is prepared by cultivating brewer's yeast in a solution of morphia hydrochloride, in which, as the result of oxidation processes, a new alkaloid is precipitated, which presents none of the characteristic chemical reactions of morphia, and especially is much less toxic. Its discoverers think that it has a special local action. In reality, it acts on the nervous centres and the great sympathetic. The uterine contractions become entirely free from pain, without any interference with their rhythm, as is shown by tracings with Fabre's apparatus. Labour is not retarded, but is even somewhat accelerated. The loss of blood after delivery is in no way affected. Perineal tears appear to be less frequent, for the perineum stretches with less resistance when sensation is abolished. An injection of 1, 2, or 3 c.c. of this substance is made under the skin of the abdomen when labour has begun and the os is dilated to the size of a shilling. Analgesia is complete in a quarter of an hour at most, without loss of consciousness and without the patient being prevented from conversing. Hardly any headache is experienced. Analgesia persists for seven hours. There does not appear to be any contra-indication, for neither albuminurics nor eclamptics have had their condition aggravated by its use. The child shows no signs of intoxication, unless it be occasionally some slight cyanosis and a little delay in the first drawing of breath; but these cases are very rare, and it has always sufficed to place the child head downwards and to make mouth-to-mouth insufflation to dispel this slight difficulty. Death has never resulted. Professor Pinard, who has made similar tests in his hospital, confirms the good results claimed by his colleague, and because he thinks that the new method will speedily become popular he insists on the necessity for warning the families not to be alarmed at these incidents of birth. M. Bazy has also employed the drug in his surgical service in operations on the prostate and urethra. He has shown that when it is used in combination with local anæsthesia by cocaine it considerably augments the effect of the latter, and when general anæsthesia has to be used a considerable economy of chloroform is effected by the use of this method. Among the Academicians present some took exception to the fact that the chemical nature of the product does not appear to have been given in sufficient detail. M. Bourquelot thinks it has to do with "oxydi-morphine," which is produced by the action of the most diverse oxidases upon morphia, and particularly by the effect of mushrooms; the product thus obtained is, however, insoluble.

The Esperanto Medical Congress.

The Tenth International Congress of Esperanto will be held in Paris from August 2nd to the 10th. The Universal Esperantist Medical Association (T.E.K.A.), which counts among its honorary members Professor Bouchard, Professor Richet, Professor Gariel, Professor Broca, and other eminent men, will bring to Paris numerous medical delegates from different nations, all enthusiasts in regard to the auxiliary language. Meetings will be organised in one of the amphitheatres of the Faculté de Médecine, at which various questions of technical and professional interest will be publicly discussed in Esperanto.

July 28th.

Correspondence.

"Audi alteram partem."

ISOLATION OF DIPHTHERIA CASES.

To the Editor of THE LANCET.

SIR,—In THE LANCET of July 18th Dr. Lovell Drage, for 27 years the medical officer of health of a rural district, has written regarding the "futility of hospital isolation," and quotes a couple of instances from his own district in support of his allegation of this futility. Inferences drawn from two cases only must be regarded with suspicion, since error may arise through paucity of data. I am sure that Dr. Drage will recognise this. He seems to think that his opinions on the futility of isolation hospitals have the support of Dr. E. H. Snell, who read a paper recently at Blackpool on the Utility of Hospital Isolation of Diphtheria, although in the opening lines of this paper Dr. Snell remarks, "I must disclaim any desire to pose as an opponent of the isolation of diphtheria."

Dr. Drage, stating the total number of cases of scarlet fever and diphtheria in 1913, as against the total numbers in 1912 and 1911, in support of his hypothesis of futility, forgets, not only that the population of England and Wales has increased during these years, but also that it is not statistically sufficient to take so short a period as three years in order to prove his case. He neglects also the fact, well known to epidemiologists, that in certain years or groups of years such diseases may be epidemic. It is, of course, a debatable point whether the incidence of diphtheria or scarlet fever is reduced by means of isolation hospitals, but the charge of futility can hardly be proved by such insufficient statistical facts as are provided for us by Dr. Drage.

In regard to diphtheria, the figures given by Dr. Snell are not above adverse criticism. He lumps together eight towns which are without isolation hospitals for diphtheria, and shows that the attack-rate of this disease per 1000 of population in these towns is less than in towns which are supplied with isolation hospitals. He infers from this that the presence of an isolation hospital favours the presence of diphtheria. It is equally evident that the absence of diphtheria obviates the need for an isolation hospital. Presumably, in these eight towns diphtheria has not been epidemic, and for that reason no hospital for the disease has been required. Dr. Drage has failed entirely to appreciate the benefit of isolation hospitals in the treatment and cure of disease, nor does he take notice of the inconveniences and financial loss which may fall upon the ratepayer who is forced to keep his infectious relative or servant at home. An isolation hospital is an excellent investment of the ratepayers' money as an insurance against such disabilities, and in that respect corresponds in *utility* to the other hospitals and cottage hospitals scattered throughout the country.

Again, both scarlet fever and diphtheria may be serious diseases. Why should not they, like other diseases, receive adequate institutional treatment? Dr. Drage will, I am sure, agree with me that cases, say, of acute rheumatism or of pneumonia are more likely to get well in hospital than if they are nursed amid squalid surroundings or in poverty-stricken homes. In my experience, diphtheria needs most careful nursing, and I know of no other illness (with the possible exception of enteric fever) where the life of a patient depends so entirely upon proper treatment and nursing.

That the case mortality or fatality is less in towns with isolation hospitals can be worked out from the figures quoted in the paper of Dr. Snell with regard to diphtheria. I am not able to give any comparable figures relating to scarlet fever. It is known, however, that scarlet fever is a much less severe disease to-day than formerly it was. There must be several factors in the diminution of its virulence, in the comparative absence of the severe and septic cases. And one of the reasons, as Dr. Drage will perhaps allow, may be that people who are ill with scarlet fever are removed from dirty homes to clean hospitals.

I am, Sir, yours faithfully,
A. T. NANKIVELL,
Medical Officer of Health of the Borough of Poole.

July 23rd, 1914.

ORAL SEPSIS AND THE EXTRACTION OF TEETH.

To the Editor of THE LANCET.

SIR,—It is good to find in your pages the considered opinion of Sir James Goodhart with regard to the wholesale extraction of teeth, now so common, and at a meeting of the Harveian Society not long ago one was glad to meet with similar protests. It is, of course, recognised that in many cases extraction of teeth is the treatment necessary, and I am on record in your columns to this effect (1906). Apart, however, from differences of opinion in the interpretation of radiograms as to actual conditions present and the treatment thereof, a great divergence seems to have arisen in connexion with "preventive treatment," and one line of argument seems to be as follows: Gingivitis is an early stage of pyorrhœa. If the patient has no pyorrhœa now so much the better, but he must take no risks and lose his teeth lest a worse thing come upon him. It is further urged that by removing the teeth whilst the alveolus is healthy, the latter will not be absorbed and will afford good support for artificial substitutes. But the "extractors" are not taking themselves alone along the easy way; unfortunately, impressionable students are being taught the steps. I have in mind a candidate for the L.D.S. diploma who, having examined a case of inferior protrusion in a young girl, was asked if he could suggest any treatment. He blithely replied that all the teeth should be removed. As soon as the examiner recovered he ventured to ask the reason for such a decision, and received the reply that a probe could be passed between the teeth and the gums. The word "millimetre" was used, perhaps to give the impression of scientific accuracy, but the candidate appeared to be honest in his belief. Sir James Goodhart says that "an exaggerated view is too frequently taken of trivial conditions of the buccal mucous membrane." May I quote in confirmation one of the most striking cases I have recently seen. A young medical man, having a history of some abdominal trouble, said that a provincial dentist had condemned him to lose all his teeth. The patient had allowed two to be extracted, and had been sent to town for a second opinion, taking with him the now fashionable sheaf of radiograms. These did not appear to throw much light (or shade) on the matter, but the verdict was confirmed. When

I saw him later there was no trace of pyorrhœa: there was no recession of gums; they were of a healthy pink colour with the exception of a very slight gingivitis localised to one lower incisor. There was no caries, the teeth were quite firm, and I hope that he has them still. Many will agree with Sir James Goodhart "that a harmful practice has come into vogue that needs to be held up," and will welcome his assistance.

I am, Sir, yours faithfully,
Portland-place, W., July 27th, 1914. SIDNEY SPOKES.

To the Editor of THE LANCET.

SIR,—Having read Sir James F. Goodhart's letter in THE LANCET of July 25th, I am writing to say that in relation to throat, nose, and ear surgery it is of the greatest importance to extract all carious teeth and treat pyorrhœa alveolaris; it is even well, too, to scale all teeth carrying tartar previous to all such operations. It is truly remarkable, but no less the case, to observe the coincidence of the septic mouth and nasal suppuration, sinus disease, and aural discharges, and to attempt to improve these without sweeping away all affected teeth is absolutely futile. An extended experience has also proved to me the close connexion between the septic mouth and septic tonsils, and the danger of enucleating such tonsils without having first made the mouth clean by extracting all bad teeth.

So far from there being too much dental interference in the way of extraction, in my opinion there has not been nearly enough, and if there has been any "remissness" it has been in leaving evident and aggravated septic conditions in the mouth to drift on indefinitely.

I am, Sir, yours faithfully,
WM. STUART-LOW, F.R.C.S. Eng.
Harley-street, W., July 27th, 1914.

To the Editor of THE LANCET.

SIR,—Sir James Goodhart's protest against the mental obsession of pyorrhœa that has taken hold of the medical, and especially the dental, profession is very timely, and coming from such an authority it is to be hoped it will receive the attention and consideration that it deserves.

When oral sepsis was first suggested years ago as a causal factor in many conditions of ill-health, one remembers with some gratification cases in which one was able by examination of the mouth and condemnation of the teeth "to put the finger on the spot" and clear up the trouble. But now the tables are turned and the patient comes with the diagnosis from the dentist: "The dentist says the cause of my anæmia (or whatever the ailment may be) is my teeth and they must all come out." And, as Sir James Goodhart points out, when one comes to examine the mouth one finds in many cases a trivial gingivitis, often quite localised, which readily yields to treatment.

These conditions have assumed such a magnitude of importance in the professional mind as causal factors of disease that their relative position as *results* of ill-health appear to be entirely overlooked. But actually the oral affection is the result of a depressed vitality from some other cause in many more cases than it is the primal cause of the disease. In such cases, leaving aside the brutal mutilation involved, extensive extraction of teeth often has a most disastrous effect upon the already depressed vitality of the patient.

It is incumbent upon the leaders of the profession, and especially of the dental profession, to take steps to bring about a more steady mental balance on this question, for, as Sir James Goodhart says, a good many of us have lost our heads, and unfortunately when we lose our heads it is the innocent, ignorant, trustful public who suffer. When it is only a question of drinking a few gallons of sour milk or paraffin the issue is not vital, but when it involves extensive mutilation of the body it is incumbent upon the more level-headed among us to protest with all the power at our command.—I am, Sir, yours faithfully,
Streatham, July 25th, 1914. LOUIS STAMM.

To the Editor of THE LANCET.

SIR,—Many dental surgeons will thank Sir James Goodhart for uttering a protest against the wholesale extraction of teeth now so prevalent. It is perfectly true that, as he says, teeth are "pounced upon" as the cause of many disorders, including cancer, and it is a matter of great difficulty to persuade patients that they have not got pyorrhœa when their medical attendant assures them that they have. When we hear of aged persons going through the severe operation of multiple extractions from which they do not always recover, and of others who have bartered their powers of mastication and speech and altered their features for a problematical benefit, it is time somebody spoke out. At the same time the other extreme must be guarded against—that of preserving and scaffolding up loose and septic teeth.

I think Sir James Goodhart is in error when he describes pyorrhœa as always a painful disease. It is so in the acute form, but as a rule it is insidiously painless.

I am, Sir, yours faithfully,
Harley-street, W., July 27th, 1914. WM. RUSHTON.

PS.—Your annotation on the subject some months ago summed up the matter in a most judicial spirit.—W. R.

To the Editor of THE LANCET.

SIR,—Sir James F. Goodhart's protest in your issue of July 25th against the extraction of teeth for so-called pyorrhœa alveolaris and his criticism of the routine practice by vaccine treatment are the expression of the thoughts of many members of the medical profession. Recently a patient of mine had most (why not all?) of his teeth removed because he was said to be suffering with "aortic arteritis," as a matter of fact, from simple dyspepsia, the result of over-eating and insufficiency of exercise. Without his teeth he could only eat small quantities of soft food, and within a fortnight the aortic arteritis had ceased to be in existence. I also cured a case of so-called pyorrhœa by the use of euthymol tooth cream and the suggestion that it would be wiser to sacrifice the appendix than lose the teeth.

Seriously, this craze of fashion in diagnosis is detrimental to the prestige of the medical profession. It cannot be to our advantage that the diagnosis made by one man should be condemned as absolutely wrong by another member of the same profession, and yet it is almost impossible to avoid doing so, and tell the truth. This last week, when I was endeavouring to minimise my difference of opinion, the patient said to me, "Please give a name to my disease," and what could one do under the circumstances? It used to be said that medicine was a noble profession but a bad business, but now it seems to me that business is the first consideration and that exaggeration of diagnosis is becoming the fashion.

I am, Sir, yours faithfully,
G. SHERMAN BIGG.

July 26th, 1914.

To the Editor of THE LANCET.

SIR,—The letter you publish in THE LANCET of July 25th from Sir James F. Goodhart is so entirely true that it will be endorsed by many who practise dental surgery. We who spend the best part of our professional hours in trying to save teeth are often in the anomalous position of conflict with both physicians and surgeons. This is due to the fact that we are daily requested to sacrifice sound teeth because of some slight marginal inflammation or retrocession of the gums, misnamed pyorrhœa alveolaris. We are well aware that time will correct this mistaken zeal, for there is an innate desire to keep what nature has supplied, and "the fashion of this world passeth away." Meanwhile, it needs the words of a wise physician to call a halt, for this needless sacrifice is spreading far and wide, even to the children.

I am, Sir, yours faithfully,
R. DENISON PEDLEY.

London Bridge, S.E., July 25th, 1914.

To the Editor of THE LANCET.

SIR,—Sir James F. Goodhart, in your issue of July 25th, has opened up a most important clinical observation. Those who possess practical acquaintance with dentistry will agree with his statement, "but dirty mouths are not pyorrhœa." Yet dirty mouths may lead to pyorrhœa, as dirty intestines may lead to appendicitis.

Three years ago I pointed out to the profession, through the medium of the Psychological Association, that appendicitis was quite rare in all the private and public asylums of the British Isles. And believing that the soundest practice of medicine is prevention, can we not apply equally similar rules of dietetics and suitable cleansing of the bowels, such as prevent appendicitis in asylums, to pyorrhœa alveolaris?

I am, Sir, yours faithfully,
JOHN FREDK. BRISCOE.

Alton, Hants, July 25th, 1914.

NURSES' REGISTRATION.

To the Editor of THE LANCET.

SIR,—By a mistake I wrote last week that 500 matrons of hospitals had signed the protest against the State Registration of Nurses. This is not quite accurate. The 500 include matrons of Poor-law infirmaries, institutions, and nursing homes, just as the 500 who signed in favour of the Bill, whose names I have seen, also include these. It also includes late matrons, but not quite so late as one of the signatories of the petition in favour of the Bill, who signs as "Late Matron" and left her post 21 years ago.

The number of matrons of hospitals who have signed against the Bill is 335, of matrons of infirmaries 15, of former matrons 20, of matrons of nursing homes and institutions 101, and a further number of signatures has been received since this list was drawn up.—I am, Sir, yours faithfully,
KNUTSFORD.

Kneesworth Hall, Royston, Herts, July 29th, 1914.

THE TECHNIQUE OF ARTIFICIAL PNEUMOTHORAX.

To the Editor of THE LANCET.

SIR,—The letter of Dr. Clive Riviere in your issue of July 18th, whilst refuting some of the objections raised to the accepted (Saugmann) technique of artificial pneumothorax, suggests a modification of this technique which is itself not free from objection. Dr. Riviere holds that a pointed needle should not be used at all at a first operation, as with it a wound of the lung is unavoidable. This is not the experience of those who have used the pointed needle most, and Saugman, who has just described his technique at length,[1] writes:—

> Among the objections which Brauer raises to the puncture method is this—that the sharp needle, even when the pleural space is free, must of necessity injure the surface of the lung. This, however, may be avoided by placing the patient in correct position—i.e., so that the puncture is made at the spot in the thoracic wall which lies uppermost. In this way assurance is obtained that the aspirated air at once collects around the needle-point, and the layers of the pleura become separated from one another. If the needle is inserted slowly this separation must occur, in view of the mechanism of coherence of the layers, at the moment the needle-point reaches the parietal pleura and therewith neutralises the adhesive force at the particular point of the pleura.

In the same paper Saugman discusses the employment of a blunt instrument such as Dr. Riviere uses to perforate the parietal pleura. He points out the greater probability of pleural shock, and since a certain force must be used the needle can easily be driven into adherent lung tissue and lacerate it in a way that the sharper needle would not do. It should, moreover, be noted that Saugman's only two fatal cases were due probably to aspiration of gas from the air in the bronchi or pleura through such a laceration, and not from the apparatus itself. These two cases and one recorded by Zink from the Basler Heilstätte in Davos[2] are therefore to be added to the case cited by Dr. Claude Lillingston in THE LANCET of Sept. 13th, 1913, and must lead to an admission of the possibility of this accident. Saugman also warns with justice against forced inspirations which must favour aspiration into a lacerated vein, and advises tongue traction rather than artificial respiration if the breathing should cease. His experience, as well as that of many others, speaks for the employment of a sharp needle of small bore if complications are to be avoided.

I am, Sir, yours faithfully,
EGBERT MORLAND.

Aroso, Switzerland, July 21st, 1914.

To the Editor of THE LANCET.

SIR,—There are one or two points in Dr. W. Parry Morgan's letter in your issue of July 25th on which comment might be made. He states that manometric oscillations are ample proof that the lung has been punctured. He apparently overlooks the fact that the needle is, *viâ* the manometer, in communication with the external air and consequently its entry of the pleural cavity is indicated by the negative oscillations. The so-called elasticity of the lung is the cause of the negative pressure, and this has been found in the cadaver to be equal to 8 cm. of water.

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[1] Brauer's Beiträge zur Klinik der Tuberkulose, vol. xxxi., p. 571.

[2] Ibid., vol. xxv., p. 421.

As the forces of respiration act in all directions there are in the manometer corresponding oscillations of a few centimetres on either side of – 8. Their range depends on the depth of respiration and the presence of adhesions in the neighbourhood of the puncture. In his remarks on the positive pressure oscillation when the patient coughs he does not take into consideration the inertia of the column of water. It seems fairly obvious that the sudden application of a considerable though momentary force causes a violent oscillation which continues beyond the point at which the force ceases to act, and thus gives the transitory positive reading. This, if it does more than confirm that the pleural cavity is entered, tends to show that the lung is not punctured. Valve action of the lung is, of course, an incident in aspirating effusions, but the high negative pressure employed makes the conditions totally different.

The danger of wounding the lung, provided the pleura is not adherent, would seem to be avoided by using a blunt cannula. The advantage of a sharp needle, even with a flow of gas, is not obvious, and if the pleura is adherent surely the blunt instrument will do less damage.

I am, Sir, yours faithfully,

Rayleigh, July 25th, 1914. W. MILLER.

To the Editor of THE LANCET.

SIR,—Is it bradypepsia of novelty to say that the chances are against Dr. W. Parry Morgan's new apparatus being a useful contrivance? What I look at is this. From 1911 to the present date a great number of artificial pneumothorax cases by the puncture method have been done on the continent. In England, if we except Dr. Lillingston, comparatively very few. Yet on page 589 of the tenth part of *Therapeutische Monatshefte* for 1911 there is figured an apparatus which is the same to a T-piece as that now in use, with the one exception of the small manometer-throttle devised by Petersen, of Copenhagen, for the purpose, according to Saugman, of estimating mean intrapleural pressure with full regard to the physiological fact that inspiration lasts nearly twice as long as expiration. Continental workers, as might have been expected, have had ideas during this time, but they do not seem to have made good with them; and it is therefore unlikely, until insular experience is a good deal greater, that British workers will succeed in wiping their eye. However, I shall certainly try Dr. Morgan's new needle before long.

I am, Sir, yours faithfully,

Barnsley, July 27th, 1914. W. C. RIVERS.

TUBERCULIN "ENTHUSIASTS."

To the Editor of THE LANCET.

SIR,—I hope that Dr. Charles Miller's letter in your issue of July 25th will be noted by the tuberculin "enthusiasts." Several similar cases have come under my notice, and I am afraid they may be more common than is generally realised.

Dr. Miller appears to think the Insurance Committee is to blame in the case he describes; on what grounds is not evident. The committee may recommend a patient to attend some institution approved by the Local Government Board and may pay the fees, but it is surely not therefore to be held responsible for the treatment recommended by the medical officers of the institution.

If the Insurance Committee recommends an insured person to attend the Brompton Hospital, for example, it would not be justified in dictating to the physician what treatment he might or might not employ. Neither can the committee dictate to the medical officer of a dispensary.

I am, Sir, yours faithfully,

Harley-street, W., July 25th, 1914. J. EDWARD SQUIRE.

THE WORKING OF THE NATIONAL INSURANCE ACT IN GREAT YARMOUTH.

To the Editor of THE LANCET.

SIR,—I am able to confirm from my own knowledge both the accuracy and the moderation of your Commissioner's report on the above subject. With regard to "contracting out" I was present within a week or two of the panel being formed, at a meeting of the so-called local medical committee (before it was legally elected and formed), and the minutes of the previous meeting recorded that it had been proposed and carried that allocation of patients who had not chosen their doctors should be immediately proceeded with. Two or three of my non-panel brethren were also present and can confirm my statement, so it was not a case of "months," but immediately on the formation of the panel. Dr. Henry Blake, too, at one of these early meetings proposed that a floor of the hospital should be reserved for panel patients and panel doctors, and if the hospital committee did not agree that pressure should be put on it by inducing the Friendly Societies not to continue their subscriptions. Dr. J. I. Sankey, one of the three who signed the letter in your issue of July 18th, was the proposer at the final meeting in December that we should continue to resist the Act, and made no mention then of change of attitude on the part of the British Medical Association. However, it will neither interest your readers nor do any good by going further into the inaccuracies of the letter; but I think I have shown how the Act and the conduct of the panel men to their non-panel brethren since its adoption have shattered the medical union and professional good-fellowship of this town.—I am, Sir, yours faithfully,

RAYMOND HENRY SHAW.

Great Yarmouth, July 27th, 1914.

THE GEOGRAPHICAL DISTRIBUTION OF APPENDICITIS.

To the Editor of THE LANCET.

SIR,—Mr. R. W. Murray's paper in your issue of July 25th is of great interest to me. For the last six years I have been in medical charge of the hospital for natives at Luxor, Upper Egypt. During this time I have only seen two probable cases of appendicitis, both being inhabitants of the town itself. The poor eat Nile fish, but are chiefly vegetarians of necessity. The better class native eats meat, fowl, eggs, and fish, but always fresh; there is no such thing as cold storage.

Two other points have struck me: 1. The relative infrequency of malignant disease. For instance, I have only seen one case of cancer of the breast, and that woman came from a place over 100 miles away from Luxor. 2. Though the population is riddled with untreated or partially treated syphilis I have never seen a case of aneurysm.

I am, Sir, yours faithfully,
W. E. NICKOLLS DUNN, M.B. Lond.
The Junior Athenæum Club, Piccadilly, July 25th, 1914.

THE MEDICAL LOG OF THE "LORD STANLEY."

To the Editor of THE LANCET.

SIR,—I wish to make a few remarks upon the annotation entitled "Diseases Aboard Ship in the Past," in your issue of July 18th, p. 173.

First, the complaint only attacked 30 out of 480 slaves, of whom 13 died. Secondly, the log ended suddenly because of arrival at Grenada and landing of the slaves. Thirdly, I do not think the suggestion that the slaves took poison is a feasible explanation, for many of them had been on board several weeks, after an indefinite time in barracoons on shore, before the complaint developed, and in neither place would there be any opportunity for concealing poison. Ptomaine poisoning might be a more probable occurrence, but only one patient at a time was attacked.

I am, Sir, yours faithfully,
A. BOWES ELLIOTT, F.R.C.S. Eng.
Abergele, July 26th, 1914.

THE MEDICAL DIRECTORY.

To the Editor of THE LANCET.

SIR,—The annual circular of the Medical Directory has been posted to every member of the medical profession. Another copy will be forwarded on request should the first notice have inadvertently gone astray. We should be glad if practitioners will kindly coöperate in returning the forms to us promptly, so that the entries may be as accurate as possible.

To meet the convenience of purchasers, the Directory will be on sale this year early in the month of December.

We are, Sir, yours faithfully,
J. AND A. CHURCHILL.
7, Great Marlborough-street, W., July 25th, 1914.

THE TECHNIQUE OF ABDERHALDEN'S SERUM REACTION.

To the Editor of THE LANCET.

SIR,—I regret that I allowed an error to creep into my paper on Abderhalden's serum reaction which appeared in THE LANCET of July 25th. In the last line of the second column on p. 226 the figures 0·2 and 0·24 should read 0·02 and 0·024.

I am, Sir, yours faithfully,
W. E. BULLOCK.
July 27th, 1914.

DR. W. A. BREND has been appointed a medical referee under the Workmen's Compensation Act for county court circuits Nos. 42 and 44.

BRUSSELS MEDICAL GRADUATES' ASSOCIATION.—The annual meeting of this association will be held at the Earl's Court Hotel, Tunbridge Wells, under the chairmanship of Dr. Fielden Briggs on Saturday, August 8th, at 1.30 Members are invited to bring ladies for the motor tour and luncheon. Tickets, price 5s. (not including wine), may be obtained from the honorary secretary, Dr. Arthur Haydon, 29, Broadhurst-gardens, Hampstead, N.W.

THE BRITISH MEDICAL ASSOCIATION.

EIGHTY-SECOND ANNUAL MEETING AT ABERDEEN.

THE eighty-second annual meeting of the British Medical Association has been held this week in the ancient and picturesque university city of Aberdeen. The medico-political proceedings of the Representative Body began on Friday, July 24th, while the congress was formally opened on Tuesday afternoon, July 28th, when the annual general meeting of members was held in the Mitchell Hall of Marischal College. The retiring President, Dr. W. Ainslie Hollis, being absent from illness, his successor, Sir Alexander Ogston, K.C.V.O., M.D., emeritus professor of surgery in the University of Aberdeen, was inducted by Dr. J. A. Macdonald. After a vote of thanks to the retiring President had been carried with acclamation, Sir T. Clifford Allbutt was formally introduced as President-Elect for the annual meeting at Cambridge next year.

The presidential address, to which reference is made elsewhere in our columns this week, was delivered by Sir Alexander Ogston in the music hall on Tuesday evening before an appreciative audience. The President was supported on this occasion by the Lord Provost of Aberdeen, who offered a welcome to the British Medical Association on behalf of the city. After the ceremonial introduction to the President of distinguished foreign guests and delegates from oversea dominions, the Association's gold medals of merit were presented to Mr. T. Jenner Verrall, the popular chairman of representative meetings, and Dr. Edwin Rayner, who has for many years served as honorary treasurer of the Association.

The addresses in Medicine and in Surgery, by Dr. Archibald E. Garrod and Sir John Bland-Sutton, were of more than usual interest this year. They were delivered in the Mitchell Hall of the magnificent new buildings of Marischal College on Wednesday and Thursday afternoon respectively, and they are printed in full in our columns this week by the courtesy of the editor of the *British Medical Journal*. Marischal College, it will be remembered, is one of the two distinct foundations which, after centuries of more or less complete independence, were united 54 years ago to form the modern University of Aberdeen. As Dr. J. Scott Riddell points out in the very interesting and instructive handbook and guide which he has compiled for the benefit of this gathering, medicine was then for the first time placed on a satisfactory footing among the University faculties of Aberdeen, and since that time its development has gone on steadily.

Aberdeen offers many attractions to visitors. The grey buildings, the charming way in which they are grouped as seen from the approaches to the city, and the brightness and activity of the principal streets are quickly appreciated. Aberdeen has a beauty and an aspect peculiarly its own. There are few large cities which can boast a position which brings them at the same time into the category of great industrial centres and seaside health resorts. Within a few minutes' tram ride of the busiest parts of the city a broad expanse of sea is reached, where crowds enjoy sea bathing or a walk along a fine parade.

The port, harbour, and docks present a very animated scene. There appears always to be something going on. Trawlers are constantly discharging enormous catches of fish, and Aberdeen takes a very large share in keeping the Scotch and English markets supplied with haddocks and herring, which form a very valuable addition to the country's food-supply. The value of white fish alone landed in a year is over a million sterling, and the trawling fleet includes 250 boats and 70 steam liners and drifters, which represent an enormous capital invested in this important industry.

The beauties of the country around are well known, especially the views along the valley of the Dee, to Banchory, Braemar, and Ballater, and special facilities were given to the visitors to make excursions to these places. Aberdeen also provides palatial accommodation for the serious side of the meeting, the noble municipal buildings and the stately Marischal College giving an ample and comfortable arena for the various sectional and business gatherings. The population of this great and busy city steadily grows and the health needs of its populace are carefully watched. Already the authorities find that in the matter of water-supply further provision must be made to keep that supply adequate. A new scheme involves drawing upon the waters of the Dee for the purpose, and the water is to be softened by the well-known lime process.

Apart from its many medical interests, both historical and practical, Aberdeen offers a variety of attractions to the visitor. This was taken advantage of by energetic local committees and the givers of private hospitality, who between them provided a full programme of entertainments, including receptions, concerts, garden parties, and excursions of all kinds, as well as formal visits to a number of institutions and local industries. The Aberdeen Royal Infirmary was on view to medical visitors on Thursday afternoon, when the directors and honorary staff were "at home," and other kindred charities also extended invitations to members of the Congress.

The annual exhibition was held partly in the general laboratory and partly in the dissecting-rooms at the Marischal College. Although the number of exhibitors was smaller than usual the result was full of interest, and there has been a good attendance of visitors throughout the meeting. The exhibits, as usual, comprised surgical instruments, antiseptic dressings and appliances, electrical and high frequency apparatus, chemical and pharmaceutical preparations, special foods, and the many productions and manufactured goods which fall within such a category. On Wednesday the exhibition was kept open until 10 P.M. on the occasion of the reception by the University.

A feature of the social programme this year was a series of excursions arranged for those interested in archæology or in the evidences of early history in the environment of Aberdeen. Stone circles giving interesting confirmation of the earliest principles of orientation, interesting geological formations in the district, and a group of historic castles have all been studied closely by members of the Association with tastes in the indicated directions.

The mornings of Wednesday, Thursday, and Friday were allotted to the work of the scientific sections, which are holding their meetings, as we go to press, in the class-rooms of Marischal College. The sections this year number 15, and reports of the various papers and discussions will appear in our next issue. In the Section of Medical Sociology, whose proceedings are usually of general interest with a distinctly topical flavour, a discussion on the Responsibility of the State as Regards Venereal Disease was held on Wednesday, while Thursday was set apart for discussion on a State Medical Service *versus* a Panel System, and on Medical Certification other than that of Insanity. In the Section of State Medicine and Medical Jurisprudence discussions were arranged on Death Certification, on Malingering, on the Period and Duration of Infectious Disease, and on the Administrative Treatment of Tuberculosis; while in the Section of Tropical Medicine another discussion of wide general interest was opened by Colonel W. G. King, I.M.S., on the Education and Position of the Sanitarian in the Tropics. Both in the Section of Dermatology and Syphilology and in that of Naval and Military Medicine there have been profitable discussions on the Treatment of Syphilis.

Obituary.

GERALD ALLPRESS SIMMONS, M.D., B.S. LOND., M.R.C.S. ENG., L.R.C.P. LOND.,

SENIOR RADIOGRAPHER TO ST. GEORGE'S HOSPITAL AND TO THE ROYAL WESTMINSTER OPHTHALMIC HOSPITAL.

Dr. Simmons died on July 26th, in his fiftieth year, after a long illness. A Devon man by birth, he was educated at St. Mary's Hospital, where he won an entrance scholarship. After the usual medical course he qualified as M.R.C.S. Eng. and L.R.C.P. Lond. in 1890. In the following year he took the M.B., B.S. degrees at the University of London, with honours in medicine, midwifery, and forensic medicine; and in 1892 he proceeded to the full doctorate. After filling the posts of house physician and assistant anæsthetist at St. Mary's Hospital, Dr. Simmons spent two or three years as ship's surgeon and on the West Australian goldfields. Returning to London, he started practice in Ashley-gardens, Westminster; but he was soon attracted to the therapeutic possibilities of X rays, then newly discovered, and as time went on he devoted more and more attention to this branch of medicine, until he finally became a specialist in radiology and electrotherapeutics. He was appointed medical officer in charge of the X ray department at St. Mary's Hospital, a position which he exchanged about eight years ago for that of senior radiographer at St. George's Hospital. Here he found a department which had been for some years unsatisfactorily managed, and he speedily reorganised it from top to bottom, increasing both his own reputation and that of the hospital at the same time. He also joined the staff of the Royal Westminster Ophthalmic Hospital in a similar capacity.

Dr. Simmons contributed scantily to the literature of his specialty. His article on X rays in "Pye's Surgical Handicraft" was perhaps the most important of his published writings. For many years he was one of the most loyal members of the

Chelsea Clinical Society, of which he had been honorary treasurer for some years. His colleagues on the council of that society, as well as those on the staffs of the hospitals with which he was connected, and indeed all who had personal or professional relations with him, will greatly miss one whose frank, honest, and manly nature was as easily recognisable as were his professional ability and his breadth of intellect. To his widow the sympathy of Dr. Simmons's many friends will be freely extended.

THE CLINICAL CONGRESS OF SURGEONS OF NORTH AMERICA.

FIFTH ANNUAL SESSION HELD IN LONDON DURING THE WEEK OF JULY 27TH.

THE Clinical Congress of Surgeons of North America, an organisation whose admirable aims we recently described in these columns, held its Fifth Annual Session in London during this week. This Congress differs from other medical congresses in this, that its main purpose is not the discussion of theory and practice, the recording of results, or the introduction of new ideas, but the practical demonstration by well-known surgeons in the hospitals to which they are attached of their technique and methods of work. It was a happy idea that having observed the methods practised in various surgical centres in America the American surgeons, and surgeons of other nationalities affiliated to the Congress, should have come here to study the methods of their British confrères on their own ground. Alas! the political condition in Europe compelled the hasty return to the continent of some of our distinguished confrères.

The headquarters of the Congress were at the Hotel Cecil and the Hotel Savoy, the Presidential meeting on Monday being held in the Hotel Cecil. The Grand Hall was thronged, and a considerable number of lady doctors were among those present, as well as several continental surgeons. In the adjacent rooms were held exhibitions of surgical instruments and apparatus and of medical literature. The evening sessions of the remaining days were held simultaneously in the Grand Hall of the Hotel Cecil and the ballroom of the Hotel Savoy, the former being devoted to papers and discussions on general surgery, the latter to the various surgical specialities.

The meetings throughout have been attended with great success—a success measured by enthusiasm and by overflowing audiences, and arrived at by good organisation. Every seat on the floor of the Grand Hall was occupied at the opening meeting, hundreds were standing round the sides of the hall, and the gallery high up reserved for ladies was equally full, and formed a picturesque background to the view from the platform.

With characteristic directness the Congress plunged *in medias res* by attending specially arranged surgical clinics at the various London hospitals throughout Monday without waiting for the opening meeting. After a presidential dinner at the Hotel Cecil on Monday evening, which was attended by the American Ambassador, the Hon. W. Hines Page; Sir Rickman Godlee, retiring President, and Sir W. Watson Cheyne, President-elect, of the Royal College of Surgeons of England; Sir Thomas Barlow, President of the Royal College of Physicians of London; Sir Francis Champneys, President of the Royal Society of Medicine; Mr. F. C. Dwyer, President of the Royal College of Surgeons of Ireland; Dr. John B. Murphy, President of the Congress; Dr. W. L. Rodman, President of the American Medical Association; Dr. T. D. Watkins, President of the American Gynæcological Society; Dr. Charles H. Mayo, Dr. A. B. Kanavel, Sir Arbuthnot Lane, Sir StClair Thomson, and many other surgeons of mark too numerous to mention. The opening meeting of the Congress took place in the Grand Hall of the Hotel Cecil. The meeting took place promptly, at the advertised time of 8.30 P.M., the main doors being closed to avoid interruption.

An address of welcome was delivered by Sir Rickman Godlee, honorary chairman of the London committee, who expressed the regret of all that the Congress should have clashed with the annual meeting of the British Medical Association at Aberdeen, with the unfortunate result that many well-known representatives of British surgery were unable to be present and join in welcoming their American brethren. He extended to the visitors an invitation for Wednesday to the Royal College of Surgeons, which was the possessor of the most important surgical museum in the world.

Dr. Murphy, on his inauguration as President of the Congress, commented on its peculiar character and the magnitude of the unprecedented task it had undertaken in organising such a meeting so far away from home. He spoke most highly of the impressions already gained of British surgeons and surgery, and expressed the conviction that the result of the Congress would be to extend the admiration and affection of American surgeons for the profession and the people of this country, and to increase their realisation of the fact that science was a brotherhood that embraced the entire world.

The American Ambassador, the Hon. Walter Hines Page, in extending a warm greeting to the visitors from the United States, said that they must already have learnt from their English friends how heartily they were welcomed in London. He referred to what a distinguished English surgeon had once said to him, that he was accustomed to tell his students that their surgical education was hardly complete until they had visited America and observed the skill of the American surgeons. Now that so large a body of American surgeons had come to England to pursue a corresponding course in this country he could only say that "honours were easy." He spoke eulogistically of the great cordiality existing between the two nations, and expressed the conviction that as Americans and Englishmen were "anatomically alike," they would in course of time become more politically akin.

Owing to the unavoidable absence of Dr. George Emerson Brewer, the retiring President of the American Medical Association, it fell to the lot of Dr. W. L. Rodman, of Philadelphia, the incoming President, to convey the cordial greetings of the Association to the medical profession of Great Britain. These introductory ceremonies occupied nearly an hour, so that it was nearly half-past nine when the scientific addresses began.

The first was that of Professor A. von Eiselsberg, of Vienna, who read a paper on the Choice of the Operative Method for Ulcer of the Stomach. This paper, which will be found on p. 296 of this issue of THE LANCET, was discussed by Sir Watson Cheyne and Mr. James Sherren. Dr. Murphy then delivered an address on Arthrodesis and Bone Transplantation, its Limitations and Technique.

An excellent feature of the organisation was formed by the large bulletin boards displayed in the registration room, whereon were posted the various items of the day's programme, so that an inspection thereof gave a comparative view of the arrangements at a glance. From these boards it was a much easier process to construct a plan of action than from the printed programme, though that, too, was a carefully thought-out document.

Through the courtesy of Dr. Franklin Martin, the General Secretary of the Congress, and Mr. A. D. Ballou, the manager, we are able to publish at full length many of the addresses delivered and papers read. Brief notes on some of the discussions which ensued both in the General Surgical Division and the Special Surgical Division are appended, but no attempt has been made to describe the numerous clinical exhibitions provided by the London surgeons at the chief metropolitan hospitals. The essential feature of these demonstrations was that they should be seen to be appreciated, and we are happy to know that what the members of the Congress have seen they have cordially approved of.

The following papers read at the Congress will be found at the pages indicated :—

On Gastric Ulcer, with Special Reference to its Treatment by Gastrostomy (Sir Watson Cheyne), p 294.

The Selection of the Method of Operation in the Treatment of Gastric and Duodenal Ulcers (Professor von Eiselsberg), p. 296.

Internal Derangements of the Knee (Mr. Robert Jones), p. 297.

The Results of Operation (Laryngo-Fissure) for Intrinsic Cancer of the Larynx (Professor E. Schmiegelow), p. 300.

Hyperthyroidism : Primary and Late Results of Operation (Dr. C. H. Mayo), p. 301.

Typhoid Perforation (Dr. G. E. Armstrong), p. 307.

The Treatment of Inoperable Carcinoma of the Uterus by Application of Heat (Dr. J. F. Percy), p· 309.

Factors of Safety in Cleft Palate Surgery (Dr. J. R. Eastman), p. 312.

Suture of the Levator Ani Muscle in Perineorrhaphy Operations (Dr. Henry Jellett), p. 315.

The Results of Radical Operative Treatment of Cancer of the Uterus (Dr. T. Wilson), p. 318.

EVENING SESSION.

A.—GENERAL SURGICAL DIVISION.

TUESDAY, JULY 28TH.

The Use of the Levator Ani Muscle.

THE first paper was read by Dr. HENRY JELLETT, and will be found in full on p. 315.

Dr. F J. MCCANN (London) said that he was in complete agreement with Dr. Jellett's advocacy of the routine suture of the levator ani muscle in operating for prolapse. The levator ani is both the strength and the weakness of the pelvic floor, and any operation which is to restore the latter after laceration must include suture both of the fascia and of the muscle. In the technique of the operation for complete procidentia the first step is the dissection of the anterior vaginal wall from the base of the bladder through an ovoid incision. Then the bladder is separated from the cervix uteri as high as the reflexion of the peritoneum, after which a purse-string suture along the edge of the exposed fascia is inserted. Anterior colporrhaphy is then performed, with or without removal of the cervix, or also of a portion of the anterior vaginal wall. Next the posterior surface of the vagina is opened by an incision starting in the middle line. The whole thickness of the vaginal wal is reflected from the rectum, thus exposing at once the levatores ani muscles. Redundant vaginal wall is removed. If there is a pronounced rectocele, it is well to suture the fascia alongside the rectum, producing a reef in the rectal wall. Deep silkworm-gut sutures are next passed, but left untied ; after that the levatores ani are sutured, beginning behind and passing forwards ; care is to be taken that the wound is quite dry before these sutures are tied. The deep sutures are then tied, and superficial skin sutures complete the operation. It is unnecessary to pack the vagina with gauze (as Dr. Jellett had advocated) because hæmorrhage is prevented by the deep sutures.

Derangements of the Knee-joint and their Treatment.

Mr. ROBERT JONES (Liverpool) having introduced this subject (see p. 297), Mr. A. H. TUBBY (London) said that the great factor in the production of internal derangement of the knee is undue lateral movement of the joint, however produced—not necessarily by violence. The necessity for operation is largely discounted if lateral mobility can be entirely prevented. In recent cases, after reduction of the displaced cartilage, Mr. Tubby favours the immobilisation of the leg for three to six weeks in plaster-of-Paris in the extended position. After that a slight degree of flexion may be permitted and gradually increased ; but the apparatus cannot as a rule be discarded for six to nine months. As long as tenderness persists the patient should be advised not to walk. "When I decide to operate," he said, "I do it on these grounds: 1. Where the patient is unable to give the necessary time and has not the means to afford the apparatus required for mechanical treatment. 2. Where the patient is unable to obtain his livelihood shackled by a splint. 3. In the case of those who go up ladders, work on scaffolds, or amongst machinery—where a sudden and unexpected fall may be fatal. 4. Where a support has been faithfully tried and has failed. In every case of operation its risks and results should be explained to the patient. I decide not to operate : 1. In any case of primary displacement. 2. Where a patient is content to wear an apparatus for a lengthened period." In his private practice Mr. Tubby operates on only 5 per cent. of his cases of internal derangement. He laid stress on the insufficiency of the popular acetone and iodide method of disinfecting the skin when the knee is the site of the operation.

Mr. ROBERT MILNE (London) remarked that what we wished to know in any given case is what is wrong with the knee-joint. He then detailed the pathological conditions of the internal semilunar cartilage from cases he had met with. Among such conditions were longitudinal splitting of the cartilage (upon the mechanism of this splitting he enlarged at some length) ; complete separation of the anterior end of the cartilage ; a transverse tear and separation of the posterior end of the cartilage. The chief cause of displacement was rotation of the tibia inwards on the femur, and the cardinal symptoms or "tripod" were three—viz., pain, effusion, and locking of the joint. Several photographs were shown illustrating rare causes of internal derangement of the knee-joint.

Transplantation of the Ovaries.

Professor TUFFIER (Paris) explained his methods of transplantation of the ovaries with the object of preventing the onset of the menopause in operations for salpingitis when the uterus is not removed. In the last five years he has done 204 such transplantations, with varying degrees of success. Heterografting, the implantation of an ovary from one patient into another, has not given satisfactory results ; but autografting is of great benefit, and Professor Tuffier has done it 145 times. After salpingectomy the ovaries can be left in the pelvis, where they often cause pain ; or they can be grafted on to the uterus or under the skin, or into the subperitoneal fat of the abdominal wall. It is the latter operation which he now practises and advocates. The technique of this operation was demonstrated by a series of lantern slides. When it has been performed there is absence of menstruation, with symptoms of menopause, for about six months. After that time normal menstruation reappears as a rule, though in a few cases it is irregular. For about six to ten days before such periods there is swelling of the transplanted ovaries, which remain normal in structure and function, as shown by examination of such organs after months or years of transplantation. As a result of his observations on cases in which transplantation had been performed, and of experimental researches, Professor Tuffier puts forward a new theory of menstruation. He holds that during the intermenstrual periods a chemical substance accumulates in the blood which acts upon the ovary in such a way that it is altered and is then eliminated in the menstrual flow.

Sir John Bland-Sutton, who was to have taken part in the discussion on Professor Tuffier's paper, had to leave for Aberdeen earlier in the evening. The proceedings terminated with a vote of thanks to the speakers, carried by acclamation.

Wednesday, July 29th.

Typhoid Perforation.

Dr. **George E. Armstrong** (Montreal) opened a discussion on this subject by reading a paper which will be found in full on p. 307.

Sir **Anthony Bowlby** said that Mr. Kenneth Davis had completed for him a survey of all his cases of operation for typhoid ulcer from 1896 to 1913. The results of this survey showed the experience of fatal typhoid accidents to be limited by the diminution of typhoid and typhoid mortality that had taken place in the country. In the decade 1870 to 1880 the deaths from perforation were 23 per cent. ; in 1880 to 1890, 20 per cent. ; in 1890 to 1900, 17 per cent. ; in 1900 to 1910, 9 per cent. ; in 1911, 7 per cent. ; and in 1912, 4 per cent. ; thus showing a total fall from 23 to 4 per cent. in that period. It was different, however, in war, and the South African war had given him a much larger experience of typhoid fever and its surgical accidents. He believed that most cases of supposed recovery after perforation without surgical treatment were not really cases of perforation ; perforation was almost invariably fatal without operation. Diagnosis sufficiently early for useful operation could be generally obtained, and prompt operation should be routine treatment. The difficulty of diagnosis was in direct proportion to the severity of the illness—a patient stupefied by toxæmia could not complain. At least 25 per cent. of the deaths were due to perforation, and preliminary arrangements for immediate operation should be kept continually ready in every case of typhoid fever. More than half of all the cases of perforation were not given a chance of operation. Among the premonitory symptoms he mentioned large sudden hæmorrhages as conducing to the liability of perforation. Pain, often very sudden, severe, and diffuse over the whole abdomen, was an important symptom in proportion as the patient was mentally alert ; its abeyance was not to be taken as a restorative sign. Having enumerated the symptoms of perforation, Sir Anthony Bowlby said that a blood count should be made two or three times a week as part of the routine examination in typhoid fever. A sudden rise in white-cell count suggested the onset of some inflammatory lesion. He agreed with Dr. Armstrong on the importance of observing the patient's expression, for even if the patient was unconscious he showed a restlessness after perforation contrasting strongly with his previous lethargy. A rigor after the second week should always excite suspicion. In cases of peritonitis without perforation the treatment by operation might be right even though the diagnosis was wrong. He particularly directed attention to the fact that perforation might be multiple, therefore the surgeon should not be content with discovering and dealing with a single perforation. In a series of 30 cases at St. Bartholomew's Hospital eight patients showed the effects of other perforations subsequent to operation on the first.

Results of Operations for Hyperthyroidism.

Dr. **Charles Mayo** (Rochester, U.S.A.) opened this discussion (see p. 301).

Mr. **James Berry** (London) said that he should speak chiefly upon the clinical side of the subject, and acknowledged the honour of the invitation to do so. His experiences, he said, were only in hundreds, not in thousands like those of Dr. Mayo. The total number of operations for removal of goitre that he had performed was 966, or, adding operations for ligation of thyroid arteries, a little over 1000. He confessed that, while operating upon ordinary goitres, he had been opposed to operation in exophthalmic goitres, the proceeding being too dangerous. But experience and improvements in technique and in methods of producing anæsthesia, especially local analgesia, had altered his view, though cases must be chosen carefully. Dr. Mayo had taught the need to avoid operations during mental irritability, muscular weakness, and acute cardiac dilation. Mr. Berry held that in many severe cases of Graves's disease ligation of a superior thyroid artery could be safely performed, when larger procedures were unjustifiable, and that it would be found a good step, whether preliminary to subsequent thyroidectomy or no. Partial thyroidectomy, however, was more useful. He divided cases of hyperthyroidism for practical purposes into (1) those with the classic symptoms, and (2) ordinary goitres on which any one or two of these symptoms might be grafted. The second class, not to be included in statistics of operation for true exophthalmic goitre, could be cured by operation with little risk. He had performed 215 operations for hyperthyroidism, he said, since 1912—his experience up to that time being already on record in his Lettsomian lectures. 42 cases were well-marked exophthalmic goitre with 1 death in a man of 50, an old-standing case, emaciated, and with cardiac and cutaneous complications. Among the other 173 there were 2 deaths, in one of which a deep-seated goitre was complicated by pregnancy, while the other had glycosuria. In the cases of ligation of the thyroid arteries no deaths occurred. Nearly all the cases were markedly benefited generally and locally.

B.—Special Surgical Division.

Tuesday, July 28th.

Laryngo-fissure.

Sir **StClair Thomson** briefly introduced Professor Schmiegelow as one who had known England well, having studied over 30 years ago under Sir Morell Mackenzie at the old Throat Hospital and been since in England constantly.

Professor **Schmiegelow** read a paper which will be found in full on p. 300.

Sir **StClair Thomson** gave his experiences of the operation of laryngo-fissure, and pointed out first that it was clear that both the public and the medical profession in Denmark were more alert to discern the conditions which could be relieved by the operation than we were in England, as shown by the number of opportunities which Professor Schmiegelow had had. In England it was common for a patient to be hoarse perhaps for a year before seeking the help of the throat specialist. He endorsed Professor Schmiegelow's teaching and technique entirely, preferring general anæsthesia and preliminary tracheotomy. He also removed the tracheotomy tube before the patient left the table, and got the patient out of bed as soon as possible. He alluded to the interesting fact that one of his successful cases—and he had had no unsuccessful ones in a series of 17 operations for intrinsic cancer of the larynx—developed malignant disease of the parotid gland on the opposite side after seven years' immunity, clearly a new infection. The voices after the operation were as a rule quite good, gradually becoming sonorous. He gave the following synopsis of his cases :—

Cases of intrinsic cancer of larynx treated by laryngo-fissure	17
Deaths from operation	nil
Died from recurrence	2
Recurrence, laryngectomy, and alive $4\frac{1}{2}$ years later	1
No recurrence, including the last-mentioned cases...	15
Death from other causes, 15 months, 3 years, 4 years, and 11 years after operation	4
Alive, 7 years after operation	1
,, $5\frac{1}{2}$,, ,, ,, ...	1
,, $4\frac{3}{4}$,, ,, ,, ...	1
,, $3\frac{3}{4}$,, ,, ,, ...	2
,, 2 ,, ,, ,, ...	1
,, $1\frac{3}{4}$,, ,, ,, ...	1
,, 9 months ,, ,, ...	1
,, 8 ,, ,, ,, ...	1
,, 9 weeks ,, ,, ...	1
,, 5 ,, ,, ,, ...	1

In no case did thyrotomy reveal any error of diagnosis ;

although a preliminary microscopic examination of a removed portion was only available in six instances.

Intranasal Surgery of the Lacrymal Apparatus.

Dr. J. M. West (Baltimore), who had also studied his subject in Berlin in coöperation with Professor Silex, then read an interesting paper on the Intranasal Surgery of the Lacrymal Apparatus, basing his teaching on an experience of 225 operations. He described fully his technique for draining the lacrymal sac by establishing a permanent intranasal opening, passing round a number of "before" and "after" photographs to show the excellent results.

Dr. D. R. Paterson (Cardiff) narrated experiences extending over nine months with cases of lacrymal stenosis that had been referred to him by his ophthalmological colleagues. He refused to speak dogmatically of the permanency of the relief obtained when all his cases were comparatively recent, but, speaking very hopefully on the point, supported all Dr. West's contentions.

Dr. C. W. Richardson (Washington) then read a long paper on Congenital Atresia of the Post-nasal Orifice, which was discussed by Dr. Dundas Grant.

Wednesday, July 29th.

Three discussions were carried on in the evening. Dr. Logan Turner (Edinburgh) discussed the Application of Skiagraphy to the Mastoid Region, the paper being commented on by Mr. Sydney Scott (London); Mr. Hugh Jones (Liverpool) considered the Extent of the Operation necessary in Septic Invasion of the Lateral Sinus; and Mr. F. H. Westmacott (Manchester) read a paper on Oculo-Motor Paralysis of Otitic Origin, which we hope to publish in full.

THE EXHIBITION.

The great proportion of the exhibits constituting a little business exhibition in connexion with this Congress consisted of surgical instruments and appliances.

The Surgical Manufacturing Company (85, Mortimer-street, London, W.) showed several convenient forms of sterilisers, and especially a new simple make which leaves the dressings perfectly dry. This seems to us a useful little innovation. They had also a very convenient form of sealed drum for surgical dressings, which is sold filled with sterilised dressings and hermetically sealed; when the dressings are needed the tin is opened by a key which strips off a ribbon of metal, and then the dressings are found enclosed in a gauze bag, which is opened and drawn over the drum, so as to cover up its outer surface and thus prevent any contamination from it. The whole idea was worked out very carefully. Among the instruments shown may be specially mentioned Mayo's probe-pointed scissors; Glegg's nasal snare, in which the handles are kept out of the line of sight; Kocher's modified intestinal clamp, the blades of which are provided with alternate and opposite knobs to prevent the intestine slipping; and a very ingenious universal handle that will take various forceps for nasal, laryngeal, aural, or tonsillar use.

Messrs. Down Brothers (21 and 23, St. Thomas's-street, London, S.E.) showed a large assortment of surgical instruments, and among them may be mentioned the forceps and scissors designed by the brothers Dr. Charles and William Mayo, of Rochester fame. Here also was an ingenious instrument invented by Mr. Lenthal Cheatle for making a counter opening in draining the abdominal cavity, consisting of a large blunt needle to the end of which is attached the drainage-tube, which can thus be placed in position with the minimum of difficulty. The firm also showed a form of rubber tubing, not round, but cruciform in section, so that it cannot collapse completely and become blocked.

The exhibit of the Holborn Surgical Instrument Company (Holborn-circus, London, E.C.) was large and varied, and here also there were on show some neatly made drums for dressings. Some little drums intended for small dressings, as for small operations or for re-dressing an operation wound, struck us as being based on a good idea; their use would obviate the necessity for opening a large drum of dressings when only a small amount of gauze and wool is required.

Messrs. Carl Zeiss (13 and 14, Great Castle-street, London, W.), as agents for Messrs. Wolf, of Berlin, showed a large number of instruments for examining the cavities of the body. There were many cystoscopes with a large field of vision, direct-vision laryngoscopes, and œsophagoscopes. We would especially mention, as having been shown here, a "flexible" gastroscope, which can be passed into the stomach in a perfectly flexible condition and then when it is in position can be straightened. The instrument has also another good point; it has an angle near its upper end which enables the operator to avoid damage to the upper teeth of the patient. A prism at the angle renders vision possible.

Mr. Chas. F. Thackray, of Leeds, was, we believe, the original maker of the instruments devised by Sir Berkeley Moynihan, and many of these were shown at this stall, and especially may be mentioned a very convenient form of syringe for local anæsthesia. Here a very light operating table was on view, which is really portable; for it weighs only 23 lb. complete. It is constructed nearly entirely of duralum metal, though there is a little steel for the rack, by means of which various positions, such as the Trendelenburg position, are obtained.

Messrs. Allen and Hanburys, Limited (48, Wigmore-street, London, W.), had a varied assortment of surgical instruments and appliances, and among them could be found most instruments of recent introduction. They showed a new abdominal retractor and the entire set of Sir Arbuthnot Lane's instruments for the treatment of fractures. Elphick's tonsillotome, designed to obviate hæmorrhage, was also shown here. With this instrument the tonsil is first crushed in the serrated ring of the instrument by a serrated blunt blade, and then severed externally to the crushed part by an ordinary blade. There was also a complete set of instruments devised by Dr. J. F. Percy for the treatment of inoperable carcinoma by heat. The principles of this treatment were the subject of an interesting paper read to the Congress (see p. 309).

The Echols traction apparatus shown by the same firm deserves special mention. This is an apparatus for applying traction to the lower limbs, so that at the same time plaster-of-Paris dress-splints can be applied. It is of great service in fractures of the long bones of the lower extremity, especially the femur; it renders easy the application of plaster casts for tuberculous hip-joints, and it can be very serviceable when applying bone-plates. It consists essentially of two horizontal leg-bars and a vertical perineal post, against which traction is made by means of tackle blocks. The whole apparatus weighs about 25 lb. and it is therefore portable.

Messrs. M. Schaerer and Company (Berne, and 41, Berners-street, London, W.) showed several of their well-known operating tables, which are capable of a multiplicity of movements and yet are very steady. They had also a large selection of surgical instruments, including a novel pair of forceps for applying and removing Michel's suture clips. Makkas's instrument for the temporary arrest of hæmorrhage from the scalp was also shown here; this is a clamp with a strong spring, one limb of the clamp being inserted between the scalp and the bone, and the other lying on the surface; the spring is so strong that a special pair of forceps is needed to open them.

Among the exhibits of Messrs. Mayer and Meltzer (71, Great Portland-street, London, W.) may be mentioned a new form of tonsillotome with a fixed handle; a new gag in which the teeth of the ratchet are protected by a guard; Dr. D. R. Paterson's new set of instruments for nasal dacryocystotomy; Killian's suspension apparatus for direct laryngoscopy, which has been fully illustrated in the columns of The Lancet; and a new pattern metallic filament electric lamp, giving a clear white light, for laryngoscopy and general surgery.

Messrs. Longmates, Limited (56, Weymouth-street, London, W.), exhibited a large number of their excellent celluloid splints; these are non-inflammable and they are also of extreme lightness, so that they offer no bar to the ambulatory treatment of patients afflicted with bone and joint disease. A spinal jacket, even with an extension apparatus for the head, weighs for a child only some 18 ounces. The introduction of celluloid for splints was a great advance in the treatment of many conditions, and this firm has brought the invention to perfection.

Messrs. Skeffington (49, Ulundi-road, Blackheath) showed several forms of their well-known invalid beds. These are capable of carrying out all the movements which are required in the treatment and nursing of a helpless patient, and that with the minimum exertion on the part of the nurse. There are various types. In one the bed is complete in itself; in another it can be adapted to an ordinary bedstead; in a third there is a portable apparatus which can be placed round a bedstead. The mobile sacrum lifter is also an appliance of great value, and it is intended chiefly for infirmaries; by its use it is possible for one nurse to lift a bedridden patient, and, moreover, the apparatus can be carried about from one bed to another. The Skeffington inclinator also deserves mention; it has the same effect as tilting the bed, and a very oblique position can easily be obtained. The visitors to the exhibition were clearly much interested in this display as the practical side of the mechanical devices was easy to follow, while the various appliances had been designed in a sensible way to meet the wants of the private patient or the patient in a hospital or an infirmary.

The Life Saving Devices Company (Chicago) showed the lungmotor, a device for performing artificial respiration in the asphyxiated. One great merit is its extreme simplicity and the ease with which it can be adjusted according to the patient for whom it is to be used. It is possible to give more or less oxygen with it if thought necessary.

Mr. S. G. Thorman (89, Linden-gardens, London, W.) exhibited the apparatus invented by Dr. Caro for the forced movement of stiff joints. The joints can be made to move by means of levers, and when they have once been moved the movement can be kept up by means of the swinging of a heavy pendulum. It can be applied to any joint of the limbs, including the shoulder-joint, and even rotational movements can be obtained. In a comparatively small apparatus are contained means for dealing with a great variety of conditions.

The C. de Witt Lukens Co. (St. Louis, U.S.A., whose agent in London is Mr. J. Davis, 13, Poland-street, W.) displayed their sterile catgut, prepared by Bartlett's tannic acid process. The advantages claimed for this process over chromic acid and other processes hitherto in use are that the tannic acid gut does not kink, is not hard, and will stand for the full 20 or 30 days before it begins to disintegrate, so that the full value of its stated constricting period is obtained. It is further claimed that unlike other catguts it keeps in sound condition indefinitely, so that it is not necessary to distrust such gut after it ceases to be of recent preparation.

Messrs. John Bell and Croyden, Limited (50, Wigmore-street, London, W.), showed their sterile accouchement outfits, and a model illustrating their sterilising methods and the preparation of a room for accouchement. At the same stall were also shown merlusan (Bayer) tablets, a preparation of tyrosin and mercury which, it is claimed, will produce all the effects when taken internally obtainable by the use of mercury inunction and the injection of grey oil. The combination of tyrosin with the mercury is said to render it much more absorptive. Merlusan bougies were also shown for gonorrhœa.

Mr. Hoefftcke (Woodstock-street, London, W.) showed some extension splints, and skiagrams of cases before and after treatment, the ambulatory method for fractures and diseased joints having had the approval of a good many surgeons. Photographs of a tuberculous left hip and right knee, which had been ankylosed and had been put in extension splints, showed that excellent results can be obtained by the treatment.

The Scholl Manufacturing Company (Giltspur-street, London, E.C.) displayed various foot appliances, including arch supports made of finely tempered German silver, pads designed to promote the disappearance of corns by absorption, and "toe-flex" for the treatment of bunions and for the straightening of toes permanently.

An attractive exhibit was arranged by Messrs. Burroughs Wellcome and Co. (Snow Hill Buildings, London, E.C.), among the products shown being many of particular interest to those who are interested in the application of modern scientific research to manufacturing processes. "Vaporole" "infundin" is a physiologically standardised pituitary extract, safe for use in emergencies. The "tabloid" adjustable head dressing, compressed into waistcoat-pocket size, will commend itself to surgeons for its simplicity of application—it takes but a few seconds to fit on a patient. The exhibitors aptly suggest that it can also be used as a headgear for surgical operators and their assistants.

Other exhibitors less directly surgical in their objects included Messrs. Duncan, Flockhart, and Co., who showed their various excellent pharmaceutical preparations; Sanitas Company and Messrs. Jeyes, whose disinfectants are well known; and Messrs. W. B. Saunders Company, Messrs. Baillière, Tindall, and Cox, and Messrs. D. Appleton and Co., who had on view selections from their numerous medical publications.

In one or two cases interesting exhibits were not to be seen when our representatives called, owing to the absence of the attendants.

Medical News.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND.—At the First Professional Examination held on July 14th, 15th, 16th, 17th, and 18th the following candidates were approved in the under-mentioned subjects:—

Chemistry and Physics.—Ralph William Codrington Ball, Middlesex Hospital; Eric John Swithin Bonnett, St. Thomas's Hospital; Martin Vincent Boucaud, St. Bartholomew's Hospital; Osmond Hayman Brown, Charing Cross Hospital and King's College; Alfred John Mackenzie Davies, St. Thomas's Hospital; Tyrrell George Evans, St. Bartholomew's Hospital; Donald Charles Farquharson, St. Mary's Hospital; Blanche Sutton Gardner, London School of Medicine for Women; William Rufus George Harris and Richard Hilliard, London Hospital; Anthony Bancroft Isaacs, St. Thomas's Hospital; Mahmoud Fahmy Ismail, King's College; Francis Wharton Lemarchand, Royal Albert Memorial College, Exeter; Albert Victor Lopes, St. Bartholomew's Hospital; John Joseph Miles MacDonnell, St. Thomas's Hospital; Charles Moffatt and Richard Burnard Munday, Guy's Hospital; Edmund Jacobsz Papenfus, St. Thomas's Hospital; Jacobus Cornelis Pauw and Eugene Arthur Pearson, London Hospital; Marcel Laurence Quinlivan-Bulger, South-Western Polytechnic; David Hesketh Richards, Liverpool University; John Southmead Rogers King's College; William Rowland Beatty Smyth, Cambridge University and Middlesex Hospital; and Fuad Wanis Zaglama, Manchester University.

Chemistry.—George Wilfred Almeyda, London Hospital; Margarita Sargood Barfield, London School of Medicine for Women; John Francis Edward Burns, Bristol University; Andre Alfred Casalis, London Hospital; Alfred Joseph Chiappa, Middlesex Hospital; Thomas Henry Ronald Davies, University College, Cardiff; Arthur James Fenn, Birkbeck College; Malik Girgis, B.A., King's College; Arthur Richard Neckle, Guy's Hospital; Ina Valentine Vincent, London School of Medicine for Women; and Henry Winslow Woollett, London Hospital.

Physics.—Francis Joseph Biddle. Guy's Hospital; Arnold Edgar Collie, M.A. Cantab., Middlesex Hospital; Frank Edward Edwards, Manchester University; Ahmed Faiq and Rupert Vaughan Hudson, Middlesex Hospital; Clement Nicory, St. Thomas's Hospital; Arthur Arnold Osman, Guy's Hospital; Hussein Ramzy, King's College; Khurshedjee Jamsedjee Rustomjee, Liverpool University; Malcolm Catchick Sarkies and Osbert Lacon Carden Sibley, Middlesex Hospital; Ernest Algernon Sparks, St. Thomas's Hospital; Ernest Arthur Leland Sturridge, Middlesex Hospital; Philip Harding Williams, Reading University College; and Sidney Wolff, Guy's Hospital.

Biology.—Francis Joseph Biddle, Guy's Hospital; Leonard Birtles and Alfred John Mackenzie Davies. St. Thomas's Hospital; Bryan Osmond Dewes, Birkbeck College; Louis Dinerstein, London Hospital; Gerald Hinds Duffield, Birmingham University; Arthur Patrick Halladay Egerton, Leeds University; Malik Girgis, B.A., King's College; Edwin Spencer Goodwin, Guy's Hospital; Vivian Arthur Frederick Greenish, L.D.S. Eng., Middlesex Hospital and Birkbeck College; George Raymond Hubbard, Guy's Hospital; Ernest Langton Hunter, South-Western Polytechnic; Mahmoud Fahmy Ismail, King's College; Henry Stewart Jackson, London Hospital; Ernest Kopelowitz, Guy's Hospital; Wright Lambert, Middlesex Hospital; Basil Leslie Laver, Guy's Hospital; John Crawford William MacBryan, St. Bartholomew's Hospital; Guy Meadows, Guy's Hospital; Noel Francis Meldrum, Middlesex Hospital; Richard Burnard Munday, Guy's Hospital; Jocobus Cornelis Pauw, London Hospital; Alfred Peine, Birmingham University; John Peter, Birkbeck College; David Hesketh Richards, Liverpool University; Osbert Lacon Carden Sibley, Middlesex Hospital; Mohamed Sidky, St. Thomas's Hospital; Ronald Edward Williams, Guy's Hospital; and Israel Hyman Zortman, B.Sc., Ph.D., London Hospital.

Royal College of Surgeons of England.—At the Preliminary Science Examination for the Licence in Dental Surgery held on July 14th, 16th, and 17th the following candidates were approved in the under-mentioned subjects:—

Chemistry and Physics.—Alexander Benjamin Aldred, Wandsworth Technical Institute; Walter Samuel Beauchamp, Birkbeck College; Leonard Harry Bradbeer, Royal Albert Memorial College, Exeter; Ernest William Carr, Wedgwood Institute, Burslem; Frank Wheatley Cowley, Hymers College, Hull; Leslie Douglas Crabb, Guy's Hospital; Harold James Dawes, B.A. Cantab., Birmingham University; William Dingley, Guy's Hospital; Arnold Sidney Dod, Liverpool University; Arthur William Dolamore, Royal Dental Hospital; Frederick John Downing, Norwich Technical Institute; Alan Evelyn, Polytechnic Institute; Frederick John Farmer, Derby Technical College; John Eskdale Fishburn, Municipal College, Portsmouth; Hilton George Fisher, Leamington Technical School; Fred Eric Vernon Francis, Birmingham Municipal Technical School; Frederic Clifford Gardenner, University College, Reading; Arthur Gordon, Guy's Hospital; Arthur Robert Hill, Royal Dental Hospital; Robert Ernest Murray Hofmeyr, South African College and Royal Dental Hospital; William Lawrence Holdcroft, Wedgwood Institute, Burslem; Horace Leonard Ide, Birkbeck College; John Christopher Johnson and Roy Victor Kingham, Guy's Hospital; Frank Lockwood, Harris Institute, Preston; Amin Maher, Guy's Hospital; Edgar Hamilton Muir-Smith, Municipal Technical College, Brighton; Cyril Stanley Neame, Polytechnic Institute; Edmund Boyd Osmer, Wandsworth Technical Institute; Edward Alfred Penney Parker, Guy's Hospital; Edmund Arthur Reeve, Sheffield University; Sydney Kilshaw Rigg, Bristol University; Bernard Arthur Rilot, Royal Dental Hospital; Thomas Henry Roberts, Eastern District Secondary School, Douglas; Edgar Samuels, Royal Albert Memorial College, Exeter; Cyril Fryer Smith, Liverpool University; Hugh Muir Smith, Guy's Hospital; Ronald Granville Tame, Municipal College, Bournemouth; Granville Henry Teall, Birmingham Technical School; Stanley Carlyle Turner, Municipal College, Bournemouth; Leonard Gould Whelpton, Guy's Hospital; Sydney Whitworth, Salford Royal Technical Institute; and Walter Reginald Wotton, Cheltenham Grammar School.

Chemistry.—Victor Henry Ball, Polytechnic Institute; Edward Tong Crosoer, King's College; John Beswick Drury, Polytechnic Institute; Alwyn Norman Goudge, Bournemouth Municipal College; Noel Hardcsstle Hillyard, Leeds University; Israel Jacobs, Bristol University; Gerald John Jonas, Brighton Municipal Technical College; Eric Herbert Laurence, Gloucester Municipal School; Johann Lodewijk te Water Naudé, Royal Dental Hospital; Weatherill Abbott Strickland, Birkbeck College; Herbert Newton Tiplady, Leeds Technical School; Lionel Huet Breen Turner, Towyn County School; and David Cornelius van der Spuy, Guy's Hospital.

Physics.—Hubert John Vere Raywood Allin, King Edward's School, Birmingham; John Hulme Allwood, Liverpool University; Ernest Cecil Bevis, Portsmouth Municipal College; Albert James Constance, Bristol University; William Ashley Cooper, Birmingham University and Guy's Hospital; Pieter Jacob Stephanus de Wet, B.A., Guy's Hospital; Leonard Allen Doughty, Wandsworth Technical School; Herbert Vincent Fisher, Liverpool University; John Herbert, Guy's Hospital; Bartle Leathlean, Bristol University; Ernest Findlay Shaw, Guy's Hospital; and Thomas Everett Withers, Polytechnic Institute.

Royal College of Surgeons of Edinburgh.—The following gentlemen having passed the requisite examinations have been admitted Fellows of the College:—

Robert Bertram Blair, Joseph Jopling Brown, Arthur Barrett Cardew, Harry Alexander Gibson, Dwarka Prasad Goil (Captain, I.M.S.), William Wells Greer, Allan George Hamilton, Leonard Hirsch (Captain, I.M.S.), John Honeyford, Ernest Henry Howard, Gerald Lewis Little (Captain, I.M.S.), James McClellan, John Dugald MacEwen, Ernest Muir, and James Bowman Wilkie.

The following gentlemen have obtained the single Licence of the College:—

Thomas Jefferson Williams, M.D., and Vinayak Laxman Sathe, L.M. & S. Bombay.

University of London.—At examinations held in July the following candidates were successful:—

M.D. Examination.

Branch I., Medicine.—John Lloyd Davies, B.S. (University medal), University College Hospital; Evan Parry Evans, B.S., University College, Cardiff, and London Hospital; Charles Jennings Marshall, B.S., Charing Cross Hospital; Ernest Spencer Miller, B.S., University of Liverpool; and Margaret Grace Thackrah, B.A., B.S., London (Royal Free Hospital) School of Medicine for Women.

Branch III., Mental Diseases and Psychology.—Charles Stanford Read, University College Hospital.

Branch IV., Midwifery and Diseases of Women.—Maud Frances Forrester-Brown, Edith Mary Guest, B.S., and Susie Eleanor Hill, London (Royal Free Hospital) School of Medicine for Women; Frederic James Humphrys, B.S., St. Thomas's Hospital; Raymond Montgomery, B.S., University of Leeds and Guy's Hospital; Ambrose Wilfred Owen, B.S., St. Mary's Hospital; and Mary Cowper Scott, B.S., London (Royal Free Hospital) School of Medicine for Women.

Branch V., State Medicine.—Herbert Leslie Hopkins, Guy's Hospital.

Branch VI., Tropical Medicine.—Michael Foster Reaney, London Hospital and London School of Tropical Medicine.

M.S. Examination.

Branch I., Surgery.—Harold Gardiner and Vincent Glendining, Guy's Hospital; Norman Claudius Lake, M.D., B.Sc., Charing Cross Hospital; Philip Henry Mitchiner, St. Thomas's Hospital; Alan Herapath Todd, B.Sc., Guy's Hospital; and John Black Ferguson Wilson, University of Leeds.

N.B.—This list, published for the convenience of candidates, is issued subject to its approval by the Senate.

Clinique Médicale of the Hôtel Dieu, Paris.—The next cours de vacances will take place, under the direction of Professor A. Gilbert and Professor Agrégé M. Villaret, at the Amphithéatres Trousseau and Bichat, beginning Monday, Sept. 28th. The course will comprise demonstrations and lectures on diseases of the liver, blood tension, paraplegia, hemiplegia, and tabes dorsalis, tuberculosis, typhoid fever, cardiac arrhythmias, and the methods of examination in disorders of the circulatory system and cardiac therapeutic agents, syphilis, the chemistry of the intestinal functions, examination of the kidneys, acute and chronic meningitides, and pleural and peritoneal effusions; also bacteriology and hæmatology, both general and in relation to venereal and other diseases, urinary examination, and certain special diagnostic and therapeutic methods, such as electro-diagnosis, Widal's, Wassermann's, and Weinberg's reactions, X rays and radium, thermotherapy, and massage in painful affections. The inaugural lecture will be given by Professor Agrégé Maurice Villaret, at 10 A.M., on Sept. 28th. The remaining classes will be held daily at 10.30 A.M. and 3 P.M. by M. Villaret, M. Dumont, M. Herscher, M. Bénard, M. Chabrol, M. Lippmann, M. Paul Descomps, M. Deval, M. Pierret, M. Grivot, M. Guilleminot, M. Dausset, M. Jomier, and M. Durey. The course which will be individual and practical, will consist of 30 lessons, occupying 15 days, and will be illustrated by photographic, kinematographic, and microscopical displays, with presentation of patients and instruments. A certificate will be given on completion of the course. The subscription of 100 francs should be sent to M. Deval, Chef de Laboratoire, Hôtel Dieu, Paris. The course is open to foreign medical men.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The Housing Bill.

A second reading has been given by the House of Commons to the Housing Bill of the Government.

Asylums Officers' Superannuation Bill.

A Bill to "amend the Asylums Officers' Superannuation Act, 1909," has been introduced in the House of Commons by Mr. Duncan Millar. It has the support of Sir John Jardine, Sir Charles Nicholson, Mr. Barnes, Captain Gilmour, Mr. William Redmond, Mr. Crooks, Sir John Bethell, and Captain Campbell. It has been read a first time.

HOUSE OF COMMONS.

Wednesday, July 22nd.

The Nursing Grant.

Mr. Charles Bathurst asked the Chancellor of the Exchequer whether it was proposed to make the county and borough councils or the Insurance Committees the authorities for the administration of the proposed Government nursing grant; and whether any use would be made of the county nursing associations in establishing a county nursing service with the aid of such grant.—Mr. Montagu (on behalf of Mr. Lloyd George) replied: The service referred to will be administered by the Insurance Commissioners through the Local Insurance Committees. It is hoped to secure the coöperation of the county nursing associations.

Middlesex Insurance Committee.

Mr. Nield asked the honourable Member for St. George's-in-the-East, as representing the Insurance Commissioners, whether he was aware that the Middlesex Insurance Committee had persistently refused applications of insured persons to make their own medical arrangements.—Mr. Wedgwood Benn answered: A discretion is vested in the Insurance Committee in dealing with any such application.

Mr. Booth: Is my honourable friend not aware that the Middlesex Insurance Committee does its work exceedingly well, and does he not think it would be very inadvisable to remove any portion of its local autonomy?—Mr. Wedgwood Benn: Yes, sir, the Middlesex Insurance Committee is a very capable committee, and the Commissioners have no intention of interfering with its autonomy.

The Medical Arrangements of Insured Persons.

Mr. Nield asked the honourable member for St. George's-in-the-East why, in the event of a pool proving insufficient to pay the claims upon it, the drug bill was paid in full and only a dividend was paid on medical charges; and what was the reason for favouring the chemists at the expense of and penalising the medical men who were in attendance on insured persons entitled to make their own medical arrangements.—Mr. Wedgwood Benn said in reply: The honourable member is under a misapprehension. The arrangement to which he refers is the prescribed method of calculating the Insurance Committee's contribution to the insured person, who is himself responsible for the bills he has incurred.

Mr. Glyn-Jones: May I ask the honourable gentleman whether he is aware that insured persons who asked to be allowed to make their own arrangements were informed that one of the conditions would be that probably there would not be enough money in the pool to pay their doctors?—Mr. Wedgwood Benn: Yes, I believe insured persons who did not want to take advantage of the panel doctors provided by the Act are warned that it may result in their having to pay the balance necessary to pay their own doctors.

Mr. Nield asked the honourable Member whether, in view of the insolvency of so many pools of insured persons making their own medical arrangements, the Commissioners, out of the large surplus in their hands or under their control created by persons from whom and from whose employers compulsory levies were made under the National Insurance Act, but who had continued to provide and pay for the medical services rendered to them independently of the Act, would appropriate some portion of that fund in aid of those persons who, having paid their contributions, were unable to obtain the promised benefits.—Mr. Wedgwood Benn replied: I would refer the honourable Member to the provisions of Section 15 (3) of the National Insurance Act, 1911, which preclude the adoption of the course suggested.

Sanatorium Treatment for Post Office Staff.

Mr. Mount asked the Postmaster-General what provision for sanatorium treatment was made for established servants of the Post Office.—Mr. Hobhouse answered: The medical attendance provided by the Post Office for its staff does not include sanatorium treatment. About one half of the established staff are voluntary subscribers to the Post Office Sanatorium Society, an unofficial society controlled by the members themselves. I understand that the staff in return for the subscription of 2*s*. a year are able to obtain sanatorium treatment when required without delay for as long as may be necessary.

Sir Ryland Adkins: Does that apply to the employees generally?—Mr. Hobhouse: It applies to those who subscribe an annual amount to the society.

Thursday, July 23rd.

Sanatorium Benefit.

Mr. Charles Bathurst asked the honourable Member for St. George's-in-the-East, as representing the Insurance Commissioners, whether the Commissioners had received resolutions passed by the Insurance Committees of London, Birmingham, Halifax, and other boroughs in support of the proposal to place the insured person who was being treated in a sanatorium in the same position as one who was being treated in an ordinary hospital as regarded the application of his benefits; and, if so, what action did the Commissioners propose to take in this matter.—Mr. Wedgwood Benn said in reply: Resolutions of the kind described in the first part of the question have been received from certain Insurance Committees. With regard to the second part of the question the Commissioners have no power to take any action.

Sanatorium Benefit in Dumbartonshire.

Replying to Mr. Barnes, Mr. McKinnon Wood (Secretary for Scotland) said that it was the fact that the Insurance Committee of the county of Dumbarton had declined to recommend for sanatorium treatment certain insured persons suffering from tuberculosis, and that the local authority of the burgh of Kirkintilloch had not yet agreed to treat those cases. From the information before them the Local Government Board for Scotland were not satisfied that certain cases were being properly treated, and they were in communication with the local authority on the whole subject.

Prescribing under the Insurance Act.

The Marquis of Tullibardine asked the honourable Member for St. George's-in-the-East whether the chemists in Northumberland had been told by the Northumberland Insurance Committee that, should there be a deficit at the end of the year caused by excessive prescriptions, the chemists were the people who would suffer, as their bills would not be paid; and whether he would say what redress a chemist had if the doctors upon the panel prescribed beyond the limits of the Regulations, and why was the chemist to be held responsible for the error.—Mr. Wedgwood Benn answered: My right honourable friend is not aware of any such statements, the reports to which his attention has been drawn being to the effect that if excessive prescribing were permitted to continue the chemists would suffer a loss. The Regulations contain provisions (to which the Insurance Committee also alluded) enabling the cost of excessive prescribing to be surcharged against the doctors responsible.

The Marquis of Tullibardine: May I send to the honourable gentleman the official document which contains the very words embodied in my question?—Mr. Wedgwood Benn: I shall be glad to have any document which the noble lord may wish to send me.

A Small-pox Outbreak.

Mr. Albert Smith asked the President of the Local Government Board whether the stream near the mill at Milnrow, where small-pox recently broke out, was notorious for its insanitary condition; whether he was aware that the council had a tip on which sanitary carts had been emptied close by, and that the tip had been on fire for seven weeks and had given off a disgusting stench; would he say how it was possible to decide there was no epidemiological fact supporting the idea that small-pox could originate from such a source when the circumstances had not been investigated; and whether the general liability to small-pox in the United Kingdom had decreased in proportion as the Public Health Acts had been enforced.—Mr. Herbert Samuel replied: According to my information the condition of the stream is not exceptional compared with other streams in the mill districts of Lancashire. The nearest tip of the council is a quarter of a mile away. The tip has not been on fire recently, and it has no connexion with the stream. I am advised that general medical knowledge was sufficient to enable it to be stated that there are no epidemiological facts supporting the theory that small-pox can originate in the manner suggested. It is fortunately true that during recent years greater attention has been devoted to perfecting public health administration and that during that time there have been fewer serious outbreaks of small-pox.

Monday, July 27th.

Middlesex Insurance Committee.

Mr. Nield asked the honourable Member for St. George's-in-the-East, as representing the Insurance Commissioners, what was the reason for the delay in ascertaining the amount of the special arrangements fund in Middlesex available for distribution in respect of claims arising in the year 1913; had the whole of the claims been received; and, if so, what was the date when the last of such claims was received. The honourable Member also asked whether all the claims upon the special arrangement fund under the control of the Middlesex committee out of which Dr. J. Chambre, of South Ealing, was entitled to be paid for attendance upon 29 persons, members of the District Railway staff, had been sent in; when was the last received; what was the reason for withholding payment as long ago as 1913; and would the Insurance Commissioners take steps to secure to the committees better administration of the Act.—Mr. Wedgwood Benn answered: Payment has been made to all insured persons entitled to a contribution from the special arrangements fund, except those who have made their own arrangements with the particular doctor referred to. In their case the Insurance Committee are endeavouring, for the special convenience of the doctor and in accordance with his wishes, to obtain the insured persons' consent to payments being made to the doctor direct.

Medical Benefit and Proprietary Tonic Foods.

Mr. W. Thorne asked the honourable Member for St. George's-in-the-East whether medical benefit to insured persons included the provision of proprietary tonic foods; whether he was aware that in certain conditions of ill-health drugs were of little value, and that effective treatment could often be given with suitable concentrated food; and whether he would allow medical practitioners at their discretion to prescribe on the lines indicated.—Mr. Wedgwood Benn said in reply: Insured persons are entitled to proper and sufficient medicines as part of their medical benefit, and the question whether any particular compound or preparation is included within that category falls for decision in the first instance by the Insurance Committee on the circumstances of the individual case.

Payment of Chemists.

Mr. Fred Hall (Dulwich) asked the honourable Member for St. George's-in-the-East whether the bills of chemists supplying drugs under the National Insurance Act had been heavily discounted in districts where sufficient funds were not available to pay them; whether the accounts of the doctors had been similarly dealt with; whether the charges for drugs were settled before the names of the chemists were placed upon the approved lists; whether such discounting had in any case been due to overcharging; if so, whether chemists overcharging had been warned; and whether there were any grounds for introducing variations of prices in different districts.—Mr. WEDGWOOD BENN answered: The chemists in some areas have been paid under discount pending the result of the scrutiny in progress. The doctors are, however, paid on a different basis and no such question arises in their case. In the normal course the tariff is settled, in substance at any rate, before the chemists renew their agreements, but in some cases details have been left for subsequent settlement by general consent. If by overcharging I correctly understand the honourable Member to mean pricing inaccurately and not in accordance with the tariff, such errors are discovered and adjusted when the accounts are examined. In reply to the last part of the question, if the honourable Member will give particulars of any cases he has in mind I will make inquiries.

Sanatoria Grants.

Mr. WORTHINGTON EVANS asked the President of the Local Government Board how many new sanatoria have been built by means of grants from the £1,500,000 provided by the Finance Act, 1911, and how many were in course of erection.—Mr. HERBERT SAMUEL replied: So far as England is concerned the number of cases in which building is being aided by capital grants is 69. The work has been completed in 22 cases. In the remaining cases the plans have been approved by the Local Government Board, and in most of them, I assume, the buildings are in course of erection. In addition 14 sites have been approved for the erection of new sanatoria.

TUESDAY, JULY 28TH.

Overcrowded Schoolrooms and Disease.

Mr. KING asked the President of the Board of Education how many elementary schools, comprising how many school places, were still assessed on the 8 square feet per scholar basis; and whether, in view of the fact that overcrowded classrooms predisposed the children educated in them to tuberculosis, he would issue a circular fixing a date next year for assessing all schools on the 10 square feet basis.—Mr. J. A. PEASE replied: In the Board's annual report for 1909–10 it was stated that outside London the reassessment of public elementary schools upon the basis of 10 square feet per head for older scholars and 9 square feet for "infants" was practically completed. There are only a very few cases in which the reassessment has not come into force pending alterations to premises and the erection of new schools. In London the reassessment will be made as part of the scheme for reducing all classes to 40 or 48 places for older children and infants respectively. I do not think the labour involved in ascertaining the precise number of cases still outstanding would be justified under the circumstances, nor does it appear to me necessary to issue a circular on the subject.

Tuberculosis Treatment for the Metropolitan Police.

Answering Dr. ADDISON, Mr. MCKENNA (the Home Secretary) wrote: Prompt measures are taken in cases of suspected or early tuberculosis in the metropolitan police; and arrangements have for some years been in existence by which such cases are at once transferred to suitable hospitals or sanatoria for observation or for treatment as each may require. The hospital established for the City Police Force no doubt serves satisfactorily for a comparatively small force concentrated in an area of one square mile, but to establish special hospitals to serve the whole metropolitan area of some 700 square miles would be a most costly expedient and it would not yield such good results as the present system under which sick police had the benefit of treatment in the great hospitals of London which place at the disposal of the sick the services of the most distinguished surgeons and physicians of the metropolis. For every man in hospital a subscription of a guinea a week is paid out of the Police Fund.

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BOURNE, A. W., M.B., B.C. Cantab., F.R.C.S. Eng., has been appointed Obstetric Surgeon to Out-patients at St. Mary's Hospital.

ELLIOT, T. S., L.R.C.P. Lond., M.R.C.S., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Southwell District of the county of Nottingham.

GAZDAR, GERTRUDE, M.B., B.S. Lond., has been appointed Curator of the Museum at the Royal Free Hospital.

HOLT, H. M., M.R.C.S., L.S.A., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Malton District of the county of York.

LLOYD, MURIEL A., M.B., B.S. Lond., has been appointed Assistant Anæsthetist at the Royal Free Hospital.

MILLS, CLAUDE HARRY, M.R.C.S., L.R.C.P. Lond., has been appointed Honorary Assistant Surgeon to St. Paul's Hospital for Skin and Genito-Urinary Diseases, Red Lion-square, W.C.

NEIL, J. CAMPBELL, M.B., Ch.B Edin., has been appointed Junior House Surgeon at the Blackburn and East Lancashire Royal Infirmary.

NEILL, A. W., M.D., Ch.B. Edin., has been appointed Physician-Superintendent of Warneford Asylum, Oxford.

NEWSHOLME, H. P., M.B., Ch.B. Oxon., B.Sc. Lond., M.R.C.P., D.P.H., has been appointed Assistant Medical Officer of Health to the Surrey County Council.

PIRRIE, R. REID, M.D. Durh., has been appointed Visiting Medical Officer to the Northern Counties Joint Poor-law Colony for the Feeble-Minded and Epileptic at Prudhoe Hall, Northumberland, and Visiting Physician in charge of the Durham County Council Sanatorium at Sealburn, Ryton-on-Tyne.

PLATT, KATE ANNE, M.B., B.S. Lond., has been appointed Principal of the new Queen Mary Medical College at Delhi.

STANFORD, W. BEDELL, M.D. Durh., M.R.C.S., L.R.C.P. Lond., has been appointed Honorary Medical Officer to the King Edward Memorial Hospital, Ealing.

VINER, G., M.D. Lond., F.R.C.S. Eng., has been appointed Assistant Surgeon to the Royal Westminster Ophthalmic Hospital.

WALKER, L. CECIL, M.R.C.S., L.R.C.P. Lond., has been appointed Medical Officer of Health for the Combined Districts of Malton and Norton, Yorks.

WALKER, NORMAN H., M.D., B.S. Lond., D.P.H. R.C.P.S., M.R.C.S., L.R.C.P. Lond., has been appointed Assistant Medical Officer of Health to Durban Corporation, Durban, Natal.

WHITEHORNE-COLE, A. G., M.R.C.S., L.R.C.P. Lond., has been appointed Clinical Assistant to the Cancer Hospital.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ASHTON-UNDER-LYNE DISTRICT INFIRMARY AND CHILDREN'S HOSPITAL.—Assistant House Surgeon. Salary £100 per annum, with board, residence, and laundry.

BANBURY, HORTON INFIRMARY.—House Surgeon. Salary £120 per annum, with board and residence.

BARROW-IN-FURNESS, NORTH LONSDALE HOSPITAL.—House Surgeon. Salary £150 per annum, with residence, board, and laundry.

BEDFORD COUNTY HOSPITAL.—Assistant House Surgeon. Salary £100 per annum, with board, lodging, and laundry.

BIRKENHEAD BOROUGH HOSPITAL.—Senior House Surgeon. Salary £120 per annum, with board and laundry.

BIRMINGHAM, QUEEN'S HOSPITAL.—Secretary and General Superintendent. Salary £400 per annum.

BOOTLE BOROUGH HOSPITAL.—Senior and Junior House Surgeons. Salaries £120 and £100 respectively, with residence, board, and laundry.

BOURNEMOUTH, ROYAL VICTORIA AND WEST HANTS HOSPITAL.—Physician.

BRADFORD CITY EDUCATION COMMITTEE.—Chief School Dentist. Salary £350 per annum.

BRADFORD CITY HOSPITAL FOR CONSUMPTIVES.—Resident Medical Officer. Salary £200 per annum, with board and residence.

BRADFORD ROYAL INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with board, residence, and washing.

BRIGHTON THROAT AND EAR HOSPITAL, Church-street, Queen's-road.—Non-Resident House Surgeon for six months. Salary at rate of £150 per annum.

BRISTOL CITY ASYLUM.—Second Assistant Medical Officer, unmarried. Salary £200 per annum, with apartments, board, washing, and attendance.

BROADMOOR STATE CRIMINAL LUNATIC ASYLUM, Crowthorne, Berks.—Junior Assistant Medical Officer, unmarried. Salary £225 per annum, with quarters, coal, gas, and attendance.

BURY ST. EDMUNDS, WEST SUFFOLK GENERAL HOSPITAL.—Resident Medical Officer, unmarried. Salary £120 per annum, with board, lodging, and laundry.

CALCUTTA CORPORATION.—Assistant Health Officer. Salary Rs.700 per mensem.

CAMBERWELL INFIRMARY AND GORDON-ROAD INSTITUTION.—Assistant Medical Officer. Salary £200 per annum. Also Assistant Medical Officer for Infirmary. Salary £190 per annum. Apartments, board, and washing in each case.

CANCER HOSPITAL, Fulham-road, S.W.—House Surgeon for six months. Salary £70 per annum.

CAPETOWN, SOMERSET HOSPITAL.—Assistant Medical Officer. Salary £200 per annum, with rations and quarters.

COLCHESTER, ESSEX COUNTY HOSPITAL.—House Surgeon. Salary £100 per annum, with board, residence, and washing.

CROYDON BOROUGH HOSPITAL FOR INFECTIOUS DISEASES.—Assistant Resident Medical Officer. Salary £150 per annum, with board, residence, and laundry.

DERBY, DERBYSHIRE HOSPITAL FOR SICK CHILDREN.—Female Resident Medical Officer. Salary £80 per annum.

DEVONPORT, ROYAL ALBERT HOSPITAL.—House Surgeon, unmarried, Salary £150 per annum, with board and laundry.

DOWNPATRICK, DOWN DISTRICT LUNATIC ASYLUM.—Second Assistant Medical Officer, unmarried. Salary £170 per annum, with apartments, board, washing, attendance, &c.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, S.E.—House Physician for five months. Salary at rate of £75 per annum, with board, residence, and washing.

FAREHAM, HANTS COUNTY ASYLUM.—Third Assistant Medical Officer, unmarried. Salary £250 per annum, with apartments, board, washing, and attendance.

GLAMORGAN COUNTY COUNCIL COMMITTEE FOR THE CARE OF THE MENTALLY DEFECTIVE.—Medical Officer. Salary £300 per annum.

GREENWICH UNION INFIRMARY AND WORKHOUSE.—First Assistant Medical Officer, unmarried. Salary £175 per annum, with apartments, rations, and washing.

HELLINGLY, EAST SUSSEX COUNTY ASYLUM.—Third Assistant Medical Officer. Salary £250 per annum, with board, lodging, washing, and attendance.

HOSPITAL FOR WOMEN, Soho-square.—Clinical Assistants in Out-patient Department.

HULL ROYAL INFIRMARY.—Senior House Surgeon, unmarried. Salary £150 per annum, with board and apartments. Also Assistant House Surgeon. Salary at rate of £100 per annum, with board and lodging.

INVERNESS, NORTHERN INFIRMARY.—House Surgeon. Salary £100 per annum, with board, &c.

KIRKMABRECK PARISH, Creetown, Kirkcudbrightshire.—Medical Officer. Salary £40 per annum.

LANCASTER ROYAL INFIRMARY.—House Surgeon, unmarried. Salary £110 per annum, with residence, board, attendance, and washing.

LEAMINGTON SPA, WARNEFORD, LEAMINGTON, AND SOUTH WARWICKSHIRE GENERAL HOSPITAL.—House Physician. Salary £85 per annum, with board, residence, and laundry.

LEEDS, CITY HOSPITALS FOR INFECTIOUS DISEASES AND TUBERCULOSIS.—Two Assistant Medical Officers, unmarried, for six months. Salary at rate of £130 per annum each, with board, lodging, and washing.

LEEDS TUBERCULOSIS ASSOCIATION SANATORIUM, Gateforth, near Selby.—Resident Medical Officer for six months. Salary at rate of £100 per annum, with board, lodging, and washing.

LEICESTER, NORTH EVINGTON POOR-LAW INFIRMARY. — Senior Assistant Medical Officer and Junior Assistant Medical Officer. Salaries £200 and £150 per annum respectively, with apartments, rations, laundry, and attendance.

LEICESTER ROYAL INFIRMARY.—Assistant House Surgeon for six months. Salary at rate of £100 per annum, with board, apartments, and washing.

LIVERPOOL EDUCATION COMMITTEE.—Two Assistant School Medical Officers. Salary at rate of £250 per annum.

LONDON LOCK HOSPITAL.—House Surgeon to Female Hospital, Harrow-road, W. Salary £100 per annum, with board, residence, and washing.

LONDON TEMPERANCE HOSPITAL, Hampstead-road, N.W.—Assistant House Surgeon for six months. Salary at rate of £105 per annum. Also Assistant Resident Medical Officer for six months. Salary at rate of £80 per annum, with board, residence, and washing.

MAIDSTONE, KENT COUNTY OPHTHALMIC HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board, residence, and laundry.

MAIDSTONE, WEST KENT GENERAL HOSPITAL. — Assistant House Surgeon, unmarried. Salary £80 per annum, with board, lodging, &c.

MANCHESTER CHILDREN'S HOSPITAL, Pendlebury.—Resident Medical Officer, unmarried, for six months. Salary at rate of £100 per annum.

MANCHESTER HOSPITAL FOR CONSUMPTION AND DISEASES OF THE THROAT AND CHEST.—Resident Medical Officer for In-patient Department, Bowdon, Cheshire. Salary £100 per annum, with board, apartments, washing, &c.

MANCHESTER, HULME DISPENSARY, Dale-street, Stretford-road.—House Surgeon. Salary £180 per annum, with apartments, attendance, coal, and gas.

MANCHESTER, MONSALL FEVER HOSPITAL.—Fourth Medical Assistant. Salary £150 per annum, with board, lodging. and washing.

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN, Park-place, Cheetham Hill-road.—House Surgeon. Salary £120 per annum, with apartments and board.

MANCHESTER ROYAL EYE HOSPITAL.—Junior House Surgeon. Salary £80 per annum, with residence, board, and washing.

MANCHESTER ROYAL INFIRMARY.—Medical Officer for Out-Patients and Accidents for six months. Salary at rate of £100 per annum, with board and residence.

MANCHESTER, ST. JOHN'S HOSPITAL OF MANCHESTER AND SALFORD FOR THE EAR —Honorary Clinical Assistants.

METROPOLITAN HOSPITAL, Kingsland-road, N.E.—House Surgeon and Assistant House Surgeon for six months. Salary at rate of £60 and £40 respectively, with board and washing.

MILLER GENERAL HOSPITAL FOR SOUTH EAST LONDON. Greenwich-road, S.E.—Junior House Surgeon for six months. Salary at rate of £85 per annum, with board, residence, and laundry.

NEWARK-UPON-TRENT HOSPITAL.—Resident Medical Officer, unmarried. Board, lodging. and laundry provided.

NEWCASTLE-UPON-TYNE, ROYAL VICTORIA INFIRMARY.—Medical Registrars and Surgical Registrars. Salary at rate of £50 per annum.

NOTTINGHAM, BAGTHORPE INSTITUTION AND INFIRMARY.—Resident Assistant Medical Officer, unmarried, for six months. Salary at rate of £165 per annum, with apartments, &c.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon, unmarried. Salary £180 per annum, with apartments (not board), attendance, light, and fuel.

NOTTINGHAM GENERAL HOSPITAL.—Assistant House Physician for six months. Salary at rate of £100 per annum, with board, residence, and laundry.

OLDHAM ROYAL INFIRMARY.—Senior House Surgeon and Third House Surgeon for six months. Salary at rate of £140 and £100 per annum respectively, with residence, board, and laundry.

OXFORD, CITY OF.—Assistant Medical Officer of Health and School Medical Officer. Salary £300 per annum.

PAISLEY INFECTIOUS DISEASES HOSPITAL.—Resident Medical Officer. Salary £150 per annum, with board, washing, and attendance.

PUTNEY HOSPITAL, Putney Common, S.W.—Resident Medical Officer. Salary £100 per annum, with rooms, board, and laundry.

ROCHDALE INFIRMARY AND DISPENSARY.—Senior House Surgeon, unmarried. Salary £120 per annum, with board, residence, and laundry.

ROUSAY AND EGILSHAY, PARISH OF.—Resident Medical Officer. Salary £61 sterling per annum, with house (partly furnished) and garden. From Medical Association £30.

ROYAL EDINBURGH ASYLUM, Morningside.—Assistant Physician Salary £175 per annum.

ROYAL FREE HOSPITAL, Gray's Inn-road, W.C.—Female Assistant to Pathologist. Salary £150 per annum.

ROYAL NAVAL MEDICAL SERVICE.—Twenty-five Appointments.

ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN, S.E.—Junior Resident Medical Officer. Salary at rate of £70 per annum, with board and washing. Also Senior Resident Medical Officer. Salary at rate of £90 per annum, with board and washing.

ST. BARTHOLOMEW'S HOSPITAL TUBERCULOSIS DISPENSARY FOR THE CITY OF LONDON, &c.—Medical Officer. Salary £300 per annum.

ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN, Plaistow, E.—Assistant Resident Medical Officer. Salary at rate of £100 per annum, with board, residence, and laundry.

ST. MARY'S HOSPITAL, Paddington, W.—Resident Assistant Anæsthetist for six months. Salary at rate of £100 per annum, with board and residence.

SALFORD ROYAL HOSPITAL.—Junior House Surgeon and Casualty House Surgeon. Salary at rate of £100 per annum each, with board and residence.

SALFORD UNION INFIRMARY.—Resident Assistant Medical Officer, unmarried. Salary £150 per annum, with apartments, attendance, and rations.

SALISBURY (GENERAL) INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with apartments, board, and lodging.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Senior and Junior House Surgeons. Salaries £100 and £80 per annum respectively, with board, residence, &c.

SHEFFIELD, EAST END BRANCH OF THE CHILDREN'S HOSPITAL (OUT-PATIENT DEPARTMENT).—House Surgeon. Salary £120 per annum, with board and residence.

SOUTHEND-ON-SEA COUNTY BOROUGH.—Assistant Medical Officer. Salary at rate of £250 per annum.

SOUTH SHIELDS, INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY.—Junior House Surgeon. Salary £115 per annum, with residence, board, and washing.

SOUTHWARK UNION INFIRMARY, East Dulwich-grove. S.E.—Third Assistant Medical Officer. Salary at rate of £160 per annum, with board, lodging, and washing.

STOKE-ON-TRENT, NORTH STAFFORDSHIRE INFIRMARY, Hartshill.—House Physician and Casualty and Out-patient Officer, unmarried, for six months. Salary at rate of £120 per annum each, with board, residence, and washing.

STOKE-UPON-TRENT UNION INSTITUTE AND HOSPITAL, London-road, Newcastle, Staffs.—Assistant Resident Medical Officer, unmarried. Salary £160 per annum, with rations, apartments, and washing.

SUNDERLAND ROYAL INFIRMARY.—House Physician and Junior House Surgeon. Salaries £120 and £100 per annum respectively, with board, residence, and laundry.

SWANSEA GENERAL AND EYE HOSPITAL.—House Surgeon. Salary £125 per annum, with board, washing, and attendance. Also House Physician. Salary £125 per annum, with board, apartments, and laundry.

TRURO, ROYAL CORNWALL INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with rooms, board, and washing.

WALSALL AND DISTRICT HOSPITAL.—Junior House Surgeon and Anæsthetist. Salary £110 per annum, with board, residence, and laundry.

WANDSWORTH UNION INFIRMARY, Ouseley-road, Balham, S.W.—Second Assistant Medical Officer, unmarried. Salary at rate of £150 per annum, with board, lodging, and washing.

WEST BROMWICH AND DISTRICT HOSPITAL.—Assistant Resident House Surgeon and Anæsthetist, unmarried. Salary £100 per annum, with board, residence, and washing.

WEST RIDING COUNTY COUNCIL.—School Medical Inspector. Salary £325 per annum.

WEST RIDING OF THE COUNTY OF YORK, STORTHES HALL ASYLUM, Kirkburton, near Huddersfield.—Assistant Medical Officer. Salary £230 per annum, with rooms, board, attendance, and washing.

WESTON-SUPER-MARE HOSPITAL.—House Surgeon, unmarried. Salary £120 per annum, with residence, board, and laundry.

WILLESDEN URBAN DISTRICT COUNCIL ISOLATION HOSPITAL, Neasden. —Assistant Medical Superintendent, unmarried. Salary £200 per annum, with board, lodging, and washing.

WINCHESTER. ROYAL HAMPSHIRE COUNTY HOSPITAL.—House Physician. Salary £80 per annum.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of a vacancy for a Certifying Surgeon under the Factory and Workshop Acts at Gargrave, in the county of York.

Births, Marriages, and Deaths.

BIRTHS.

BENSUSAN-BUTT.—On July 24th, to Dr. Ruth and G. C. Bensusan-Butt, of North Hill, Colchester—twins (boy and girl).

STANSFELD.—On July 24th, at Bryanston-street, Portman-square, W., to Dr. and Mrs. A. E. Stansfeld, a daughter.

MARRIAGES.

CROSSLEY—SKINNER.—On July 29th, at Wavendon, Leonard Crossley, M.D., of Winsley, Wilts, to Innes Muriel Skinner, of Wavendon, Bucks.

WARNER—TAYLER.—On July 25th, at Southwark Cathedral, Harold Percy Warner, M.B., B.S., to Kathleen Rose, eldest daughter of J. P. Tayler, of Old Charlton, Kent.

DEATHS.

SPETTIGUE.—On July 27th, at Doreen, Wellington, Somerset, Harriett, wife of William Spettigue, M.B. Edin.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

TERCENTENARY OF LOGARITHMS AND JOHN NAPIER.

THE tercentenary of the invention of logarithms by John Napier, the laird of Merchiston, has just been celebrated at Edinburgh. Merchiston Castle, where he was born in 1550, is practically a part of Edinburgh and an historical building. In 1614 he published at Edinburgh his famous "Mirifici Logarithmorum Canonis Descriptio," or marvellous abbreviated computation by natural or hyperbolic logarithms. Although these logarithms have been of great service in the higher mathematics, the kind now chiefly used in common computation were proposed by Henry Briggs, a contemporary and reader in geometry in Gresham College, London, and afterwards Savilian professor at Oxford, who founded his tables upon Napier's, but chose a different base to his system. It is said that Briggs was so surprised at the invention that he could not rest till he saw the inventor, and that, when they did meet, a quarter of an hour was spent, each beholding the other with admiration, before one word was spoken. The invention, as said Laplace, the famous French astronomer, "reduces to a few days the labour of several months, doubles the life of astronomers, and is worthy of praise." There are many men who use the typewriter or other appliances who are ignorant of their mechanical construction, but can appreciate their practical utility and in the same way many men have used logarithms without understanding anything of the properties of hyperbolas or fractional exponents or irrational numbers, investigations which although attractive to some persons are repellent to others. The medical profession will add its tribute with other scientific and technical professions to the value of a wonderful paper calculating machine. The engineer has found it especially useful, but he has now invented, and perhaps perfected, mechanical calculating machines which in some instances supersede the use of the paper machine. These modern machines are far superior to the machine which is attributed to Napier—viz., Napier's rods or bones, the art of computing by which has been dignified under the name of Rhabdology, as these small squared pieces of bone, ivory, box, or silver, although interesting to the curious, make the process of calculation by topsyturvy and right to left methods too tedious to be of any real value.

"BY JIMINY."

To the Editor of THE LANCET.

SIR,—On p. 1295 of your number for May 2nd, 1914, you remark that the expletive "By Jiminy" has always been more current in books than in real life, so may I tell a little story?

On the night of Good Friday, 1894, I think, snow fell heavily in Maidstone and lay in deep drifts next day. Hard frost supervened. Easter morning was like Christmas, except for brilliant sunshine at 6.30 A.M. Two friends returning from early service were met at their door by a little boot and knife boy, stamping his feet, and blowing his blue fingers. He exclaimed, "Jiminy! ain't it cold?" His hearers were amused, but the remark did not seem out of the way or unusual. So, perhaps, it was then common in Kent.

I am, Sir, yours faithfully,
July 9th, 1914.
A READER.

THE ISLAND OF ST. HELENA.

IT appears from the Blue-book for the year 1913 just received at the Colonial Office that the estimated population of St. Helena is now 3650. The birth-rate for the year was 28·7, as against 28·4 per 1000 in 1912. The death-rate increased from 12·5 per 1000 in 1912 to 14·5 in 1913. There were 6 deaths from tuberculosis, being a mortality-rate of 1·7 per 1000 living. The infant mortality-rate was 58·3 per 1000 births. The water-supply in many of the country districts is, and always has been, very unsatisfactory. The ailments of children are very commonly aggravated by the almost universal prevalence of intestinal worms, these parasites being due to defective water in the majority of instances. The mean temperature of the year was 62·4° F., and the total rainfall 43·63 inches. The number of rainy days totalled 273. A "clear sky" was recorded on May 31st—a very unusual observation. There were 139 admissions to the hospital during the year and 8 deaths. Miss Barnes completed her three years' engagement and was replaced by Miss Sherlock; both had been selected by the Colonial Nursing Association.

GARBAGE DISPOSAL.

ACCORDING to a report received at the British Foreign Office from Mr. H. E. Gresham, Vice-Consul at Cleveland, Ohio, the collection and disposal of garbage in that city are exceptionally well cared for, the disposal plant being said to be one of the best in the United States. In 1913 practically 3,000,000 pounds of grease and over 10,000,000 tons of tankage were obtained and sold for over $150,000. There are 250 tons of garbage collected in the city each day, from which are obtained 35 tons of dried tankage. The Cleveland method is called the reduction process, as contrasted to dumping into a body of water, burying underground, or burning. The system consists essentially of reduction by the application of heat to the garbage, producing a sterile tankage and recoverable products. The raw garbage is placed in closed steel tanks, having capacities from 1 to 10 tons each, and cooked by steam from four to eight hours. It is usual to keep about a 70-pound steam pressure on the cooking chambers, which is sufficient to render the product entirely sterile. After cooking, the liquors, consisting of condensed steam and grease, are drawn off. The grease is sold to large manufacturing concerns that have refineries. It brings about 2*d.* per pound, and has very natural and profitable uses. The larger part is used to make soap and candles, but some is a white, clear glycerine, which can be used for medicinal purposes. The tankage remaining after the liquors are drawn off is sold to fertiliser companies. In a ton of commercial fertiliser some 500 pounds of tankage may be used. To this are added potash, salt, and other ingredients to make the proper composition for plant food.

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Dr. von Schneider.—Some notes with reference to soured milk which may afford the information desired will be found in "Notes on Soured Milk and Other Methods of Administering Selected Lactic Germs in Intestinal Bacterio-Therapy," by Elie Metchnikoff, of the Pasteur Institute, Paris. Published in 1909 at the price of 1*s.* by Messrs. John Bale, Sons, and Danielsson, Limited, 83–91, Great Tichfield-street, Oxford-street, London, W.

P. N., L.R.C.P.—Information will be found in THE LANCET of July 5th, 1913, p. 7. The title of the article was "The Kinetic Theory of Shock and its Prevention Through Anoci-Association (Shockless Operation)." By George W. Crile, M.D. A book on "Anoci-Association," by Dr. George W. Crile and Dr. William E. Lower, has just been published by Messrs. W. B. Saunders Company, 9, Henrietta-street, Covent Garden, London, W.C., at the price of 13*s.* net. (*Vide* announcement on p. 3 (advertisements) in THE LANCET of July 25th.)

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Dr. Pritchard: Bacterial Therapy Department. Mr. Gibb: Diseases of the Eye.

TUESDAY.—10 A.M., Dr. Simson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Souttar: Operations. Dr. Simson: Diseases of Women. Mr. Gibb: Diseases of the Eye.

THURSDAY.—9 A.M., Dr. Bernstein: Bacterial Therapy Department. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Mr. Gibb: Diseases of the Eye.

FRIDAY.—10 A.M., Dr. Simson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Eye Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Souttar: Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

TUESDAY to SATURDAY (each day).—Special Holiday Course.

THE THROAT HOSPITAL, Golden-square, W.

MONDAY.—5.15 P.M., Special Demonstration of Selected Cases.
THURSDAY.—5.15 P.M., Clinical Lecture.

For further particulars of the above Lectures, &c., see Advertisement Pages.

A DIARY OF CONGRESSES.

THE following Congresses, Conferences, and Exhibitions are announced.

In 1914:—

July 27th–Aug. 2nd (Havre).—Congress of the French Association for the Advancement of Science.

July–September (Australia).—Eighty-fourth Annual Meeting of the British Association for the Advancement of Science. (July 28th to August 3rd at Perth, August 8th to 12th at Adelaide, August 13th to 19th at Melbourne, August 20th to 26th at Sydney, August 27th to Sept. 1st at Brisbane).

Aug. 2nd–10th (Paris).—Tenth Congress of Esperantists.

„ 3rd–8th (London).—Sixth International Dental Congress.

„ 10th–15th (St. Petersburg).—Twelfth International Congress of Ophthalmology.

„ 29th–Sept. 14th (Toronto).—Canadian National Exhibition.

Sept. 7th–12th (Berne).—International Congress for Neurology, Psychiatry, and Psychology.

„ 10th–12th (Fort William and Port Arthur, Ontario).—Fourth Annual Congress of the Canadian Public Health Association.

„ 21st–26th (Victoria, B.C.).—Dominion Exhibition.

„ 21st–26th (Vienna).—Third International Congress on Diseases of Occupation.

„ 30th–Oct. 4th (Brussels). Fourteenth French (de langue française) Congress of Medicine.

Oct. 31st–Nov. 2nd (Berlin).—First Congress of the International Society for Sexual Research.

Nov. 15th–21st (London).—Health Week. (Under the direction of the Health Week Committee appointed by the Royal Sanitary Institute.)

(St. Petersburg).—Third Mendeléeff Congress of Pure and Applied Chemistry and Physics.

In 1915:—

Feb. 20th (opens) (San Francisco).—Panama-Pacific International Exposition.

May 31st–June 5th (London, South Kensington).—Sixth International Congress of Social Work and Service.

Sept. 5th–8th (Hamburg).—Tenth International Congress of Otology.

„ 8th (begins) (Manchester).—Meeting of the British Association.

„ 9th–12th (Hamburg).—Fourth International Rhino-Laryngological Congress.

„ 13th–17th (New York).—Seventh International Congress for Obstetrics and Gynæcology.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. I. of 1914, which was completed with the issue of June 27th, were given in THE LANCET of July 4th.

VOLUMES AND CASES.

VOLUMES for the first half of the year 1914 are now ready. Bound in cloth, gilt lettered, price 16*s.* carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, July 29th, 1914.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
July 23	29 72	N.W.	0·07	112	66	54	55	59	Cloudy
„ 24	29·68	W.	...	109	66	58	57	61	Cloudy
„ 25	29·62	W.	...	124	66	56	56	60	Cloudy
„ 26	29·60	W.	0·05	111	62	52	54	57	Cloudy
„ 27	29·56	W.	...	115	65	52	52	54	Cloudy
„ 28	29·70	N.	...	109	68	54	56	60	Fine
„ 29	29·88	N.W.	...	92	63	56	56	60	Cloudy

The following magazines, journals, &c., have been received:— Interstate Medical Journal, Monthly Cyclopedia and Medical Bulletin, Archives of Internal Medicine, South African Medical Record, School Hygiene, Annals of Tropical Medicine and Parasitology, University of Toronto Medical Bulletin, Journal of Mental Science, Annali di Medicina Navale e Coloniale, Canadian Gazette, Indian Medical Gazette, Indian Journal of Medical Research, Therapeutic Gazette, Bulletins et Memoires de la Société Médicale des Hôpitaux de Paris, Dublin Journal of Medical Science, Office International d' Hygiéne Publique, Canadian Practitioner and Review, Journal d'Urologie, Annales de Medicine, Malaria e Malattie dei Paesi Caldi, Journal of Hygiene, &c.

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Y.—Dr. L. M. Young, San Francisco; York Retreat, Secretary of.

Letters, each with enclosure, are also acknowledged from—

A.—Mr. E. Arnold, Lond.; A. P. F.; A. W. D.; Ardath Tobacco, Lond.; Anderson's College Medical School, Glasgow ; Apollinaris Co., Lond.; Alliance Bank of Simla, Delhi, Manager of.

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THE LANCET, August 8, 1914.

A Lecture

ON

CANCER OF THE UTERUS.

Delivered at the Cancer Hospital, Brompton,

By CHARLES RYALL, F.R.C.S. Eng.,
SURGEON TO THE CANCER HOSPITAL, BOLINGBROKE HOSPITAL, ETC.

Gentlemen,—Those organs peculiar to women, by which the race is generated and nurtured, pay an oppressive tax to the diseases of nature. All kinds of maladies, functional or organic, temporary or permanent, inflammatory or neoplastic, levy their toll on them; but the commonest and deadliest of all is cancer. It is the disease for which womankind has the greatest fear. Round it certain deplorable myths have gathered that prevent them from recognising its onset, or if a suspicion does arise in their minds they keep it too long a secret, hoping that the worst may not prove true. Their attitude, too, is tinged with fatalism, and few know or believe that the disease is curable. Of all forms that contribute to the gigantic death roll of malignant disease, cancer of the uterus far surpasses all others in number. It claims many more victims than cancer of the breast in the female, three times as many victims as cancer of the tongue and mouth in the male, and thrice as many as cancer of the rectum in both sexes. Shortly after the second decade of life it causes more deaths than cancer in any other part of the body, and not only keeps the lead but does so with increasing pace up to the age of 65; in fact, of all cases of malignant disease in women 1 in 5 is due to uterine cancer, and amongst deaths from diseases of every kind, malignant or otherwise, occurring in the female between the ages of 35 and 55 about 1 in 20 is due to cancer of the uterus.

AGE OF OCCURRENCE.

The disease may occur at any age, though it is comparatively rare below the age of 30. We have had in this hospital a case in a girl aged 14. I have operated on one 23 years old. In the earlier ages the disease is almost invariably of rapid progress, but I have a patient alive and well on whom I operated seven years ago when she was only 26. It most commonly occurs between the ages of 40 and 55, and would seem to be a disease more of the aging than of the aged uterus.

A great deal has been made of the increased incidence at the time of the menopause, and it is interesting to examine this question carefully. If we construct a percentage curve from the most recent mortality returns of the Registrar-General for England and Wales we shall find that the greatest number of deaths occur in the quinquennial age period 50–55, from which we might gather that it is strongly post-climacteric in incidence (see Chart). This differs very considerably from Leitch's statistics of 1639 cases of uterine cancer at the Middlesex Hospital. He gives the highest percentage as occurring during the age period 40–45, but he calculated from the clinical histories of each case the approximate age at which the disease began—which is the important point, and he excluded cases of cancer of the body. Still the difference is marked. Mr. O. T. Dinnick, our medical registrar, has kindly gone over the clinical histories of the last 760 cases occurring in the Cancer Hospital, and a curve drawn from his figures almost exactly coincides with that of Leitch. The full ten-years interval therefore between the summits of the curves indicating age at onset and age at death may be partially accounted for by the effect of operative treatment, by the exclusion or inclusion of cancer of the body (which has a later period of maximum incidence), and by the fact that amongst those deaths throughout the country certified as uterine cancer many must really be due to errors of diagnosis. There is another point worth noticing. In Leitch's statistics the largest number of cases were shown to occur before the onset of the menopause. By taking each year separately Mr. Dinnick finds that amongst the Cancer Hospital cases the largest number have occurred at 42.

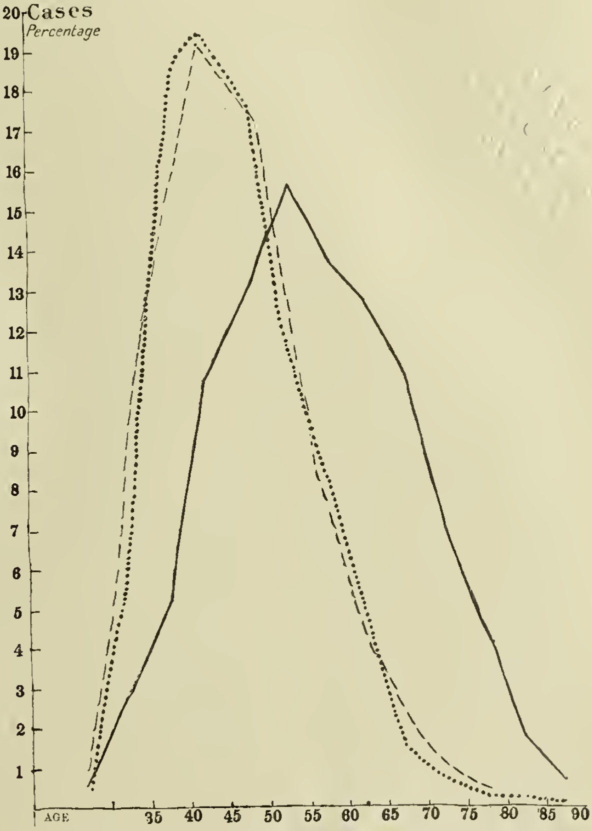

Chart to show the various percentages of cancer of the uterus occurring at the different quinquennial age periods. A, Black uninterrupted line constructed from the Registrar-General's returns for England and Wales, 1911. This gives the ages at death from cancer both of cervix and body. B, Dotted line constructed from Leitch's statistics on 1639 cases of cancer of the cervix calculated approximately to age at onset of the disease. C, Broken line constructed similarly from 760 Cancer Hospital cases collected by Mr. Dinnick.

FACTORS IN FREQUENCY OF UTERINE CANCER.

Thus, contrary to the usually accepted ideas, cancer of the uterus is more a pre-climacteric than a post-climacteric disease, and this point has an important practical application. It is essentially a disease of motherhood. The relative numbers of cases occurring in women who have borne children and in those who have not are far greater than the proportion of parous to nulliparous in the general population. Most of us, in a shadowy way perhaps, regard maternity as being a predisposing factor in the causation of disease. In the case of the tongue we know that cancer is practically invariably preceded by some fissure,

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ulcer, or other lesion. In the case of the uterus there is always the liability of cervical laceration or some other trouble associated with pregnancy that leaves behind a lesion in which cancer may start. On the other hand, uterine cancer is exceedingly rare among the lower animals which are certainly more prolific than mankind. The fact that in America it is rare amongst negroes in comparison with the white races is another point to consider before we jump to the conclusion that the accidents of parturition are prime factors in determining the frequency of uterine cancer.

It is evident from what we know of the biological distribution of malignant disease that various species of animals have each their besetting form of cancer. For example, in mice it is the milk glands that are most liable to be the seat of cancer, and in rats the connective tissues are chiefly affected. It may quite well be that comparable phenomena obtain amongst divisions of the species. Without the complication of any other factor we may have a preponderance of one cancer over another in different races, and heredity may accentuate this. Murray in his remarkable breeding experiments very markedly accentuated the incidence of cancer in the offspring of cancerous mice. Of course, in that case an artificial selection was made such as could not occur naturally among human beings, but still it is permissible for one to think that as amongst human racial subdivisions certain normal characteristics are accentuated and perpetuated, so also to a minor extent the besetting form of cancer of the race may be accounted for.

As far as we can go, then, in accounting for the prevalence of cancer of the uterus in this country we have three factors: first, it may be naturally the one to which this race is most prone; secondly, the characteristic may have been accentuated by heredity; and thirdly, the trauma of childbirth may have rendered the cervix more liable to neoplastic change. It is 20 times more frequent amongst the married than in the unmarried, and yet the normal proportion of married to unmarried is about 5 to 1. Its incidence is overwhelming among parous as compared to nulliparous women. This applies only to cancer of the cervix; in cancer of the body the disparity is negligible. Kelly says that he has come across only three cases of cancer of the cervix in nulliparæ, and in one of these dilatation had previously been carried out. At the present time I have under my care a case of cervical cancer in an unmarried woman who also had some gynæcological operation performed some years ago indicating a history of trauma.

With regard to cancer of the body it is still a common belief with many that it occurs most frequently in single women, but there are absolutely no grounds for such an idea; as a matter of fact, at least two out of every three cases occur in women who have borne children. The average age at which it occurs is considerably later than in the case of cancer of the cervix, and in comparison with the latter it is rare—probably not more than 5 per cent. of all cases. There is reason to believe that it is more frequent amongst the well-to-do than among the very poor.

THE COURSE OF THE DISEASE.

Cancer of the cervix uteri may commence in the vaginal portion or in the cervical canal; in the former the growth is an epithelioma, in the latter an adenocarcinoma. Sarcoma is very rare. The cancer breaks down early, giving rise to serous discharge. Bleeding may take place from the raw surface spontaneously or as the result of slight trauma. The disease does not long remain local, but tends to spread through the vaginal portion and downwards beneath the mucous membrane of the vagina, upwards into the cervical canal, and outwards into the loose cellular tissue of the parametrium and that lying beside the upper part of the vagina. Still extending outwards it spreads to the lymphatic glands on the wall of the pelvis, affecting the group of glands lying in the angle between the external and internal iliac arteries, and frequently the obturator gland near the obturator foramen. It may spread thence to the next group of glands lying externally to the common iliac artery and make its way to the lateral aortic glands above. It is the lymphatic spread that is the most important consideration from the surgical point of view.

The organs most commonly implicated with metastatic deposits are the liver and then the lungs, but as such a condition is comparatively rare and occurs only late in the disease one need not take it into consideration in discussing radical treatment. According to Paget, during the examination of 244 cases post mortem the liver was involved in 14·3 per cent. and in Leitch's 915 cases in 13·5 per cent. According to the latter, also, in more than half the number of all cases the disease never spreads beyond the brim of the pelvis. That, however, does not mean that such a large number are amenable to surgical treatment; far from it. There is the local spread so painfully manifest in late cases that would often be beyond all surgical measures.

The local conditions due to the growth are important. The growth itself in the disintegration and septic state may give rise to infection of the endometrium, producing pyometra, salpingitis, or salpingoövaritis, or, eating its way through the posterior fornix of the vagina, it may cause a localised peritonitis. In both cases there is an attempt, generally successful, to wall off this inflammatory focus, but the end result is that the pelvic structures become so extensively matted together and to the pelvic walls that separation, to say nothing of practical extirpation, is often out of the question. This is a late condition. We have to bear in mind, however, that in early stages of the disease an infective process may play a part, perhaps the sole part, in causing the fixation of the organ, and therefore cases must not be considered inoperable on the grounds of fixation alone.

The spread of malignant disease into the parametrium, the uterosacral ligaments, and the broad ligaments causes the serious fixation of the uterus, and when this happens it is a question for each to settle as to whether operation is likely to be effective or not. By the involvement of the parametrium the ureters at last become surrounded by growth, and by its contraction they are constricted, the ureters dilate, back pressure is exerted on the kidneys with consequent hydronephrosis, the excretory substance of the kidney is destroyed, and finally a painless death from a convulsionless uræmia results. The ureters are found involved in three-fourths of all post-mortem cases, and this is the common cause of death. Sometimes an ascending infection causes pyonephrosis, but this is relatively uncommon. Extensive involvement of the vagina is an almost invariable occurrence in the late stages, and by extension of the process into the bladder and into the rectum vesicovaginal and rectovaginal fistulæ may be produced.

Fortunately, the disease does not give rise to early infection of the glands, nor does it until the later stages cause the distressing local conditions just described, but tends to remain for some time a more or less localised disease, and thereby lies the hope of surgery; but if surgery is to be effective one must bear in mind in performing an operation the particular tissue zones that are liable to be involved.

THE IMPORTANCE OF EARLY DIAGNOSIS.

Only one case in ten that I come across is suitable for operative treatment; in the remaining 90 per cent. the disease has spread into and involved the surrounding parts, causing fixation of the uterus, and is too far advanced for any hope of cure by operation. Some surgeons meet with a higher percentage of operable cases, but nevertheless the fact remains that the large majority come to the surgeon too late for radical cure. It is a most depressing and appalling state of affairs, and we must inquire into the cause and make our best endeavour too combat it. In the majority of cases the patient is herself to blame in not seeking medical advice, but there are far too many others who, having sought advice, are treated for certain symptoms alone, and are allowed to drift on for an inexcusable length of time before any proper examination is made. The patient is apt to attach too much importance to the absence of pain, and many practitioners are inclined to look upon pain and cachexia as the signs to be waited for. From the surgeon's point of view both of these are worthless, save for the fact that they practically always indicate that the disease has been present for a very long time.

Cancer seldom causes pain until it has fairly well established itself. Even more so with cachexia, for it is not until the growth undergoes septic infection or disorganisation or seriously affects the function of some vital organ that cachexia and emaciation make their appearance. Pain and cachexia may be symptoms of cancer, but they are symptoms of advanced cancer and not of the disease in its early stages. In point of fact, some cases die without pain, cachexia, or emaciation ever having been present.

When the patient first notices anything amiss—it may be discharge or irregular hæmorrhage—it is rarely that she seeks immediate medical service. In the majority of cases her reticence is due to her modesty, and who can blame her for her ignorance of the serious import of such signs? Perhaps she consults some friend or "wise woman"; the opinion she generally gets is that it is "change of life," and she is comforted with the conclusion that it is something natural and to be expected, and that everything will come right of itself in the course of time. I wonder how many lives are sacrificed annually to this myth of the change of life?

It is difficult to know how to deal with the problem, as habit, tradition, and superstition are obstinate foes to tackle and exterminate. The proposal that we should endeavour to educate the public with regard to the early symptoms of the disease would be combated by many who hold strongly to the opinion that the necessary publicity would cause very grievous alarm. Personally I am in favour of spreading the light with regard to the symptoms of the disease. It is not a scare policy, and at any rate it is better to have a cautious fear of possibilities than a fatal, though complacent, ignorance. Here ignorance is not bliss. It is by education, and education alone, that patients can be induced to realise the possibility of the gravity of their ailment and the necessity of early treatment.

Someone has suggested that all women at the time of the menopause ought to be carefully examined for uterine cancer. Such a prospecting for cancer is of course quite impracticable and would probably be useless if it were not; one can only wait for the occurrence of some sign or symptom suspicious of its presence. See what Wynter was able to accomplish in Prussia. Disheartened by the small percentage of cases seeking early treatment, he some years ago started a campaign of enlightenment. With the help of the medical profession and the lay press, and by the distribution of pamphlets to nurses and midwives, his campaign of education was carried out with most satisfactory results, and the number of patients seeking treatment before the disease was too far advanced was very considerably increased. Here in our country sporadic attempts in the same direction have been made from time to time. We lack the disciplined opportunities of Germany, but even if there were a concerted action all over the country, as I should wish to see, it must be continual and systematic, for even the words of a philosopher or a prophet, listened to to-day, are forgotten to-morrow.

EARLY SIGNS.

Early diagnosis is of vital importance to the success of radical treatment and possible cure. The symptoms or signs to which I attach most importance in the early stages of the disease are: (*a*) bleeding, (*b*) discharge, and (*c*) bleeding on examination. The bleeding may take the form of increased flow at the menstrual periods. More usually it is of a more pronounced character, taking place irregularly and at fitful intervals between the periods. In quantity it may vary from a mere spotting to a more profuse flow. It may occur without any very definite cause, perhaps being associated with the straining of micturition or defæcation, or coming on after any slight trauma. A slight hæmorrhage after coitus is a very common and very suspicious symptom. Irregular shows occurring after the menopause ought to be regarded as grave warnings. Any unusual hæmorrhage, no matter how slight, occurring between the periods or after the menopause is a symptom that demands immediate investigation. It should never be temporised with. The cause should be put beyond all doubt at once. The discharge may be leucorrhœal in character at first, but it invariably assumes the serous or watery type, being the exudations from the ulcerated surface. It may be comparatively clear or stained with blood, and equally with the bleeding just described it is a symptom of great importance, the investigation of which must never be deferred.

The normal cervix will stand a good deal of trauma and does not bleed on digital examination, but in cases of malignant disease of the cervix or the lower part of the endocervix, even very little pressure of the finger or finger-nail will cause hæmorrhage. Such bleeding occurring on examination should always be regarded as definite indication of malignant disease unless the microscope gives another reading of the lesion. Tuberculous ulceration of the cervix is very rare indeed. The common "cervical erosion" is usually quite different to the touch, and this is the chief lesion with which cancer may be confounded. Should digital examination fail to discover a polypus, a pathological condition which may produce the symptoms and signs already mentioned, or fail to reveal any definite growth, then an examination must be carried out under an anæsthetic, when a breaking down or suspicious focus may be detected in the canal or suspicious material may be removed from the cavity. In any case a piece should be removed for microscopic examination, and in respect to the curettings the whole, and not a single fragment, should be preserved.

OPERATIVE TREATMENT.

Having determined the diagnosis of malignant disease, we shall have to decide as to whether the case is suitable or unsuitable for operation. Generally speaking, these cases are unfit for operation where there is marked invasion of the broad ligaments or of the utero-sacral ligaments or fixation of the uterus. I lay stress on the fixation of the cervix apart from fixation of the body, as very often where the former is free and the latter is fixed the fixation may be entirely due to inflammatory causes. It is worse than useless to endeavour to do hysterectomy with the knife if one has to cut through malignant tissue, as such operative interference may serve only to stimulate the progress of the disease. It is not a case of making the disease more virulent, but of enlarging the growing surface of the cancer.

I do not intend to enter fully into the details of operative treatment, but will content myself with saying that all the procedures must take into account the directions in which the disease tends to spread, and we must remove not only the definitely suspicious tissues, but a fair margin beyond. Thus, it is absolutely essential to allow a wide margin of removal of the vaginal wall, to take away as much as possible of the parametrium, and along with the latter the lymphatic-bearing tissues and lymph glands of the pelvic wall. When the abdomen is opened the extent of the disease is examined for, we determine the possibility or otherwise of freeing the uterus from the bladder, and we assure ourselves as to the absence of infiltration of the ureters where they enter the bladder. I do not think it is possible to carry out a routine operation in all cases. The extent of the operation depends greatly on the patient's condition, and some, owing to feeble health, are unable to stand prolonged operation. In such cases one may be forced to remove the uterus and its surroundings only, and to risk leaving the pelvic glands.

One thing that must be rigorously guarded against in operation is the risk of cancer infection, and by that I mean the implantation of cancer cells on a fresh surface, or the production of a wider surface of growth in any mass of such cells. I have no doubt that in many cases of local recurrence in the field of operation after vaginal hysterectomy such recurrence was due to laceration of the active growth with vulsella forceps. The pelvic cellular tissue is very vulnerable to such cancer infection, and I have seen an enormous cancerous mass arising out of the pelvis while the patient was convalescing in hospital after an imperfect hysterectomy, and I am inclined to believe that swabbing of the pelvic wound with hot water lessens the risk of such infection.

THE TREATMENT OF INOPERABLE CASES.

Now with regard to the inoperable cases, have we no means at our disposal for minimising their distressing condition? Recently there has been an extensive use of radium in the treatment of inoperable cancer. All over the world it is being used, and many eagerly rush into print with the reports of cases apparently cured. Like many surgeons, I have seen some startling results, at least on the primary lesion, just as I have seen some more or less disastrous failures, but I feel that there would be no great loss to radium-therapy if we all kept silent about it for two or three years. Personally I should advise a patient in such a condition to try radium. It may or may not have a beneficial action on the cervical cancer, but I do not think that anyone will claim that it could influence the deposits in the lymphatic glands on the pelvic wall, and under these circumstances it is worth while considering the operative removal of affected glands.

Some older-fashioned methods of treatment in inoperable cancers are not to be despised. The caustic and the cautery have still their uses in limiting the hæmorrhage, pain, and foul discharge. But of all the modes of treatment of inoperable cancer of the uterus the one I have found most useful consists in cutting off the blood-supply of the part. In the first case on which I resolved to attempt this, in 1905, I ligatured both internal iliac arteries, but ever since then I have ligatured both ovarian arteries as well. There are no untoward after-effects. As a modification of this operation I now advocate removal of infected glands where possible and where they are limited to the pelvis, so that in those cases suitable for radium treatment the primary growth in the uterus alone remains to be dealt with. The operation is comparatively free from risk, and combined with subsequent cauterisation of the growth constitutes the most efficient treatment we have at our disposal for cases of advanced cancer of the uterus. Great relief is obtained in practically every case, the hæmorrhage is checked, the pain is diminished, and the discharge is reduced to an insignificant quantity. Marked prolongation of life does not follow upon the operation, but certainly it allows patients to live in comparative comfort, and it alleviates the distress of their last days.

THE NATURE OF PERITONEAL ADHESIONS.[1]

BY ARTHUR KEITH, M.D. ABERD., F.R.S.,
CONSERVATOR OF MUSEUM AND HUNTERIAN PROFESSOR, ROYAL COLLEGE OF SURGEONS OF ENGLAND.

MEDICAL men are accustomed to regard the process which underlies the healing of wounds as one evolved for the special needs of the individual after birth. Inquiry will show, however, that a process which is similar to that underlying the healing of wounds takes place during the normal development of the embryo. The best example to prove the truth of this statement is seen in the formation of the upper lip. Its two embryological clefts are lined at first by stratified epithelium. The first step in healing is the gradual apposition and adhesion of the epithelial surfaces. The epithelial bridge thus formed across the cleft is invaded by the adjoining mesoblastic tissue, the temporaay epiblastic bridge being thus replaced by a permanent mesoblastic union. The process is not unlike that seen in wounds healed by first intention. In wounds the inflammatory exudate serves as the "healing bridge"; in developmental union this "bridge" is formed by the fused epithelial surfaces.

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[1] Demonstration at the Royal College of Surgeons of England on the occasion of the visit of the Association of Clinical Surgeons of North America, July 27th, 1914.

Failure of the developmental process of healing results in harelip. Cleft palate and hypospadias also represent unhealed evolutionary wounds. In such cases the surgeon has to step in and mend an open developmental wound. We see then that in her normal evolutionary processes Nature does use that primary property of living tissue—the power to heal.

In the same way we are apt to regard peritoneal and pleuritic adhesions as the result of pathological processes. We shall see that such adhesions are formed during normal development, and that Nature has used the processes which underlie their formation as a means for securing her evolutionary ends, particularly in the case of the human body. I bring before you, to illustrate my statement, preparations made from a young elephant to show the developmental formation of pleuritic adhesions. Everywhere the surface of the elephant's lung is bound to the chest wall by a loose meshwork of connective tissue formed from the pleura.

Although anatomists have known for some years that such adhesions are formed during the normal development of the elephant—they were described by Professor William Wright in lectures at this College some years ago—they have not discovered their functional significance. Possibly an investigation of the peculiar respiratory mechanism of the elephant would supply an explanation. At the present moment I merely wish you to note that Nature has employed in this instance an apparently pathological process to accomplish a physiological end.

I now pass to the main subject of my demonstration—the formation of peritoneal adhesions—particularly during the normal development of the human fœtus. I show you, in the first place, a dissection of a full-time child which was born with the intestines lying within a large sac formed by the coverings of the umbilical cord. The mesentery attaching the intestinal tract to the posterior wall of the abdomen is long and shaped liked a fan—as in an early stage of development of the human fœtus. As in the young fœtus, the mesenteric attachment is confined to the middle dorsal line. The process which leads to the adhesion of the duodenum, of the ascending and descending colon, and of the root of the mesentery to the posterior wall of the abdomen, has failed to take place; all of those parts have remained free, as in lower mammals and as in the early human embryo. Surgeons are well aware that children are occasionally born apparently normal in all respects, save that the intestinal tract is attached as in the specimen just described—children in which the normal process of mesenteric adhesion has failed to take place. We require a name to designate the failure in the process of intestinal fixation—an "azygosis" of the mesentery. Whether or not you agree to the name which my colleague Professor Shattock has coined to designate the developmental union of serous surfaces, you must admit, I think, that the process by which the fixation of the human intestine is brought about is very similar to the adhesion which occurs when opposed peritoneal surfaces become inflamed. In fashioning the upper lip and in securing a proper fixation of the abdominal viscera Nature calls to her aid processes which are usually regarded as pathological.

Before comparing the peritoneal adhesions, which are formed in the fœtus during the normal course of development, with the adhesions which result from inflammatory processes after birth, it will be convenient to inquire into the functional significance of intestinal fixation. In the lower primates, taking any species of lemur as a type,[2] the mesentery retains its primitive fixation along the middle line; the condition in the lemur may be described as one of total azygosis. In a higher group of primates, that represented by the ordinary dog-like monkeys of the Old and New Worlds, the process of adhesion or "zygosis" of the mesenteries is already established in two areas: (1) behind the stomach—a "post-gastric area"; and (2) at the root of the mesocolon—a "mesocolic area." A condition of partial mesenteric zygosis is present in ordinary monkeys. In the post-gastric area the head and body of the pancreas and the mesenteric fold in which these parts lie become adherent to the posterior abdominal wall. In the mesocolic area the root of that part of the mesocolon to which the transverse colon and splenic flexure are attached becomes bound to the posterior wall by a process of peritoneal adhesion. The final stage—complete zygosis of the mesenteries—is seen in man and the great anthropoids—the gorilla, chimpanzee, and orang. With each stage in the evolution of mesenteric zygosis we find a collateral change in the animal's posture of body. The great anthropoids are as completely adapted for an orthograde attitude in the trees as man is for the same posture on land. We must regard the condition of mesenteric zygosis as dependent on posture. Yet we should err if we concluded that the abdominal viscera were suspended from the areas of adhesion. It is only when the support of the musculature of the abdominal walls is withdrawn, as in enteroptosis, that the mesenteries become supporting structures. We know that in cases of congenital azygosis in man a volvulus of the whole intestinal tract may occur. We presume, therefore, that zygosis of the mesenteries is designed, not for the suspension of the abdominal contents, but to regulate and restrain their movements within certain limits.

I now proceed to compare the peritoneal adhesions formed in the course of normal development with those which result from inflammatory conditions. One of the specimens already mentioned—the child in which the intestines lay within a congenital umbilical hernia—affords the first point of evidence. Evidently the serous coat of the intestines had been exposed to some form of irritation, for the coils were matted together. The serous coat of the bowel instead of having a thickness of 0·03 mm. measures 0·3 mm., ten times the normal amount. One observes that the surface of this thickened serous coat has the smooth appearance of normal peritoneum to the naked eye; under the microscope the surface is seen to be covered by tessellated endothelium. The increase in thickness appears to be due, not to a proliferation of the surface layer of cells, but of those embedded in the subserous tissue. The cells which show signs of most active division lie beneath the surface stratum.

The second specimen I show is the microscopic section of a peritoneal adhesion which Mr. Joseph E. Adams[3] brought about experimentally by the application of a sterile swab of cotton-wool to the surface of the liver of a rabbit. The swab is enclosed by organised tissue and is adherent to the liver. A section across the swab and an adjacent part of the liver shows that the visceral peritoneum of the liver, less than a centimetre distant from the swab, is covered by the usual layer of tessellated endothelium, but the subserous tissue is cellular and greatly increased in thickness. When the peritoneum is followed from the surface of the liver towards the swab, it is seen gradually to increase in thickness. The increase is due to a proliferation of the elements in the subserous stratum—at least, so I conclude from the fact that the covering endothelium forms an unbroken line which can be traced from the normal area of the liver to the surface of the organised tissue surrounding the swab. The process of adhesion is apparently brought about by a reaction and proliferation on the part of the subserous elements at the site of application of the swab. The inflammatory exudate between the liver and swab forms the bridge into which the cells of the subserous layer proliferate.

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[2] Eleven years ago I published diagrams showing various stages in the evolution of mesenteric adhesion or zygosis (see THE LANCET, March 14th, 1903, p. 712).

[3] See Mr. J. E. Adams's Hunterian Lecture on Peritoneal Adhesions, THE LANCET, March 8th, 1913, p. 663.

The two instances just cited illustrate the formation of inflammatory adhesions. My next preparation is a section across a developmental adhesion—that which normally forms between the ascending colon and the inner wall of the right loin. The section shows that the peritoneum on the anterior or ventral aspect of the colon is normal in thickness and structure. As we trace it outwards on the lateral aspect of the colon the subserous tissue gradually increases in amount, until the tessellated covering layer is separated widely from the surface of the colon and ultimately joins the parietal peritoneum of the loin, in exactly the same way as we saw the visceral coat of the liver pass into the organised covering of the swab. The active elements in bringing about the adhesion lie in the subserous stratum.

The process of zygosis of the peritoneum can be best studied in the mesentery of the descending colon. A section across a human embryo towards the end of the third month of development shows the descending colon in the left loin and its mesentery applied to the posterior wall of the abdomen, but as yet non-adherent. The various steps in the process of adhesion may be studied. If that process were strictly similar to an inflammatory adhesion we should expect an exudate to be thrown out between the mesentery of the colon and the opposed area of parietal peritoneum. No exudate is thrown out. The process of adhesion commences near the mid-dorsal line, in the angle or recess between the mesentery and peritoneal lining of the left loin. At the point of peritoneal reflection there is a formation of subserous tissue, so that the point of reflection is gradually carried outwards until the colon itself is reached and bound directly to the abdominal wall. In this way the mesentery of the descending colon becomes incorporated in the parietal peritoneum on the dorsal wall of the abdomen.

Direct adhesions may also be formed. For instance, the free margins of the great omentum may contract adhesions to the parietal peritoneum in the right or left loins. The gall-bladder may become united to the transverse colon or omentum—the original point of contact being subsequently drawn out into a band. In the case of the mesentery of the descending colon, or of the small intestine, the process of zygosis may not proceed regularly from the base of the mesentery; it may occur at independent points and spread from these until the various islands of contact meet and complete fusion is produced.

As already said, there is no exudate thrown out in the process of developmental zygosis—at least, I have not been able to detect an exudate between serous surfaces on the point of forming an organised adhesion. As in harelip, the surface coverings adhere; the first uniting bridge is epithelial in the case of harelip, endothelial in the case of peritoneal surfaces. The temporary bridge is invaded and replaced by adjacent mesoblastic elements—exactly as in the healing of wounds.

I know of no process in the normal development of the human body which is so irregular in the date of its appearance and so unequal in the extent of its occurrence as this of peritoneal zygosis. There are specimens on the table which show the right colon fixed by peritoneal adhesions to the right loin in the fourth month of development; there are others which show it free as late as the eighth month. In at least two areas the process proceeds after birth—namely, in the attachment of the mesentery of the lower or iliac part of the small bowel to the posterior abdominal wall above the right iliac fossa and in the attachment of the iliac colon to the parietal peritoneum of the left iliac fossa. In the latter area adhesion proceeds in even adult individuals independently of any inflammatory process. The irregularity in the extent of mesenteric zygosis has often been noted. The process may fail completely, giving the condition which may be described as total azygosis. In 1905 Mr. Howard Kelly and Mr. E. Hurdon[4] gave a statistical account of the extent of the adhesion of the mesentery of the ileo-colic part of the intestinal tract in an extensive series of cases. In more than half they found that the process of mesenteric adhesion proceeded so far that the ileo-colic junction was bound directly to the posterior wall in the right iliac region. I agree with Dr. Douglas J. Reid[5] that in nearly 50 per cent. of newly born children the process of mesenteric adhesion reaches so far towards the right iliac fossa that the terminal part of the ileum is directly bound down to the parietal peritoneum, forming the anatomical basis of Lane's band.

I differ from Dr. Reid as regards the origin and nature of the process to which I propose to apply the name of peritoneal zygosis. He is of opinion that pressure alone will bring about the adhesions, that the distended iliac colon of the infant—to take one instance—may cause the adhesion of the parts on which it presses. It may be taken as an axiom that all the contents of the abdomen of the fœtus are subjected to a common pressure—the intra-abdominal pressure. The process of adhesion proceeds from definite points and accomplishes a definite object. No mere mechanical explanation can prove satisfactory. We are dealing with a biological manifestation of not local but of widespread occurrence, one which is dominated by an inherent property of the living cells of the subperitoneal tissue. Zygosis of the peritoneum or of the mesenteries may be regarded as merely a manifestation of growth, but if we so regard it, then we must look on the healing of a wound and the formation of peritoneal or pleural adhesions as also manifestations of growth.

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[4] The Vermiform Appendix and its Diseases, 1905.

[5] For Dr. Reid's latest paper and references to former investigations, see Journal of Anatomy and Physiology, 1914, vol. xlviii., p. 432.

In the healing of a wound or in the formation of peritoneal adhesion the stimulus that calls the process of growth into action is bacterial or mechanical in nature, but there are clearly stimuli of another nature. Everyone who has studied the peculiar growth changes of acromegaly, or those which depend on the presence of the testicles, must admit that localised growth or development may be awakened and regulated by stimuli of the nature of hormones. It is in a cause of that kind I would search for the immediate factors regulating the process of peritoneal zygosis.

There is, lastly, the question of the relationship of such adhesions or bands to the condition described as intestinal stasis. If the muscular coats of the intestine are acting normally I cannot conceive that any developmental band I have yet seen could bring about the condition of stasis. They could only cause obstruction when the action of the intestinal musculature is defective. We are conducting in the laboratories of this College now a systematic investigation of the musculature and of the intestinal nerve ganglia, and although our researches have not yet reached that point which justifies dogmatic conclusions, they have proceeded far enough to show that in the majority of the specimens excised on account of stasis the muscular coats and nerve ganglia are not normal in structure.

The main object of my demonstration is to place the subject of peritoneal adhesions—the process of peritoneal zygosis—in its proper perspective. It is not an isolated phenomenon but a widespread biological process, affecting particularly the development of the human peritoneal cavity and that of animals nearly allied to man. A study of fœtal peritoneal adhesions shows us that developmental processes are very closely allied to healing processes. Whatever part these adhesions may take in producing conditions of intestinal obstruction, there cannot be two opinions as to the extent of their occurrence and of their importance from a biologist's point of view.

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OSTEO-ARTHRITIS OF THE HIP:

DIAGNOSIS IN ITS EARLY OR PRE-OSTEOPHYTIC STAGES.

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THE immutable character of the changes that ultimately ensue in bone and cartilage in this affection assuredly indicates the desirability of our arriving at a true diagnosis at the earliest period possible. Yet a mere glance at the clinical course of the disorder, as drawn by older and, for that matter, even current writers, reveals a striking disregard on their part of its early or incipient symptoms. Contenting themselves for the most part with a brief allusion to the initial pain and stiffness, they pass without further ado to a delineation of its terminal features as if, forsooth, the morbid process, like Jonah's gourd, had sprung to maturity in a night. An erroneous impression has thus been conveyed and the salient characteristic of the life-history of the disease thereby obscured—viz., its extraordinary slowness of evolution, one measured not so much by years as by decades. Moreover, as the logical outcome of this conception, the early symptoms or phases of the malady have either been overlooked or erroneously attributed to some alien disorder—sciatica, rheumatism, and so forth.

Albeit, clinical observation clearly proves that the state of profound articular disorganisation typical of the affection is only very slowly arrived at, and must inevitably have been preceded by a prolonged period, during which symptoms indicative of the articular site of the disease were slowly unfolding themselves. Indeed, our own experience has convinced us that careful physical examination supplemented by a discriminating analysis of the subjective symptoms will enable us to diagnose the oncoming of an osteo-arthritis even prior to the formation of bony outgrowths.

Early symptoms.—The manifestations are both subjective and objective, but for their detection the same meticulous care must be exercised by us as when searching for the early symptoms and signs of tuberculous hip disease. Collectively they consist of pain (local and referred), tenderness of hip, alterations in attitude and gait, with limitation of mobility.

Subjective phenomena.—Pain being the most prominent we must for its accurate interpretation be thoroughly conversant with the nerve supply of this great articulation. Thus, from the anterior crural a branch runs to the anterior portion of the capsular ligament, the posterior part of this structure being innervated by the sacral plexus and sciatic trunk. The lower and inner part of the capsule is dependent for its supply on the obturator nerve, which also sends a twig to the ligamentum teres.

Site of pain.—Like tuberculous coxitis the pains of osteo-arthritis in this joint may either be localised to the hip region or referred along one or all of the nerve trunks from which the articulation derives branches.

Articular pain.—Quite in the initial stages a feeling of pain, or rather of painful stiffness, is felt in the joint itself. Most often it is experienced deep in the groin when it is presumably located in the anterior part of the capsule. In other instances it is referred to the posterior aspect of the joint near the small trochanter, but more commonly is localised to the region of the great trochanter. At the last-named site the pain is often deep-seated, and is apparently located in the external rotator muscles, which, through the forced eversion that ensues so early in the disease, are probably overstrained. These articular pains, at any rate in the early stages, are not constant. They come and go in erratic fashion, and are accompanied by a sensation of something having intruded between the articular surfaces and so preventing the easy working of the joints. The sudden hitch thus produced gives rise to a stab of pain, and the subject is brought up sharp and walks lame maybe for some hours, but more commonly such attacks are of fleeting duration. These periodic bouts of pain with lameness are very typical of so-called osteo-arthritis, and are, we believe, attributable to incarceration of enlarged villi between the joint surfaces. They occur most often during walking or after a change of position, such as turning in bed; and with the growth and numerical increase of the villi more frequently, and *pari passu* the stiffness and disability become more troublesome.

Local tenderness.—Sensitiveness to palpation of the capsule of the hip is a very common sign, but needs careful examination for its detection. In some it is more easily elicited anteriorly when the finger is pressed deeply into the groin, but in others this feeling of tenderness with increased density and resistance is more readily evoked posteriorly behind the great trochanter. The existence of joint pain and tenderness in this disorder is but too often overlooked; nevertheless, it constitutes strong presumptive evidence of the articular site of the disease, and its localising value far exceeds that attachable to the *referred* pains which may be, and often are, attributable to other and extra-articular causes.

Referred pains.—These at their onset are more often than not dismissed as examples of pure sciatic or crural neuralgia, and passing as being of gouty and rheumatic nature the unhappy victim for years, or even decades, roams from spa to spa in search of relief. That for the time being their pains either spontaneously or under the influence of hydrotherapy and so forth do undergo remission but fosters the belief in their idiopathic neuralgic nature. But carefully analysed it soon transpires that the relief obtained was but short-lived and that their pain and disability swiftly and invariably recurred. The consequences of such belated recognition are but too often irremediable, and we would therefore draw attention to some of the pitfalls which frequently occur in this connexion.

Firstly, we would protest against the unjustifiable assumption that they are invariably projected along the sciatic nerve; some, for example, contrast the pains in osteo-arthritis and tuberculous coxitis in that the pain in the former often runs down the back of the thigh instead of down the front as it does in the latter. Bruce in his recent work on sciatica goes even further, maintaining that most, if not all, cases of sciatica are really examples of osteo-arthritis, claiming, indeed, that the two conditions are one and the same disease masquerading under different names.

Now, while not gainsaying the frequency of sciatic pain in osteo-arthritis of the hip, we would demur strongly against the assumption that it is in any way diagnostic of this affection for the cogent reason that the pains are with equal frequency referred along the anterior crural and obturator trunks. Very commonly, for example, the pain begins at the small trochanter and shoots down the obturator nerve along the inside and front of the thigh to a point at or near the knee. Indeed, in some instances osteo-arthritis of the hip may, like tuberculous coxitis, manifest itself solely by pain referred to the knee. At other times it is more deep-seated, darting through the gluteal muscles and those along the front of the thigh innervated by the anterior crural. Often too, as is so frequently emphasised, it is transmitted along the sciatic down the back of the thigh or may be referred to the peroneal region or through the posterior tibial to the back and inside of the heel. Lastly, it sometimes passes down along the external cutaneous to the skin on the outer side of the thigh constituting the variety known as meralgia paræsthetica. A history of such recurring attacks of sciatic or crural neuralgia extending maybe over years suggests strongly that it is not primary or idiopathic but secondary to hip disorder.

Apart from mere pain various paræsthesiæ, tingling, numbness, and formication are often experienced along these several paths of distribution. Now as regards the diagnostic import of these various pains it cannot, in our opinion, be claimed that any one of them more than the sciatic can be regarded as pathognomonic of osteo-arthritis of the hip. But while no diagnostic significance attaches to pain passing down one or other of these various trunks, we would emphasise this fact that in our experience *simultaneous pain along the anterior crural or obturator as well as along the sciatic nerve* is very distinctive of this disorder. In other words, not pain along the front or back of thigh, but pain along both back and front is, we think, more typical of this affection.

While on this question of referred pains in osteo-arthritis, we would lay stress on their chief peculiarity, which to our mind is not so much their intensity as the extraordinary length of the period they endure. Thus patients with well-marked malum coxæ always assert that they have not only for years but for two or even three decades suffered with their pains. When, therefore, we find middle-aged men so constantly referring their onset right back to early manhood, we may well question the applicability to this disorder of the term malum coxæ senilis. Moreover, and this is even less generally recognised—viz., that despite their long duration and association with unequivocal signs of articular disease, yet skiagraphy, as we have ascertained by routine examination of such cases, frequently shows an absence of bony outgrowths.

Again, it is often stated that the pains of osteo-arthritis, like those of rheumatism or fibrositis, are subject to nocturnal exacerbations and are influenced by weather changes. This is, we believe, inaccurate, as once the subject is comfortably settled in bed he is free of suffering until he consciously or unwittingly changes his position. This is, at any rate, true of the earlier stages, but of course when definite malposition has arisen it is so much the more difficult for the subject to attain a posture free from pain. The dependence of the pain on mechanical or static causes is, we think, clearly shown by the fact that when ankylosis by osteophytic outgrowths has resulted the pains diminish or even disappear wholly. Also in regard of climatic variations most osteo-arthritics, if carefully questioned, seem unable to establish any constant relationship between these and the incidence or intensification of their pains.

In conclusion, the characteristics we would lay stress on are: (1) the greater localising value of articular as opposed to referred pain in osteo-arthritis; (2) the diagnostic significance attaching to referred pains experienced simultaneously along the anterior crural as well as the sciatic nerve trunk; (3) the prolonged duration and existence of local and referred pains often prior to the formation of osteophytes; and (4) the direct dependence of pain on movement or strain and their independence of weather changes.

Associated lumbar pains. — Almost invariably these subjects suffer at the same time with pain in the loins, which of course enhances their liability to confusion with sciatica—a condition so commonly associated with lumbago. But the lumbar pains met with in this hip disorder are easily differentiated from those accompanying ordinary sciatica. Those of the former are insidious and gradual in onset, subacute in degree, and arise secondarily to the hip mischief. In other words, they are purely static in orgin — a consequence of erroneous deflection of body weight—for there is commonly present a state of lordosis with transverse rotation forward of the pelvis, and so in this way additional strain upon the sacro-iliac ligaments. In the latter the lumbar pain or lumbago is abrupt in onset, very acute in degree, precedes or is primary to the sciatica, and is due to an inflammatory process in the fibrous tissues of the lumbar muscles which eventually extends to the sheath of the sciatic trunk.

Alterations in gait and attitude.—In the initial stage no change can be detected save in the temporary limping that follows the occasional incarceration of the enlarged synovial villi. But with their growth and the advancing involvement of the membrane the intra-articular irritation produced gives rise to spasm of the related muscle, and this to malposition through slight flexion of the hip-joint. On inspection, therefore, it will be noted that the patient stands on the sound foot; the other is usually a little advanced, and he tends to rest upon the ball rather than upon the heel. At the same time, in order to save the affected joint, the knee on the same side is slightly bent, while the foot and even the whole limb are held in a position of external rotation.

Limitation of mobility.—Relative fixity of the joint is, of course, the sign of chief diagnostic importance, and even in the very earliest stages there is present some limitation in the arc of motion in the hip. It is present long before osteophytes can be detected by skiagraphy. The restriction of mobility is presumably due to reflex irritation of the muscles controlling the joint, which are maintained in a state of more or less spasm, the degree of which is proportional to the activity of the intra-articular disease. To elicit its presence the patient should be undressed and lie, not on a soft bed, but on a table or hard couch. It must then be noted whether he can recline flat on his back with the ham of the affected limb closely applied to the underlying surface, and this without any arching of the lumbar spine. Far more often than is generally realised will these cases—so often mistaken for sciatica or rheumatism—be found presenting a well-marked lordotic curve, while the knee of the affected side is at the same time more or less raised from the table.

The presence of this *flexion contracture* is of prime value as an indication of the articular site of the affection, but there are always present also further restrictions of movement. Maximal extension and flexion, especially the former, are usually difficult or often impossible of accomplishment, while the range of inward rotation and abduction is appreciably diminished. Sometimes the hip in addition to being slightly flexed and externally rotated is a little abducted, and in this event to allow of the subject moving about the flexion and abduction must be compensated for. This is attained by drawing up the sound side of the pelvis and depressing the opposite, and through this tilting he brings the femur inwards to the middle line, while simultaneously the lumbar column is curved with its convexity pointing towards the diseased side.

The foregoing constitute the initial symptoms of osteo-arthritis of the hip, and the point we would lay stress on is this—that despite the presence of such unequivocal symptoms and signs of articular hip disorder yet skiagraphy often reveals no structural alteration in bone or cartilage. Early diagnosis is so essential that we would summarise the symptoms and signs we regard as diagnostic:—

1. *Deep-seated articular pain*, at first of abrupt incidence and disappearance, and later more constant and accompanied by capsular tenderness.
2. *Referred pains*, which likewise are subject to remissions and exacerbations, and which more commonly are felt not only along the sciatic but simultaneously along the obturator and crural trunks.
3. *Fixity of joint* as shown by slight hip flexion with lordosis.
4. Limitation of extension, flexion, inward rotation, and abduction.
5. Eversion of foot and leg.

Conclusions.—In our opening remarks we commented on the extreme slowness with which the condition of osteo-arthritis of the hip is established and we would here emphasise the extreme length of time that may elapse before bony outgrowths can be detected. From our consideration, therefore, of the clinical features supplemented by the results of skiagraphy we are led to postulate two stages in the life history of osteo-arthritis.

1. A *primary* or *pre-osteophytic* phase, often of prolonged duration, whose clinical characteristics are those of villous hypertrophy.
2. A *secondary* or *terminal* stage in which bony and cartilaginous outgrowths make their appearance.

Our presumption as to the villous nature of the disorder is based on the occurrence of attacks of pain with pseudo-locking sensations which come and go in the same erratic fashion that we are familiar with in the case of the knee. In addition, too, we have in some instances accessory evidence in the shape of villous overgrowths in the knees, which, of course, in this articulation are more easy of detection by palpation. In support, too, of our contention we would remark that if in so-called osteo-arthritis of the knees skiagraphy be resorted to after routine fashion the same absence of bony outgrowths will be ascertained with striking frequency save in the more advanced cases. We are led, therefore, to the conclusion that this condition of osteo-arthritis, whether of the hip or knee, is invariably preceded by a long period during which the only local signs and symptoms clinically appreciable are those of villous hypertrophy. In other words, the villous overgrowths being more obtrusive mask as it were the early beginnings of fibrillation in the diseased cartilage.

Diagnosis of osteo-arthritis of the hip in its terminal stages presents no difficulty, but unfortunately at this period in its life history treatment is of little avail. We would therefore urge that in all cases of so-called sciatica investigation of the movements of the hip should invariably be undertaken, for during the early or pre-osteophytic phases of the disease there is good reason to believe that the march of the morbid process may be arrested if care be taken to remove any sources of strain upon the affected articulation. In this connexion we would only indicate the importance of a reduction of body weight if obese, as undue corpulence is undoubtedly an aggravating factor. Coincidently any static deformity in the lower limb, whether in the direction of flat-foot or possibly inequality in length of the extremities, either congenital or acquired—viz., shortening from malunited fracture—should as far as possible be corrected so as to diminish any mechanical strain. For the diseased joint itself, when painful or irritable, absolute or relative fixation by some form of ensheathing apparatus is indicated pending the decline of acute symptoms. It should be discarded only during the night and reapplied in the morning after massage, passive movements, and hyperæmia or hydrotherapy, with or without thermal douches or hot-air applications, have been practised.

THE AFTER-CARE OF THE CONSUMPTIVE.[1]

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IN the memorandum on after-care issued by the National Association for the Prevention of Consumption and Other Forms of Tuberculosis it is stated that the object of after-care is twofold: (1) to prevent relapse; and (2) to combat the fear of infection felt by employers and fellow workmen. To these may well be added, I think, two more reasons: (1) to look after the home and the family both while the bread-winner is away at the sanatorium and after he returns; and (2) to prevent the development of the loafer.

The first three of the above reasons, though of real importance, are self-evident and need not detain us, but on the last one—the development of the loafer—I may say a few words. In early sanatorium days this danger was very real. The patient had nothing whatever to do and no occupation except the aimless walk, for work had not yet been introduced as part of the treatment, and first the wish to work and then the power to do it were lost, and the patient as often as not left the sanatorium a confirmed loafer. This is now altered and, in the better sanatoriums at all events, the spirit of work is in the air, and men go there with a hope and an intention of leaving it fit and able to become wage-earners again. But the introduction of the National Insurance Act has increased the percentage of unsuitable cases sent to the sanatorium—i.e., has increased the number of patients who will be returned home unable to work—and the more these are increased the greater is the opening for the loafer—i.e., for the man who might work if compelled to, but who finds it more convenient to remain among the unemployable. Malingering is always difficult to meet, but much more so when there is a substratum of debility and ill-health. The members of an after-care committee should always bear this danger in mind, and by keeping up the patient's health and anticipating his difficulties with his employers and helping him to meet them, prevent him from brooding over his own misfortunes and from finding in them an obstacle to his success in life, and thus by holding out the hand of friendship help him to meet the hardship of his disease. So much for the objects of after-care. Now let us consider what is the best organisation of after-care in any neighbourhood.

Following the recommendations of the Local Government Board and the advice of the Advisory Committee given in their Interim Report, there will be in a little time in each county and borough county area a tuberculosis dispensary and a chief tuberculosis officer, and around these should be grouped all the antituberculosis efforts in the district. Here it is that the After-Care Committee should have its home, and it should include representatives of all the agencies, voluntary and official, that do such work.

Each district varies in its possibilities and conditions, and this will necessitate variation in the constitution and arrangement of the After-Care Committee. A purely country district like Somerset must be worked differently from a town district like Leeds, and large towns like Manchester and Liverpool have different requirements from country towns like Cambridge and Huntingdon. Again, a great deal depends on whether there is already in existence a powerful and active branch of a voluntary aid society like the Charity Organisation Society, or whether it is left to the medical officer of health, or the tuberculosis officer to work out the details of a scheme *de novo* and without much outside help.

On two other points I may lay stress. The first is the desirability of linking up the voluntary agencies with the official. After-care work on a voluntary basis is often found better (1) because it is more enthusiastic and more elastic than purely official after-care work; (2) because under a voluntary régime it is easier to deal with a case individually and on its own merits and to exclude all red tape; and (3) because voluntary agencies often have funds at their disposal, whether from church or chapel, or from a charity society—funds which the purely official authority find so very difficult to get, even for such things as are purely ancillary to the treatment. On the other hand, an official background is needed to give the necessary organisation and stability and to prevent overlapping and waste of energy, for voluntary workers often lack training and do not possess the legal power and rights of compulsion which officialism can give. A happy combination of the voluntary with the official is the right thing to aim at. After-care work is always difficult to arrange, and it is highly desirable to call in all and every aid possible, and not to turn the cold shoulder to the willing worker.

The other point which I should like to mention is the necessity in any effort that is being made of preventing any interference between the private patient and his medical attendant, but while this is being so arranged it must also be managed that the advantages of after-care assistance should extend to the private patient if he requires it. It is most important that the work of the local practitioner and of the panel practitioner be in harmony with that done at the dispensary. If the chief tuberculosis officer bears this in mind in his arrangements, then all things will work smoothly, but without the aid and sympathy of the local medical profession not only would the maximum benefit be lost, but the success of the whole system would be jeopardised.

The tuberculosis officer of Plymouth has issued a most interesting pamphlet on his scheme there. He sets forth clearly how it can best be carried on so as to avoid friction (and Plymouth is not unique, many other places also do it). The local practitioners are made to feel in every possible way that their assistance is asked, and that, though there is no desire or attempt to wrest their patients from them, the municipal dispensary is quite prepared to take charge of the case when they or the patient desire it.

So much for general remarks on the subject. I shall now pass to the results of an inquiry made by the National Association recently as to the methods of after-care at present in vogue.

Efforts have been made to get as complete a report as possible. All the permanent Insurance Committees and all the tuberculosis officers appointed up to date have been asked for information. It has been found that a good many places have not developed their scheme sufficiently yet to give any answer at all, but the answers that have been received showed that the methods adopted fall conveniently into five heads or classes: (1) places that do little after-care work at all and have no dispensary (this is owing either to apathy and general slackness or to being a little behind the times); (2) places where the after-care work is done through the medical officer of health, with official health visitors and a municipal dispensary; (3) where in addition there is a band of voluntary visitors and workers also helping, but under the control of the medical officer of health; (4) where there is a voluntary dispensary and voluntary After-Care Committee; and (5) where there is a municipal dispensary with health visitors and a fully organised voluntary After-Care Committee. I will now shortly consider each of these classes, and give a few typical instances.

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[1] A paper read at a conference of the National Association for the Prevention of Consumption and Other Forms of Tuberculosis, held at Leeds on July 7th and 8th, 1914.

Of the first class, the apathetic, it will be well perhaps not to give instances, but just to pass them by; but among those where nothing is yet settled may be mentioned Argyll and Grimsby and the Isle of Wight. This class, though comparatively large now, is rapidly diminishing in size.

To instance the second class, where there is a dispensary and official visitors all under the medical officer of health, I may mention Birkenhead, where it is stated that "there is no need for an After-Care Committee"; Perthshire, where "there are 11 dispensaries and official nurses, but no need for outside help"; Salford, where "no need has yet been found for an After-Care Committee"; and Southampton, where "the services of voluntary workers are not requisitioned." In these cases the work is well done by the energy of the medical officer of health, who takes the place of the After-Care Committee, but when a less energetic officer comes into power it will, I think, be found necessary to alter the arrangements.

In the third class approach is made towards an After-Care Committee, though one is not actually organised—i.e., voluntary assistance is welcomed. Thus in the London borough of Westminster there is a strong band of voluntary health visitors who act with and, to some degree, under the guidance of the two paid official health visitors. In Birmingham there are 10 paid health visitors, but the medical officer of health calls in the aid of the voluntary help societies too; and while mentioning Birmingham I may state that special efforts are being made there to meet the handicap caused by the fear of the consumptive, by giving to the ex-sanatorium patient a certificate of freedom from tubercle bacilli, if on investigation this is found to be the case. Ayr, Bolton, Dumbartonshire, and Manchester may also be mentioned as places where help is sought from voluntary visitors, and in Worcestershire, Norfolk, and Liverpool, and in many other places, members of the Insurance Committees assist in after-care work. In the boroughs of St. Pancras and of Wandsworth the cases are sorted out and referred to the suitable voluntary agency for help by the medical officer of health or his representative. In this class, as in the one previous, there is, I think, too great a strain on the individual, and the work would be equally well done if put under the control of a definite and properly organised after-care committee.

Now for the last two classes, in which there is a fully organised voluntary after-care committee. These differ in the fact than in one of them—the fourth—there is a voluntary dispensary, and in the other one a municipal dispensary.

The former class is small and almost confined to Edinburgh and to the 11 central fund dispensaries of some of the London boroughs—e.g., in Paddington and Kensington. Leeds also has both a voluntary and a municipal dispensary. These voluntary dispensaries were the first in the field, and led the way in dispensary work and in the after-care work attached, and nothing but praise can be given to their results. But, on the other hand, it is often found to be difficult to start a voluntary dispensary because of the shortness of money, and because in any place where a dispensary is being started the Local Government Board prefers that it should be under municipal control. A great point has been made by the advocates of the voluntary dispensary that domiciliary visits are easier to arrange for under this system than under a municipal one. It is even urged that they are forbidden under the latter, but as a matter of fact, if the rules and regulations are worked with elasticity, as they are in many places, and with the good will of the local practitioner, no difficulty is found in this matter, or in dealing satisfactorily with bed-ridden patients. And of course it must always be remembered that if it is necessary a municipal officer has a right of ingress which no voluntary official can possess.

In the fifth and last class there is, as has been said, the complete scheme—a municipal dispensary and a voluntary After-Care Committee under the controlling influence of the tuberculosis officer, and helped by representatives of all voluntary and official agencies interested in the work. There are more than 50 places where this scheme is already at work, and the number is daily increasing. In some of these the nucleus of the scheme already existed before the Act came in, and it is among those that it is being most successfully worked. Hampstead and Portsmouth may be taken as instances of this. In Hampstead there is a municipal dispensary under the tuberculosis officer which any Hampstead resident can attend, and there is a voluntary joint Tuberculosis Committee with five Branch Committees of Assistance that stand by to assist any phthisis case that needs help in any way. To Hampstead is also due the credit of leading the way in finding occupation for the part employable in their arrangements with the vacant land association. In Portsmouth under the Dispensary Care Committee, with the medical officer of health as chairman and adviser, the same work is carried on; extra nourishment and clothing are supplied, advice is given as regards work, monetary assistance advanced for removal to better homes, and the loan of shelters to patients requiring them is considered. At Plymouth, besides an After-Care Committee in connexion with the dispensary, there is one contemplated in connexion with the sanatorium also. This is most useful, because as the Tuberculosis Committees are in touch with one another it insures a continuity of advice about every patient. The same scheme is carried out at Kelling Sanatorium, but unfortunately here Norfolk is not advanced enough yet to have an After-Care Committee to receive the reports. I may mention that at Kelling a special after-care fund has been started to assist the patients on leaving. In Oxfordshire the after-care work is assisted by correspondents who, under the control of the tuberculosis officer, are appointed to look after individual cases. In Somerset something very similar obtains. Each case is handed over by the tuberculosis officer into the charge of a member of an After-Care Committee, who is responsible for him to that committee, and no one else is allowed to bother him. At Eastbourne, under the presidency of the Mayor and chairmanship of the medical officer of health, a strong Tuberculosis Care Committee is at work with very satisfactory results. At Warrington the Guild of Help has been developed into a Tuberculosis Care Committee, with the old machinery, and, being fully representative, has started off with great enthusiasm. And, finally, I may mention that here at Leeds there is a Samaritan Committee in connexion with the voluntary dispensary, and an After-Care Committee has just been formed in connexion with the municipal dispensary. So in these matters Leeds has at all events made a good start.

In concluding this paper I should like to express a hope that in a short time a full scheme of after-care work will be started in each district, and that a grant towards the work may be made by the Treasury. The Local Government Board has acknowledged the importance of after-care, and if all local authorities would take it up the Treasury would not, I think, allow their efforts to be rendered futile through lack of funds, and would at all events consider the advisability of making a grant.

After all, the necessary extra money required for this work is not large in amount, and in any case it is much cheaper to spend a little money to keep a patient well and able to support his family than to allow all the money already spent to be wasted by a relapse through want of care and short-sighted economy.

Norwich.

TREATMENT OF YAWS BY INTRAVENOUS AND INTRAMUSCULAR INJECTIONS OF SALVARSAN AND NEOSALVARSAN.[1]

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A CURATIVE treatment of yaws is especially necessary in Fiji because every Fijian who does not die in infancy contracts the disease, usually at about the age of 2 years. The mortality from yaws among the Fijian children is enormous—in fact, yaws, its sequelæ and complications are the chief causes of the excessively high death-rate among all ages of Fijians.

The tertiary stages of yaws are almost indistinguishable clinically from tertiary syphilis, whilst paraframbœsial diseases are as common among Fijians as parasyphilitic diseases are among other races. Miscarriage is common, especially in the early months of pregnancy, and is almost certainly due to maternal yaws. The total extinction of the Fijian race is threatened, and yaws is one of the most important factors.

In August, 1911, treatment by salvarsan was started by me at the Colonial Hospital, Suva. Thirty-six cases of yaws were treated there before the end of that year. From January, 1912, treatment by salvarsan and neosalvarsan has been continued by me in two of the country districts, a further 54 cases having been treated. In one of these districts there was a hospital for the treatment of Fijians. In the other there was no such hospital and patients were treated during my half-yearly tours of inspection in their own homes in the mountains. In all 90 cases of yaws have been treated, including a European, a Wallis Islander, some half-castes, Samoans, Indians, and Fijians, as the following table shows:—

Table showing the Number of Patients of Various Races Treated and the Drug and Method Employed.

Year.	Secondary yaws.				Total.	Tertiary yaws.					Total.	Grand Total.	Drug used and method.			
	Nationality.					Nationality.							Salvarsan.		Neo-salvarsan.	
	Fijian.	Indian.	Wallis Isles.	Samoan.		European.	Fijian.	Indian.	Half caste.	Samoan.			Intra-venous.	Intra-muscular.	Intra-venous.	Intra-muscular.
1911	1	2	1	3	7	1	19	2	2	5	29	36	16	20	—	—
1912	13	—	—	—	13	—	9	9	2	2	22	35	—	35	—	—
1913	10	—	—	—	10	—	9	—	—	—	9	19	—	—	1	18
Total	24	2	1	3	30	1	37	11	4	7	60	90	16	55	1	18

As far as can be judged from the small number of cases treated, salvarsan has no selective influence on any particular race. Several of the Fijians suffered from albuminuria for two or three days after treatment. I cannot say why this should be, and am of opinion that filariasis has nothing whatever to do with it.

The method of treatment was by intravenous injection in 17 cases and by intramuscular or subcutaneous injection in 73 cases. In the cases treated during 1911 sterilised (but not filtered) distilled water was used for the preparation of a 1 in 50 faintly alkaline solution of salvarsan with 0·8 per cent. NaCl for intravenous use. I now use sterilised filtered rainwater for this purpose. Subcutaneous injection has been abandoned. For intramuscular use various oily suspensions were tried and abandoned, as was the faintly alkaline 1 in 10 solution of salvarsan in normal saline. I now use for intramuscular injection of salvarsan a 1 in 10 solution in sterilised filtered rainwater, this solution being strongly acid. For intravenous injection of neosalvarsan a solution in sterilised filtered rainwater with 0·4 per cent. NaCl is now used. For intramuscular injection of neosalvarsan a 1 in 10 solution in sterilised filtered rainwater is used. One case was treated with "blister serum" obtained from two patients treated six and five days previously. No improvement resulted, and in any case such treatment has nothing to recommend it in Fiji.

To judge from the very small number of cases treated salvarsan seems the preferable drug to use in hospital treatment, and neosalvarsan if patients have to be treated in their villages or at an out-patient dispensary.

With regard to dosage, it may be remarked that the average adult Fijian male weighs well over 160 lb.; the average adult Indian male in Fiji weighs probably somewhere about 110 lb. In dosage I am roughly guided by the body weight. Formerly 0·6 grm. of salvarsan was given to an adult male Fijian intravenously in the treatment of yaws, but now I prefer a smaller dose, as I am of opinion that several small doses are as efficacious in the treatment of yaws as is one large dose, and while being safer are not much more unpleasant. For yaws in Indians I give smaller doses than for syphilis. Altogether my single dosage has varied from 0·1 grm. of neosalvarsan intramuscularly to a baby aged 10 months to 0·6 grm. of salvarsan (or 0·9 grm. neosalvarsan) intravenously to an adult male Fijian. The intravenous method is preferable in hospital practice and the intramuscular when travelling. There was one death among the early cases, quoted as follows in the annual report for 1911:—

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[1] This communication was taken as read at the Australasian Medical Congress, Feb. 12th, 1914.—ED. L.

A female Fijian of about 50 years of age had been known at the hospital for some years as the subject of a chronic yaws ulcer of breast. She was a typical subject of chronic yaws cachexia with chronic nephritis (probably due to the arterial disease dependent upon chronic yaws cachexia). Considering the chronic yaws cachexia to be an indication for a full dose of salvarsan, on August 19th, 1911, she was given 0·6 grm. salvarsan intravenously. An hour later she had a violent rigor; temperature 103° F.; very rapid weak pulse, and vomiting. Throughout the night she was given strychnine and digitalin four-hourly. On the 20th she was still very weak, her pulse was poor, and food made her sick. The bowels were kept open by enemata. The urine was solid with albumin. On the 21st she complained of pain in the abdomen and joints. The muscles of the legs were tender on pressure. On the 24th jaundice set in, her listlessness increased, and her pulse became weaker. She died an hour after a full meal had been given to her by another patient against orders. Her relatives refused to allow a post-mortem examination. Death in my opinion was due to an overdose of salvarsan (arsenical poisoning). In the light of further experience I consider that 0·2 grm. would have been a suitable dose to start with.

With the exception of this case, of the case treated by "blister serum," and of one case which was much improved though not completely cured, all the cases were apparently cured.

Of the 30 secondary yaws cases all were acutely ill. Three children were so extensively ulcerated that it would have been impossible to place a halfpenny on an area of sound skin. It was impossible to determine how long these children had been affected before coming to hospital. One other case, an Indian child aged 8 years, had been under treatment by another medical man for over nine months without improvement, in spite of the use internally of various drugs together with local surgical measures. He was cured within a week by intravenous injection of 0·3 grm. of salvarsan. He was examined two years and four months after treatment by salvarsan and found free from any signs of disease. During that time he had had no recurrence. From what one sees of secondary yaws in Fiji it is certain that a majority of these cases must have died failing their treatment by salvarsan.

Of the cases of tertiary yaws, the lesions were chiefly chronic ulcers which had existed for periods of time varying from a month to over 50 years. The ulcers were usually multiple and the situations included the nail-beds of the fingers and toes, the plantar surface of the foot (where the very painful granuloma ulcerates through the thick plantar skin, forming the "soki" or crab-yaw), the heel, the upper surface of the foot, leg, thigh, penis, buttocks, and anus, the hand, forearm, arm, shoulder, breasts, front of chest wall, abdominal wall, back of the trunk, alæ and septum of nose, cheeks, tongue, hard and soft palate, and pillars of fauces and larynx. Many of these patients suffered from periostitis with or without ulceration of the overlying tissues, the periostitis affecting the tibiæ, manubrium sterni, ribs (with perichondritis of the costal cartilages), metacarpal bones, and phalanges.

Of the cases treated in 1911 for tertiary yaws four have been seen or definitely heard of after a lapse of a considerable period of time. The following short notes will describe their lesions, treatment, and results.

Serial Case No. 22.—A European male aged 57 years. Born in Fiji and has lived there all his life. He was sent to the Colonial Hospital in September, 1911, with a note from four European residents in his neighbourhood who evidently regarded his condition as hopeless. On examination he was very wasted and cachectic. His right hand was affected with chronic yaws ulceration which had existed for over 50 years without ever having been healed, although he had at frequent intervals been for weeks or months under treatment by drugs, such as potassium iodide internally and by such local measures as scraping and dressings. For over two months he had had two unhealthy looking protuberant ulcers of the skin of his face and for one month he had had a deep rapidly excavating ulcer of the penis about 1¼ inches in diameter. He suffered from marked chronic nephritis, having to get up five or six times each night to pass urine. The specific gravity of the urine was 1006; it contained no albumin. On Sept. 5th, 1911, he was given 0·3 grm. salvarsan intravenously. On the 11th a further 0·3 grm. subcutaneously was given. On the 20th the ulcers were all healed. The man left the hospital, as he expressed it, a healthier man than he had ever been before. He then had to get up only once or twice at night to pass water. I heard of this patient nearly 18 months later when he was reported to be "quite well."

Serial Case No. 4.—An adult male Samoan. He was the subject of a tertiary yaws ulceration of both legs of at least nine months' duration. Round these ulcers there was a large area of scarring which suggested that the legs must have been ulcerated on and off for many years. There was extensive periostitis of the right tibia. He had taken potassium iodide from a chemist for several months without improvement. On August 7th, 1911, he was given 0·6 grm. salvarsan intravenously. On the 21st he was discharged with his ulcers healed. Over a year later he was well and told me that he had had no recurrence of disease.

Serial Case No. 12.—An adult male Fijian with tertiary yaws ulceration of hands, pharynx, and throat. Salvarsan 0·6 grm. was given intramuscularly. Thirteen days later he was discharged cured. Two years and three months later he was examined and found to be perfectly well. He said he had had no illness since treatment.

Serial Case No. 7.—An adult female half-caste who was admitted to hospital with many callous ulcers over her shins and forearms. The left little finger was much scarred and ulcerated and was contracted by scar tissue. The patient gave a five years' history of this ulceration, but probably it had existed for much longer. She was given an intramuscular injection of 0·6 grm. of salvarsan and a subcutaneous injection of 0·2 grm. The ulcer on the little finger took several weeks to heal, and by the time she was discharged she was very greatly improved in general health. A year later she was seen by another medical man and was quite well, having had no symptoms of yaws after treatment. The other cases treated during 1911 have not returned to the Colonial Hospital for treatment, nor have they come back to me, but occasionally I hear of people who say they were cured of yaws by me at the Colonial Hospital, so the probability is that they have remained well since their treatment.

In conclusion, it may be said that salvarsan and neosalvarsan are the only drugs worth thinking of in the treatment of secondary yaws, which in Fiji is the most important stage of the disease. It is my opinion, also, that the injection of salvarsan or neosalvarsan is by far the most promising and radical method we now have for the treatment of tertiary yaws. So few cases of yaws have hitherto been treated by these drugs and so short a time has elapsed since the earliest cases were treated (my cases were, I believe, the first, or among the first, cases of yaws to be so treated, though they were not the first reported), that it is inadvisable to jump to the conclusion, as some have done, that salvarsan is a cure for yaws. We know practically nothing of the natural history of the yaws spirochæta, and in my opinion we are not justified in regarding any case of yaws as cured until a long period of time (say ten years) has elapsed without recurrence. Even then the question of reinfection will have to be considered and may obscure the result. That many patients who would otherwise have died from yaws or its sequelæ have been saved by these drugs is unquestionable, and in Fiji, at all events, the correct use of the drug may result in giving a new lease of life to a dying race.

Fiji.

PNEUMOSAN IN THE TREATMENT OF PULMONARY TUBERCULOSIS.

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EARLY last year I had amongst the patients under my care a considerable number who were suffering from pulmonary tuberculosis in an acute stage. They were cases eminently unsuitable for the exhibition of tuberculin, so I determined cautiously to try pneumosan. The results proved so satisfactory with this group of patients that I extended the investigation in the following ways. First, I transferred from tuberculin to pneumosan all those patients who under tuberculin were not making such good progress as I desired. Secondly, taking a batch of new patients, I placed the odd numbers upon pneumosan, the even upon tuberculin; unless I considered that tuberculin might in any case prove harmful. In this way I have had during 12 months 121 patients under treatment with pneumosan, and I think the results will be of interest to practitioners who are as yet unfamiliar with the preparation.

Before tabulating my results I will describe the method of administration. The injection is given intramuscularly in the deltoid, using each arm alternately and avoiding as far as possible the exact site of the previous one. The patient's hand is placed upon his hip, the arm being held relaxed in the same plane as the body. The site for injection is swabbed with spirit solution (1:1000) and the needle plunged swiftly through the skin at right angles to it. Injection must be made slowly or it is likely to cause pain. It is recommended that the injections be given daily, but dealing with out-patients of the hospital class this is impracticable, and in most cases they are given but twice weekly; only in a small number three or more times a week. For an adult the initial dose is 0·25 c.c. (= ♏iv.); this was increased gradually to a maximum of 1 c.c. (= ♏xvii). In no case has any local reaction been observed, though a few patients have complained of pain in the arm during the remainder of the day after injection. General reactions as evidenced by the temperature chart are fairly common, but are not associated with such marked subjective symptoms as is usual with tuberculin reactions. As the course of treatment proceeded, the temperature where previously high and irregular usually steadied down; only in the very advanced cases did it maintain a daily variation through as much as 2° F.

My original object in using pneumosan was to reduce the patient's temperature and fit him for subsequent tuberculin treatment, but as I noticed that coincident with the defervescence there was a marked improvement in the general condition of most patients, I decided to withhold tuberculin and watch the effect of the continued administration of pneumosan upon the physical signs. The first sign of general improvement was, as a rule, diminution of cough; this was followed by increase of weight, appetite, and energy, resulting in an all-round feeling of renewed well-being. Many patients whose physical signs have altered but little (this refers especially to the advanced) nevertheless demonstrate in varying degrees these improvements in their general health. I spoke of having used pneumosan in 121 cases, but only 103 are tabulated; the reason for this discrepancy of 18 is that 7 patients after beginning treatment desired to discontinue their attendances at the dispensary, while the last 11 have not as yet been under treatment for a sufficient time to warrant their inclusion in the table.

Table showing how 103 Patients fared under Pneumosan Treatment, and into which Stage (Turban) they had Advanced.

—	First stage.	Second stage.	Third stage.	Very advanced.	Total.
Deteriorated under treatment	1	0	2	6	9
No appreciable change	5	2	5	3	15
Improved	10	10	8	5	33
Much improved	13	8	9	5	35
Disease arrested	7	3	1	0	11
Total...	36	23	25	19	103

I have lent towards severity in estimating the changes occurring after the use of pneumosan. It must be borne in mind that many of the cases were given pneumosan for the very reasons that they were not progressing favourably under other forms of treatment. Great difficulty was met with in subdividing patients in the improved groups. I confess that I am unable to give a precise definition of all the points which influenced me when subdividing this group, but, broadly speaking, those classed as "improved" are so chiefly with reference to their symptoms, while the "much improved" are so with reference to their physical signs as well as to their symptoms. As this paper approaches the subject solely from its clinical side I consider this rather loose subdivision of the improved cases to be helpful.

It is a striking coincidence that in all patients who are gaining the upper hand in their struggle with the tubercle bacillus symptoms improve before physical signs, and that it is not uncommon to find a patient who, anatomically speaking, is in an advanced stage of tuberculosis is yet symptomatically well for all ordinary purposes. Such patients may well be termed "carriers." On the other hand, patients in an earlier stage with no, or but slight, physical signs are not infrequently suffering from pronounced toxæmia. These facts should make us extremely cautious in speaking of a cure or even an arrest of the disease. Unfortunately, we have as yet no reaction whereby we are enabled to test whether the disease is entirely overcome or is remaining latent. Besredka's serum diagnosis may prove to be such, but requires further confirmation. The tuberculin reaction is an anaphylactic phenomenon, and merely informs us that our patient has at some time in his life been rendered sensitive to tuberculin. This information, though occasionally very useful for diagnostic purposes, does not help us in deciding when a patient is cured, and there is no evidence to show that the mere raising of tuberculin tolerance to a high level is coincident with the eradication of the disease. As, therefore, we have no certain method of determining when the disease is eradicated, I have in drawing up the preceding table only classed a patient as "disease arrested" when physical examination shows no signs of activity and when at the same time all symptoms have ceased. This class, together with certain of the "much improved" group, are now on furlough and are due to report for re-examination on fixed dates. All our patients are in this way kept under periodical observation, and during the intervals are visited from time to time by the nursing staff. At a later date, therefore, I shall be in a position to state to what extent these patients have succeeded in maintaining their health. However this may be, I anticipate that in the course of a few months the balance of the table will be greatly altered by the passing over of many from the "much improved" to the "disease arrested" group. It will be noticed that the so-called first stage cases show the highest proportion of good results. This is only to be expected under any beneficial form of treatment, but I should like to take this opportunity to point out that what we are in the habit of calling the first stage (using Turban's anatomical classification) is in reality a stage of well-advanced disease. Strictly speaking, the first stage is the stage of deposition of the bacillus in the tissues; between this and the development of physical signs a considerable interval elapses, during which the tuberculin reaction manifests itself. It is the appearance of this reaction which heralds the second stage proper. During all this time the bacilli have been multiplying in the tissues and have been surrounded by barriers of connective tissue creating what Ehrlich terms a "dead corner," which makes it increasingly difficult for our remedies to affect them either directly or indirectly. Yet it is not until all this has happened that we begin to talk of a first stage.

What really is most needed in the treatment of tuberculosis is early diagnosis, such as is now possible in the case of syphilis. When we have a means of arriving at the diagnosis sufficiently early my experience leads me to hope that in a majority of cases a course of treatment with pneumosan will prove entirely efficacious. I have found it a most useful drug in the so-called first and second stages of the disease, and I know of no better palliative in advanced cases. I do not regard its action as specific, but rather as tonic and alterative. In a large number of cases its use is followed by a defervescence of temperature and an improvement of the patient's general condition, resulting in arrest of the disease. On these grounds I consider that it merits a more extended trial, particularly as its use appears to be free from danger even in acute and advanced cases.

In the course of my remarks I may appear to have disparaged tuberculin as a therapeutic agent; before concluding, then, let me make it clear that I am a believer in the value of tuberculin under proper conditions

Birmingham

Reviews and Notices of Books.

The Great Problems.

By BERNARDINO VARISCO, Professor of Theoretic Philosophy in the University of Rome. Translated by R. C. LODGE, M.A. London: George Allen and Co., Limited. 1914. Pp. 370. Price 10*s.* 6*d.* net.

F. Schlegel was the first to observe that every man is born either a Platonist or an Aristotelian; and it is unquestionably true that a broad dichotomy exists in men's outlook on philosophic problems. The method of one is that of mysticism, the other that of science. The work of one looms vaguely through a cloud of emotion and hidden longings or passions; that of the other presents sharp and decisive outlines, and exhibits without softening or disguise the naked crudity of facts. Doubtless each point of view is rooted deep in the inherited constitution of the mind of man, and the weapons to which the first is accustomed are ill-fitted to combat the tenets of the second.

The philosophy of Bernardino Varisco represents the extreme mystical position, in sharp contrast to the philosophy of science. It is likely, therefore, that many men of science will see in it, as in all such systems, nothing more than a refined and educated expression of the class of sentiments which in a lower sphere gives rise to "christian science" or "higher thought." Just as a quack medicine plausibly advertised may take in a large number of apparently intelligent people, so a quack philosophy when backed by the learning and conviction of a university professor may carry an appearance of respectability which will be questioned only by those whose contact with human nature has taught them the astonishing fallibility and measureless credulity of mankind. A body, according to Professor Varisco, is a group of sense-perceivables bound together by a law. The Kantian reader would, perhaps, rather be this than simply an original transcendental synthetic unity of apperception; but neither solution is very attractive. Morality, according to Professor Varisco, is by no means "bien fondée," unless it is in agreement with "metaphysical truth." Seeing that scarcely two philosophers can be found to agree as to what is metaphysical truth, morality would seem to be in a bad way. Professor Varisco accepts the view of the original degradation of man: Every man begins by being "a true brute, however sweet a baby"; and this is a fact "to which nothing can be opposed except idle chatter." The professor travels somewhat far afield in search of an illustration of bad manners—viz., taking in one's arms a young lady in her nightdress. But, we are informed, the relativity of such rules is shown by the fact that this breach of good manners may rightly be perpetrated by a night-watchman in case of fire.

The translation is good, though a few criticisms are inevitably called for. We do not know what is meant by the "mutual weight" of bodies. It is customary in England to write the name of Descartes in one word. One note of warning, however: he who "tries to destroy my value," says Professor Varisco, "commits an infamous action." ...... "He is a brute with certain human characteristics. If I have the power I crush him like a loathsome poisonous worm." Let us, then, hastily disarm Professor Varisco's wrath by warmly recommending his work to all theosophists, mystics, flagellants, tarantists, and others who recoil from the drab vulgarity of a matter-of-fact world.

Medical Gynecology.

By SAMUEL WYLLIS BANDLER, Adjunct Professor of Diseases of Women, New York Post-Graduate Hospital and Medical School. Third edition, thoroughly revised, with original illustrations. London and Philadelphia: W. B. Saunders Company. 1914. Pp. 790. Price 21*s.* net.

THIS work has reached a third edition and, as the author points out, the demand for this new edition coincides with a more general recognition in every department of medicine of the importance of the internal secretions. In previous editions the importance of these secretions has been pointed out, and in recent work on this subject Dr. Bandler thinks that we have the very highest proofs of the close inter-relationships existing between the genital tract of women and the various internal glands. No doubt in the main this is true, but it is important to remember that there is still much that is conjectural in regard to these subjects. It is therefore very questionable whether the time has yet come when such relations, highly speculative as they are and must remain for a long time, should be allowed to bulk so largely in a text-book devoted to medical gynæcology as they do in this present work. A large amount of space is devoted to an interesting account of the many theories which have been put forward as to the functions and inter-relations of the various internal glands, and no small part of the author's treatment is coloured by the fact that he apparently believes in such inter-relations to a very great degree. For this reason, although his teaching on these points is interesting, we are not prepared to admit that it is all founded upon a very sure basis. At any rate, in this respect the book is up to date, even if many of the deductions drawn are not warranted by the proved facts.

Pathogenic Micro-organisms: A Text-book of Microbiology for Physicians and Students of Medicine.

By WARD J. MACNEAL, Ph.D., M.D., Professor of Pathology and Bacteriology in the New York Post-graduate Medical School and Hospital. Philadelphia: P. Blakiston's Son and Co. 1914. Pp. 462.

THIS book represents a new edition of Professor H. U. Williams's Manual of Bacteriology, but has been largely rewritten. It embraces not only bacteria but also protozoan parasites.

After an introductory section on the relationship of micro-organisms to pathology, commerce, and agriculture, the first six chapters of the book are devoted to methods of microscopy, staining, cultivation, and so forth, practical advice being given as to collection of material and inoculation of animals. The next seven chapters, forming the second part of the book, deal with the general characters of micro-organisms—morphology, physiology, habitat, pathogenicity, and with the theory of immunity, including the various substances formed in the body of the host in response to infection. In the remaining chapters—XIV. to XXX.—the individual organisms are dealt with; the moulds, trichomycetes, cocci, and bacteria being taken up in turn, followed by the spirilla, spirochætæ, filterable microbes, and the four groups of protozoa. Organisms parasitic in animals receive attention as well as those found in human beings; indeed, the list of organisms included seems very complete, and the accounts of them are adequate for the purposes of the medical reader, though necessarily condensed. There is a large number of illustrations which are satisfactory on the whole; those of the protozoa are mainly taken from Doflein's manual. References to other works are at times given in foot-notes to enable further information to be sought on particular subjects.

The book contains a large amount of information in a small compass. It is accurate and up to date, and may be commended for the use of students of medicine.

Practical Hormone Therapy.

By H. R. HARROWER. With a Foreword by Professor Dr. A. BIEDL. London: Baillière, Tindall, and Cox. 1914. Pp. 488. Price 15*s.* net.

IN both medicine and physiology hormones and the secretions of the ductless glands have received a vast amount of attention during the last few years. Notable discussions on the subject took place at the International Congress of Medicine held in London last August, and the literature dealing with the endocrine (or internally secreting) glands is nowadays portentously large. This literature has been very ably summarised in the typical encyclopædic German text-book of Professor A. Biedl, of Vienna,[1] who writes an appreciative preface to this volume, which is founded on the literature of the subject, and does not profess to be a record of personal clinical experiences. To use the author's phrase, most of the facts have been drawn from medical and technical journals, and his large charity would appear to put an equally high value upon all of them. Three chapters at the end of the book give a glossary of many of the new terms used in hormone therapy, an organotherapeutic dose-table and list of diseases in which the various animal extracts are likely to do good, and a list of the most important books on the internal secretions. This section may be of service to the general practitioner.

Heil- und Pflegeanstalten für Psychischkranke in Wort und Bild.

Redigiert von Oberarzt Dr. JOHS. BRESLER. Erster Band. Halle/a/S.: Carl Marhold. 1914. Pp. 372. Price 14 marks.

THE work, of which this is the first volume, forms part of a series of publications issued by the firm of Marhold, of Halle, descriptive of hospitals, asylums, and other public institutions for the care of the sick and infirm. Earlier volumes dealt with lunatic asylums in Germany and Austria, and this further work proposes to describe on similar lines the institutions for the insane in other countries.

In the present volume accounts are given of a number of asylums in Brazil, Japan, Russia, Sweden, Denmark, Holland, Belgium, Hungary, Servia, and Bulgaria, and also of some recently built asylums in Germany. The descriptive articles are written by the superintendents of the several asylums or by other members of the medical staffs, and in each case the text is illustrated by an abundance of photographs which have been admirably reproduced, and also, in most instances, by fairly detailed plans. The work should prove useful to architects and to others who are concerned with designing new asylums, both as a compendium of information that can be immediately utilised, and as a guide to selecting the institutions which may most profitably be visited with a view to studying the development and application of special structural features.

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[1] THE LANCET, March 22nd, 1913, p. 833.

But the book has also a wider interest as showing the general tendencies, as well as the local and national influences, in modern asylum construction. From this point of view it is gratifying to observe that abroad, as in this country, it has become the aim of asylum architects to eliminate, as far as possible, the prison-like character that used to be distinctive of such institutions. Traces of the older ideas, however, still persist, especially in the designing of asylums for criminal and dangerous lunatics; and some of the buildings of quite recent date described in this volume—such, for instance, as the Festes Haus erected in 1913 in connexion with Plagwitz Asylum—have more resemblance to old-fashioned prisons than to modern hospitals for the insane. Unless the proportion of desperately dangerous patients is very much higher in German asylums than in those of this country, it is difficult to believe that such elaborate provision for security and restraint can be either necessary or desirable. In pleasant contrast with these survivals of the penal tradition in the treatment of insanity, we may note the admirable lines on which the latest asylum in the Rhine Provinces, that of Bedburg-Hau, near Cleves, has been planned. The description of this splendid asylum is one of the fullest and most interesting in the book, and may be commended to the attention of readers who desire to acquaint themselves with the most modern ideas in asylum construction.

Lehrbuch der Forensischen Psychiatrie.

Von Professor Dr. A. H. HÜBNER, Oberarzt der Psychiatrischen und Nervenklinik in Bonn. Bonn: A. Marcus und E. Weber. 1914. Pp. 1066. Price, paper, 26 marks; bound, 28 marks.

Professor Hübner's text-book of forensic psychiatry has naturally a restricted appeal in so far as its first half, of some 600 pages, is concerned with the German and Austrian statutes that bear on criminal lunacy, accident compensation, the responsibility of the mentally defective, disciplinary regulations in regard to military service, nullity of marriage, testamentary capacity, and kindred subjects. The second half of the book supplies a series of long sketches of the varieties of nervous and mental disease, where symptoms may arise that may become of medico-legal importance. This section is amplified by the inclusion of a large number of illustrative cases, many of which, especially perhaps those that exemplify hysteria and epilepsy, are of considerable interest.

We should think that a volume of such erudition is sure to prove valuable to the neurologists and alienists in Germany and Austria, whose practice must bring them into contact with such cases as are here described, and to whom a suitable work of reference is indispensable.

MISCELLANEOUS VOLUMES.

A NUMBER of text-books on biochemistry, organic chemistry, inorganic chemistry, physics, and chemical physiology have been received by us since a recent date, and these may be conveniently dealt with in juxtaposition.

The valuable series of monographs on biochemistry, published by Messrs. Longmans, Green, and Co., and edited by R. H. A. PLIMMER, D.Sc., and F. G. HOPKINS, M.A., M.B., D.Sc., F.R.S., has recently been enriched by several volumes. Mr. GEORGE BARGER, M.A., D.Sc., contributes an interesting volume on *The Simpler Natural Bases* (London: Longmans, Green, and Co. 1914. Pp. 215. Price 6*s.* net), these being the basic substances of animals and plants represented by the amines derived from protein, the betaines, choline and allied substances, the creatine group, adrenalin, and bases of unknown constitution—e.g., spermine and vitamine. The appendix includes an account of the practical chemical methods used in the separation of these bases. The work contains an admirable survey of the recent developments of this important branch of research. ——Mr. WALTER JONES, Ph.D., has written a very instructive monograph on the *Nucleic Acids* (same publishers. Pp. 115. Price 3*s.* 6*d.* net). The appearance of this volume will be welcomed, as the subject has not hitherto received exclusive treatment. The chemical properties and the physiological action of the nucleic acids (thymus nucleic acid and yeast nucleic acid, for example) are adequately described.—— *Alcoholic Fermentation*, by ARTHUR HARDEN, Ph.D., D.Sc., F.R.S. (same publishers. Pp. 156. Price 4*s.* net), is a new edition, issued to keep pace with the rapid progress made in this field of inquiry. The modern views of the process of fermentation are set forth clearly, and the subject shows most interesting developments, about which the author writes authoritatively.——*The Nature of Enzyme Action*, by Professor W. M. BAYLISS, D.Sc., F.R.S. (same publishers. Pp. 180. Price 5*s.*), has reached its third edition, the reissue being necessary on account of continual new discoveries in this field. The chapters on "reversibility" and on the "combination" between enzyme and substrate illustrate well the trend of these discoveries. The sections are of extreme interest, the development of the subject leading to vital interpretations of biological processes. There is no more fascinating subject than the behaviour of enzymes and co-bodies in regulating the great physiological processes inside and outside the human machine.——The eighth edition of Professor W. D. HALLIBURTON'S *Essentials of Chemical Physiology* (same publishers. Pp. 324. Price 5*s.* net) has been issued, and here again the author has had to work hard in the direction of revision in view of the great advances made in all branches of biochemistry. In this he has succeeded whilst keeping the volume within convenient limits. A valuable feature of this new edition is the use of heavy type which serves to emphasise the importance of the practical sections. It is an excellent guide to the student in the laboratory, and possesses the advantage of presenting practical details in clear terms.——*Spectrum Analysis applied to Biology and Medicine*, by the late C. A. MACMUNN (same publishers. Pp. 112. Price 5*s.* net), brings together the valuable researches of this author in the field indicated by the title. In spite of the disadvantages under which he laboured he has presented results of considerable importance in the medical and biological study of pigments, most of his work being done after a busy professional day and in an environment remote from the help or encouragement of co-workers in science. Vegetable, urinary, and blood pigments form the chief theme of the work, and it contains numerous interesting disclosures in regard to the analytical power of the spectroscope in this region of study. The animal and vegetable pigments are well worth further attention when the importance and significance of their functions are considered. The subject is unquestionably advanced by the issue of this volume.

The Viscosity of Liquids, by ALBERT ERNEST DUNSTAN, D.Sc., and FERDINAND BERNARD THOLE, B.Sc. (same publishers. Pp. 91. Price 3*s.* net), is an interesting contribution upon this question. If we accept, with the authors, the view that viscosity stands out as an eminent constituent property of the same order as optical rotatory power and the solution absorption of light, the measurement of this property becomes of importance in elucidating chemical structure. The book gives a short history of the subject and presents a working formula and a description of the various apparatus used.—— *Photo-electricity* is the title of a monograph by H. STANLEY ALLEN, M.A., D.Sc. (same publishers. Pp. 220. Price 7*s.* 6*d.* net), which deals with the liberation of electrons by light, and in which evidence is given of the action of light which may easily assume medical significance. The action of light has been seriously studied of late, and though in a general way we have known for long that light was essential to the well-being of the human organism, we are now getting a closer view of its influences. Ultra-violet light, according to the many interesting observations recorded in this book, is the most effective in bringing about changes in the state of electrification of a body. Hertz was the first to notice that when ultra-violet light fell upon a spark gap the discharge took place more easily than when the gap was not illuminated. An ordinary flame will produce a similar effect. The liberation of electrons by light again is probably at the root of the phenomenon of fluorescence and phosphorescence. The book presents the developments of this subject in accurate and clear terms ——*Rays of Positive Electricity and their Application to Chemical Analyses*, by Sir J. J. Thomson, O.M. (same publishers. Pp. 132. Price 5*s.* net), contains an interesting chapter on the application of positive rays to chemical analysis, and one of the reasons for the appearance of the book was the hope that its publication might induce others, and especially chemists, to try this method of analysis. The author describes the method as surprisingly sensitive, more so even than that of spectrum analysis, while the amount of material required is infinitesimal. He is confident that many problems in chemistry could be solved with far greater ease by this than any other method. A gas is placed into a discharge tube and a photograph of the positive rays is taken. From a study of the mechanism of the photographs it is possible to determine the different kinds of atoms and molecules in the discharge tube; and, further, the atomic or molecular weight of the gases can also be ascertained. This method has already indicated the presence of a new element in the lighter constituents of the atmosphere, which Sir J. J. Thomson thinks is tri-atomic hydrogen H_3. The book is a very interesting study of the valuable work that is being done in the Cavendish Laboratory under the direction of its distinguished professor. ——*Molecular Physics*, by James Arnold Crowther, M.A. (London: J. and A. Churchill. 1914. Pp. 167. Price 3*s.* 6*d.* net) evidences again the fruitful work done in the region of physics at the Cavendish Laboratory. Here again the analytical power of the positive rays is dealt with, and the illustrations are in fact reproductions of Sir J. J. Thomson's photographs, to whom the author expresses his acknowledgments. The book is attractively and clearly written, and those who are desirous of acquainting themselves with the recent marvellous developments in regard to our knowledge of the physics of the molecule, electrons, positive particles, and so forth, will read this account with unquestionable gain.——An important branch of the same subject is discussed in *The Chemistry of the Radio-Elements*, by Frederick Soddy, F.R.S. (London: Longmans, Green, and Co. 1914. Pp. 46. Price 2*s* net). The present issue is Part II. and is devoted to "The Radio-Elements and the Periodic Law." The position is well summed up in the following sentences: "Probably not one of the numerous new radio-elements possesses a unique chemical character unshared by others, and the chemistry of the 34 individuals now recognised becomes in consequence the chemistry of a much smaller number—about ten in all—of types of elements Of these five were known long before radio-activity, and the other five have been subsequently recognised as the direct result of that discovery." It is further concluded that the figures attached to the various families of the periodic table are relative rather than absolute, and represent not so much the absolute number of detachable electrons in the outer atomic ring as the number which one atom will succeed in detaching from another, the absolute number present in the ring being unknown. This view threatens to break down the boundary hitherto thought to exist between energy and matter.——From a medical point of view the most interesting question dealt with in *Incandescent Lamps and their Application*, by Daniel H. Ogley (same publishers. 1914. Pp. 108. Price 2*s.* 6*d.* net), is that of indirect lighting. The book is full of other interesting information in regard to the uses and properties of incandescent electric lamps. The author commends the inverted or indirect system and rightly condemns any system of illumination which means an offensive and painful glare to the eye. There are some excellent reproductions of photographs illustrating the charming effects of indirect lighting in the interior of churches, theatres, shop windows, workshops, and so forth. We are glad this subject is receiving considerable attention. For this movement a word of praise is due to the British Thomson Houston Company for their excellent appliances, which secure artistic, soft, and efficient illumination.

A Third Year Course of Organic Chemistry, by T. P. Hilditch, D.Sc. Lond., F.I.C. (London: Methuen and Co. 1914. Pp. 411. Price 6*s.*), is the sequel to "First Year Organic Chemistry," by Dr. A. E. Dunstan, and to Mr. F. B. Thole's "Second Year Organic Chemistry," the former dealing with the aliphatic (fatty) group of organic compounds, and the latter with the carbocyclic or benzene group. The present volume "completes the series by a survey of the heterocyclic compounds, followed by a study of certain groups of aliphatic and carbocyclic substances which, by reason of their complexity, are omitted from detailed consideration by students in the earlier periods of their course." The sugars and polypeptides and the terpenes or hydro-aromatic compounds are thus included. The book deals clearly with a complicated subject, and completes a series of text-books on organic chemistry which are particularly adapted for the use of students approaching the subject for the first time.

A series of useful practical chemical exercises for students reading for the Diploma in Public Health are brought together in *A Manual of Practical Chemistry for Public Health Students*, by A. W. Stewart, D.Sc. (London: John Bale, Sons, and Danielsson 1913. Pp. 76. Price 3*s.* 6*d.* net). These cover the experimental work connected with the analysis of air, water, foods and beverages, disinfectants, acidimetry, and alkalimetry. The paragraphs are brief, being confined strictly to practical analysis and examination. The tests chosen are evidently those which are found to be trustworthy in practice and which offer no special difficulties to the candidate.——In his *Notes on Elementary Inorganic Chemistry* (Cambridge University Press. 1914. Pp. 56. Price 3*s.* net) Mr. F. H. Jeffery, M.A., has introduced a laboratory companion to a course of lectures on elementary inorganic chemistry which presents the rudiments in simple terms and in a sequence which is helpful to the young student. In addition to setting forth well-known reactions and tests there is a useful note on certain examples of electrolysis. These notes possess the merit of simplicity, while they are written in conformity with modern ideas.

Amateur gardeners besides teachers and students of horticulture should appreciate *A Course of Practical Work in the Chemistry of the Garden*, by D. R. Edwardes-Ker, B.A., B.Sc. (London: John Murray. 1914. Pp. 40. Price 1*s.* 6*d.* net). It contains four chapters on the chemistry of (1) plants, (2) soda, (3) manures and fertilisers, and (4) sprays and washes. The experiments are described in charmingly simple terms and each conveys a valuable lesson. The management of the garden can be efficient only when a knowledge of the nutritive requirements of the plant is acquired, and this is supplied in this book. The facts about the nature of the soil and its active agents and the rôle of manures amply justify a recommendation of the book to the really systematic and interested gardener.

JOURNALS AND MAGAZINES.

Archives of the Roentgen Ray.—We are glad to welcome the first two numbers of vol. xix. of this periodical under its new publisher, William Heinemann. It is now printed throughout on art paper, which gives additional clearness to the diagrams and illustrations in the text. The June number contains an important article on the Absolute Measurement of the Biological Action of the X Rays and the Gamma Rays, by Dr. B. Szilard. The method adopted is that of ionisation, as being more free from objection than photographic, chemical, electrical, and other methods. In the July number is a most important paper from Dr. J. T. Case, a Critical Study of Intestinal Stasis. This article is one that deserves serious study, and without doubt will give rise to no little criticism and controversy. Dr. Case has worked at his subject with characteristic thoroughness, and the view taken by American surgeons of ileal stasis and intestinal kinks differs somewhat from that entertained in this country. We would direct attention to the first of a series of articles on diathermy, by Dr. E. P. Cumberbatch. This form of electrical application is becoming more widely used in many London hospitals, and is attracting considerable attention on the part of the profession, so that this series of articles will be of great value. The illustrations are good and well printed. We would draw attention to a radiograph of tulips by Mr. J. Hall-Edwards, and also to one by Dr. Reginald Morton illustrating the condition of calcaneodynia, or "painful heel." Several other papers are contributed of special interest to radiologists, and the reviews, its sound notes and abstracts from current literature, make the publication a thoroughly useful one to the medical profession as a whole.

The Military Surgeon (Chicago, U.S.A.). July, 1914.—Major F. W. Williams, Medical Corps, U.S. Army, reports an interesting case of identification by finger prints. The completely decomposed body of an unknown soldier was found lying in the woods in Texas. Only the nails and a little shrivelled skin of the feet and hands remained, the epidermis had been shed, but the markings on the dermis of the finger tips could be seen. Perfect moulds of the ends of the fingers were made with dental guttapercha and sent to the adjutant-general, who was able to conclude the remains were those of a man who had deserted two months before. Captain Craig and Captain Lambie report in the same issue a sanitary survey they made of an Indian village in Alaska. The population was 170: 51 men, 62 women, 57 "children," who were boys under 20 and girls under 18. The small number of "children" proves that the race is dwindling rapidly, and even of the 57 "children" only 21 were robust. The older women past child-bearing had averaged seven children each; of the younger women a quarter suffered from inflammation of the uterus or appendages. One-third of the men, one-quarter of the women and children have tuberculosis. Seven cases of congenital dislocation of the hip are reported, two of them double, pointing to elementary management of labours. That is not stated. The houses were poor and insanitary, generally of two rooms only with a family living in each. The article closes with an appeal for help to save this dying race, particularly by teaching them trades, so that they may become self-supporting.

Rivista Neurologica. Periodico Mensile per i Medici Prataci. Edited by Dott. CAMILLO NEGRO, Professor of Neuropathology of the University of Turin. Via Quattro Marzo, 11. Torino.—We have received the second number of the first year of this new periodical, devoted to the study of nervous diseases. The editor, in an address to readers, claims to be the first in Italy to refuse to accept for insertion the advertisements of foreign pharmaceutical firms, and on the strength of this he appeals to the medical profession for adequate support. The current issue contains an article by Dr. A. Salmon, of Florence, on the mechanism of hysterical phenomena. The most prominent factors he considers to be the importance of the emotions, the impulsive and plastic power of the ideas whereby they are translated into corresponding acts or into bodily phenomena, such as are rarely observed under normal conditions, the special suggestability of the patients, and, lastly, the purely automatic mechanism by which hysterical acts are manifested—i.e., the indifference, disinterest, and adaptation shown by patients towards their illness almost as if these interfered with functions which did not belong to their own personality. The editor continues a paper which was commenced in the first number on his method of re-educating movements in tabetics by means of exercises with bandaged eyes. Dr. Roasenda makes a communication on certain forms of post-hemiplegic tremors, and the present number concludes with a report of the meetings of the Piedmontese Neurological Society.

AN OFFER OF A MEDICAL LIBRARY.—The Hunterian Society has decided to part with its library of medical and some scientific works. The collection was formed during the first half of last century, with later additions, and includes ancient medical classics, some rare volumes, and many large atlases and other illustrated medical works, besides series of transactions and journals. There are approximately 3000 volumes, and the original cost to the society is said to have been about £3000. The society would like to give the books to a medical faculty or college which is desirous of forming a library. Further particulars will be found in our advertising columns.

THE
BRITISH MEDICAL ASSOCIATION.

EIGHTY-SECOND ANNUAL MEETING AT ABERDEEN.

ON Friday, July 31st, the Degree of Doctor of Laws *honoris causâ* was conferred by the Senate of the University of Aberdeen upon Dr. Archibald E. Garrod, physician to St. Bartholomew's Hospital; Sir John Bland-Sutton, surgeon to the Middlesex Hospital; Mr. T. Jenner Verrall, chairman of the Representative Body of the British Medical Association; Mr. William Thornborough Hayward, honorary physician to the Adelaide Hospital; and, *in absentia*, upon Sir Victor Horsley, consulting surgeon to University College Hospital. The special graduation ceremony was held at mid-day in Marischal College.

The forty-fifth annual breakfast by the Scottish and National Temperance Leagues to the British Medical Association took place on Thursday morning, July 30th, when a large company was presided over by Mr. A. P. Forrester-Paton, President of the National League, in Trinity Hall, Union-street. Those who also addressed the gathering were the Lord Provost of Aberdeen, Mr. John Turner Rae, Sir John Collie, Mr. W. McAdam Eccles, Dr. Alexander Scott, and Mr. T. H. Bickerton. The Chairman, in the course of his welcome to the medical guests, said that temperance reformers were delighted that the searchlight of science had been brought to bear upon this movement. The wider the scope of investigation and the keener the criticism the better it would be for the cause of temperance.

The annual dinner of the British Medical Association was held in the Music Hall on the evening of July 30th, when Sir Alexander Ogston, President of the Association, occupied the chair, and was supported by a company of nearly 400. After the loyal toasts had been honoured, Mr. T. Jenner Verrall proposed "The City and University of Aberdeen," remarking that the health of each meant the prosperity of the other. Lord Provost Maitland replied on behalf of the city, and Principal George Adam Smith on behalf of the University. In the course of an eloquent historical review of the medical worthies of Aberdeen, the Principal pointed out how many of their number had combined with the faithful performance of their medical duties the cultivation of the Muses. Long might this be so, he said, amid applause, for literature had that to give to medicine, and medicine had that to give to literature, which neither could derive from any other source. The toast of the British Medical Association was submitted by the Bishop of Aberdeen and Orkney in terms of warm appreciation for the work of the medical profession, and was suitably acknowledged by Dr. J. A. Macdonald, chairman of Council, and by Mr. W. T. Hayward, chairman of the Australian Federal Committee, who uttered a warning against the dangers of commercialism in medical practice. The health of the guests was proposed by Dr. John Gordon and responded to by Professor Nicol, moderator of the Church of Scotland, and Professor Pontoppidan, of Copenhagen. The concluding toast, that of the President, which was proposed in memorable phrases by Sir William Osler, was honoured with much enthusiasm and to the music of the pipers. A very enjoyable evening closed with Sir Alexander Ogston's acknowledgment and the singing of "Auld Lang Syne." Dr. William Brown, honorary secretary of the dinner committee, must be congratulated on the success which attended his efforts. During the course of the evening the Ulster cup, which is yearly competed for by medical golfers upon some course adjoining the seat of the annual meeting, was presented to Dr. D. Barty King, of London, this year's winner.

On July 30th Sir Alexander Ogston was entertained at the Grand Hotel to luncheon by his former house surgeons and dressers at the Aberdeen Royal Infirmary. Sir James Porter, late Medical Director-General of the Navy, presided over a company of 80, and proposed the health of their guests in affectionate terms. He said that Sir Alexander Ogston was the first pioneer of distinction to deal with the medical conditions prevailing in the navy and army in modern times. That work had been done without fee or reward, but the rich experience gained by their guest in the Soudan and in South Africa, and so ably presented before the Royal Commission on the Army and Navy, had certainly led to the present excellent state of affairs in the medical services of the Crown. Sir Alexander Ogston, on rising to reply, was enthusiastically received. He spoke of the strong and lasting attachment cherished by its graduates for the University of Aberdeen, in spite of the somewhat cold and hard manner in which, like all Scottish Universities, it dropped them out of the nest directly they were fledged. He modestly suggested, amidst cries of dissent, that although it was delightful to have nice things said about one, they were that day expressing their kindly feelings towards the old university of which he was just the symbol. The gathering broke up after Sir William Milligan had proposed the health of the chairman, who in turn thanked the honorary secretaries of the luncheon, Dr. Cook and Dr. Sinclair.

On Wednesday morning three Church services were held, the official ceremony taking place in the West Parish Church. There were good congregations also at the Episcopal Cathedral (St. Andrews) and at the Catholic Cathedral (St. Mary's). The procession from Marischal College to the West Parish Church was watched with a good deal of interest by Aberdeen residents. The magistrates and members of the town council were in their official robes, and the members of universities wore academic dress. During the services collections were made on behalf of the Royal Medical Benevolent Fund.

It is generally agreed in Aberdeen that not since the great gathering at the celebration of the quatercentenary of the University eight years ago has there been such a big assembly at a social function in the city as was seen on the evening of July 29th in Marischal College, when the University authorities entertained the medical visitors and many others at a reception. The academic costumes worn by a large proportion of the men present quite filled the eye, making the ladies' dresses seem drab by contrast. Other occasions on which academic dress was worn were the President's address on July 28th, the three religious services on July 29th, and the graduation ceremony and reception by the Aberdeen branch of the Association on July 31st. A social function which was much appreciated was the large garden party given by the Lord Provost, magistrates, and town council in Duthie Park on the afternoon of July 29th.

The first visit of the Association to Aberdeen was a great success. The local and central arrangements were excellently organised and a generous measure of hospitality was provided by the medical profession of Aberdeen and neighbourhood, by the University and civic authorities and many other public bodies, as well as by private individuals not immediately connected with medicine. As in former years, it is our pleasant duty to conclude these brief notes with an acknowledgment of the courtesy and assistance shown to our representatives by the editorial and executive staffs of the British Medical Association and by members of the local medical committee.

ANNUAL REPRESENTATIVE MEETING.

THE Annual Representative Meeting of the British Medical Association opened in the Mitchell Hall of the Marischal College, Aberdeen, on Friday, July 24th, and continued until the following Tuesday. Mr. T. JENNER VERRALL presided.

At an early stage Principal GEORGE ADAM SMITH and the President-elect, Sir ALEXANDER OGSTON, K.C.V.O., attended to welcome the representatives to Aberdeen, and Principal Smith had a special word of greeting for those old students of medicine in Aberdeen who found themselves once more in their *alma mater*.

Financial questions and many matters of detail concerning the business of the Association occupied practically the whole of the first day. The treasurer, Mr. E. Rayner, accepted a suggestion that now the increased subscription had placed the Association in a better financial position the wages of the office staff should be revised. At the same time he defended the administration from charges of extravagance, and denied that unpaid subscriptions or subscriptions in arrear represented an unduly large sum.

The Chairman of Council accepted a proposal that it be referred to the Council to consider what steps were necessary to secure that the British Medical Association should become a federation of medical bodies formed for the purposes of special sections of the profession. There was a somewhat desultory discussion with regard to the conduct of the *Journal* of the Association, but ultimately the report of the Journal Committee was approved.

Strong sympathy was expressed with the petition to Parliament of Sir Ronald Ross for remuneration for his services to the Empire in connexion with the discovery of the cause of malarial fever, and a resolution on the subject was ordered to be sent to the Chancellor of the Exchequer.

The meeting adopted the following resolution:—

> That every medical practitioner who contributes to or in any way assists in the preparation of any publication on medical subjects intended for the use of the public must hold himself responsible for any undue or improper advertising that may take place in connexion with such publication, and also for the scope and distribution of the work.

The Representative Body reaffirmed its support of the State registration of nurses, and instructed the Council to confer with the British Dental Association as to the best means of combating the evils of unregistered dentistry.

The second day was devoted to the consideration of the proposed establishment of a special fund to protect the interests of the profession, and with this the correlated question whether the fund should be administered by a trust or a trade union. It did not take the meeting long to decide that a fund should be formed; the dissentients were largely out-voted. The suggestion that the administration should be in the hands of a trade union, however, found little support, and attention was concentrated on a proposal that a trust method should be adopted, members of the Council of the Association to act as trustees. The difficult point in this connexion was whether the funds of a trust would be as safe from attack as are those of a trade union, and on this point the solicitor, Mr. W. E. Hempson, laid it down that it was not registration that made a body a trade union, and his view, supported by other opinions of great weight and authority, was that an unregistered body which exercised the powers of a trade union could plead Section IV. of the Trades Disputes Act and could get protection under it. On this assurance the meeting decided upon the trust method of administration, and a provisional committee was formed to take the initial steps to establish the fund.

A model scheme submitted by the Council as the basis upon which arrangements for the treatment of school children could be accepted by the profession encountered considerable opposition because representatives of the metropolis said that better terms than those the Council declared should be the minimum had been obtained in London, and they did not want a standard to be fixed which was below what had already been secured. The difficulty was overcome by describing the model scheme as the "minimum" policy of the Association and pledging support to local schemes which might be superior.

National Insurance business was taken on Monday, when a model scheme for the treatment of tuberculosis was considered. Relations with staffs of voluntary institutions proved a point of difficulty, but the principle was laid down that public money received for treatment in voluntary institutions should belong to the medical staffs, to be disposed of as they decided.

In regard to the proposed federation of panel committees in coöperation with the British Medical Association, as the constitution of the proposed new body had not yet been approved by its constituents, it was agreed to hold a Special Representative Meeting to consider this question in order that the matter might not be delayed 12 months.

The Non-panel Committee brought forward a resolution that "contracting-out" with practitioners not on the panel should be facilitated. The promoters explained that they only wanted to meet individual cases of hardship, but the meeting did not give sufficient support to the motion—a two-thirds majority being required. Urgent representations were made by the profession in Wales that such a resolution would be taken advantage of by medical aid institutes.

On Tuesday the atmosphere of debate became charged with excitement when Mr. R. M. BEATON (St. Pancras and Islington) invited the Representative Meeting to re-state the view it expressed 18 months ago that the Insurance Act was "derogatory to the profession and against the public interest." The mover described this resolution as an olive branch held out by the non-panel practitioners, and he appealed to the meeting to come to a definite decision, one way or the other, on the question. Subsequent speakers, however, declined to accept the resolution as a peace-offering, and condemned it in unmeasured terms as an insult to that half of the membership of the Association that had accepted service under the Act. Mr. C. G. MEADE (Scarborough and York) eased the tension by an amusing and terse summing up of the position. "Let bygones be bygones," he said, and added plaintively, "What is the use of digging up the corpse and giving it oxygen?" Following the laughter which greeted this sally, Dr. J. A. MACDONALD (chairman of Council) moved that the meeting proceed to the next business, and this was carried.

It was decided to consult the contributors to the Special Defence Fund raised during the Insurance Act campaign and then to close the fund.

Resolutions defining the position of the profession on various points of difficulty in connexion with insurance administration were passed.

Dr. WALLACE HENRY (Leicester) proposed a resolution urging panel committees to make a regular examination of chemists' accounts. He declared that if this were done it would be found that very little foundation existed for charges against the medical profession of extravagant prescribing; the fault lay with the anomalies of the drug tariff. The resolution was adopted.

Resolutions were passed approving generally of the Budget proposals for the establishment of centres of coöperation for practitioners on the panel, provision of nursing aid and clinical laboratories, and it was laid down that the staffs of voluntary institutions could not be expected to treat as charitable cases persons on whose behalf the State made a contribution, also that the clinical arrangements should be administered by a new authority composed of representatives of insurance and public health authorities with representatives of panel committees and the local hospitals, or be administered by the Insurance Committees strengthened by the addition of representatives of the other bodies named.

The scheme for the establishment of a Scottish office of the Association was approved; there was some competition as to the city in which it should be located, but it was decided ultimately that Edinburgh should be selected, being both the seat of government and the headquarters of the Insurance Commissioners for Scotland.

THE SECTIONS.

MEDICINE.

WEDNESDAY, JULY 29TH.

President, Professor F. J. SMITH (London).

Dr. HARRY CAMPBELL (London) opened a discussion on

Headache.

He defined headache as pain felt anywhere within or above the base of the cranium, and spoke of the structures contained within this area as the "cephalic area." He referred to the numerous cephalic conditions which might occur in association with headache (such as a feeling of pressure or constriction, heat, cold, irritation, numbness, bursting), and which the patient might find difficult to dissociate from the actual pain. He endeavoured to explain why headache is the most common of all pains. Cephalic structures are liable to disease—for example, from within and without. The aponeurosis especially is a site of sensory changes—e.g., pediculi; similarly, undue traction of the hair or hard hats. Other causes are proximity to the fifth nerve, nose, eyes, and mouth; abdomino-parietal viscera from the vagal sensory fibres, and the clinical association of the special sense centres. In dealing with the classification of headaches, he contended that it was impossible to make a satisfactory classification of headaches according to their symptomatology, that the wiser plan was to regard headache as a symptom and to base our classification of headaches upon causation. Among the causes he mentioned organic disease, external irritation, and reflex causes. Amongst causes, too, he emphasised morbid blood states. Special mention was made of the part played by defective digestion in stomach, liver, and bowel in the causation of headache, and the speaker insisted upon the importance in cases thus arising of regulating the diet. The best diet was one the patient could best digest, the golden rule being to eat moderately of simple food, and to chew it thoroughly, especially the farinaceous portion of it. Some sufferers from migraine were improved by diminishing the amount of animal food consumed, but in most cases the better plan was to reduce the carbonaceous input, especially starch and sugar. Dr. Campbell insisted that the idea that animal food is injurious to man is altogether groundless, the fact being (as he had elsewhere contended) that man owes his present exalted position in the animal scale to his carnivorism, for it was the search after animal food which led man's anthropoid precursor to abandon the arboreal for a terrestrial life, and it was the condition entailed by a hunting career which determined the evolution of the anthropoid into man. He pointed out that until quite recently in man's evolutionary career his supply of sugar was limited to wild honey, and his starchy food to what he could obtain from the uncultivated vegetable kingdom, and that in point of fact the present-day physician had more to fear from an undue consumption of sugar and ill-masticated starchy food than from an excess of animal food.

Dr. C. O. HAWTHORNE (London) was sceptical as to the use or meaning of the term "alimentary toxæmia." He referred to the value of leeches applied over the temples for headache, and also noted the importance of a careful ophthalmoscopic examination and in some cases an analysis of the cerebro-spinal fluid as well. Such routine would favour the early diagnosis of headache due to cerebral tumour or increased intracranial pressure.

Dr. L. H. PEGLER discussed the subject of headache from the rhinologist's standpoint, stating that the term "nasal headache" might be used if it were kept in mind that no pain in the head was characteristic of any one nasal lesion; also that some headaches were nasal in a partial sense only because they arose indirectly from the nasal source—i.e., through the intervention of blood changes. He touched upon headache which was oculo-nasal in character owing to the dual distribution of the ophthalmic nerve, when the rhinologist often held the key to the situation, because neither headache nor eye affection would disappear till the nasal lesion were treated. The speaker classified nasal headaches into (1) those due to non-inflammatory causes—direct pressure of hard surfaces, as, e.g., septum against turbinate, middle or inferior; (2) chronic inflammatory—degeneration of mucous membrane—soft contacts, with obstruction; and (3) an inflammatory group including the various forms of rhinitis. After reviewing the diagnosis, mechanism, and treatment of nasal headache, the speaker concluded by alluding to the value of the submucous resection of the septum as conservative of the turbinates and highly effective in reducing pressures and obstruction.

Dr. F. C. EVE (Hull) said that too high pressure of the cerebro-spinal fluid caused headache, as did also sometimes too low a pressure, seen, for example, in the headache which occasionally follows the withdrawal of the fluid. Neuritis of the occipital nerve may cause headache. Such a condition could be detected by the presence of areas of tenderness and anæsthesia over its distribution. He referred to an intractable case of this nature which yielded to salicylate ionisation continued for three months.

The PRESIDENT alluded to the value of mercury in headache due to syphilis, especially when given by inunction.

Dr. CAMPBELL briefly replied.

Splenectomy.

Dr. J. S. MCKENDRICK (Glasgow), in opening the discussion, referred briefly to the functions of the spleen. It acted to some extent as a scavenger of the blood, enabling it, too, to retain its due proportion of iron. On occasion, however, such as after its removal, the lymph glands can equally well take up its duties. The earlier operations of splenectomy were associated with a high death-rate. Previous to 1886 the mortality in a series of cases was 70 per cent.; after this time, with improvement of technique, it fell to 16 per cent.; and lately in a series of 27 cases reported by Giffen only 7·4 per cent. died as the result of the operation. In relation to splenectomy for splenic anæmia, the important point was to operate early; when the Banti syndrome had set in, with its liver changes and the ascites, the death-rate was much higher. In certain cases of secondary anæmia removal of the spleen may be followed by good results. In all severe anæmias it is of value to examine the condition of the bone marrow. He mentioned in detail the clinical features of a case of splenomegaly in a child aged 8. The blood count immediately following the operation of splenectomy was striking. The red cells increased from 2,500,000 to 4,650,000 the day afterwards, and the white cells rose to 34,000. Later no further marked changes in the blood occurred and the patient was quite well two years afterwards.

Professor Ll. C. P. PHILLIPS (Cairo) referred to the value of benzole introduced by Pappenheim. In a series of 8 cases 6 did very well. In a series of 25 cases of leukæmia also there were 21 good results, and this applies also to cases of lymphatic leukæmia. The spleen in these cases becomes appreciably smaller. Some caution is necessary in giving the correct doses of benzole. It is possible to work up to 6 grammes, and this was done, on one occasion in a child aged 10. He gave some details of a case which he claimed was one of Banti's disease in association with diabetes. There was ascites, and the sugar in the fluid reached 0·5 per cent.; in the urine there was 2 per cent. of sugar. At the necropsy the liver showed well-marked cirrhosis, and the spleen weighed 460 grammes. In Egypt, Professor Phillips mentioned, splenomegaly was very common, and they were accustomed to class such cases as Banti's disease.[1] No organism could be found in them. The indications which they followed as regards treatment were three: (1) never operate if the liver appears to be involved; (2) improve the anæmia as much as possible before operation, if due to ankylostoma remove the parasite first; and (3) do not operate if there is a high degree of leucopenia.

Professor Sir WILLIAM OSLER (Oxford) said that clinical experience had enabled the profession to recognise certain groups of cases in which splenectomy could be done and other groups in which it was contraindicated. In the latter class should be placed all cases of leukæmia; no good results had followed here; also cases where the spleen is enlarged but there is also disease of the liver; and in syphilitic enlargements of the spleen. As regards the latter group, however, it was possible that splenomegaly of congenital specific origin in children might be successfully treated by splenectomy. Splenectomy is indicated in the following three types of case. 1. Where the spleen is enlarged for years but associated with good general health. The benefit of operation accrues because such cases, if untreated, often go on to a chronic anæmia; there may also be leucopenia, enlargement of the liver, and even jaundice and ascites. 2. In some cases of Banti's disease. 3. In children in those cases in which the splenomegaly was acute and progressive. There remained, in conclusion, a doubtful series of cases in which removal of the spleen may do good, such as some progressive forms of pernicious anæmia, Addison's disease, hæmolytic jaundice, kala-azar, and primary tuberculosis of the spleen.

Dr. EDGAR LEA (Manchester) referred to some experimental observations performed upon mice in whom the spleen was removed. The experiments were published in the *Journal of Experimental Medicine.* Mice were inoculated with tubercle bacilli, with the result that they quickly succumbed with general diffuse tuberculous infection throughout the body: a similar proceeding, however, done upon mice whose spleen had been previously removed resulted in a much less severe bacillary invasion. In them the tuberculous foci remained localised, showed little tendency to general infection, and in some animals actual recovery resulted. Similar experiments performed upon cats and dogs, however, were negative. It would probably form a valuable line of research if the properties of the blood were examined in patients both before and after the spleen was removed.

Dr. MCKENDRICK briefly replied.

THURSDAY, JULY 30TH.

Dr. RIST (Paris) opened a discussion on

Artificial Pneumothorax.

After referring to a few points in the technique of the operation, in which puncture has wholly replaced Brauer's incision method, he stated that accidents were infrequent, and he had never yet seen air embolism, so often suggested to be a dangerous complication. Spontaneous pneumothorax was often severe and sometimes fatal. When this is the case it was found that the opposite lung was diseased and the patient died from asphyxia. Improvement occurred if the opposite lung was sound. Thus, all depended on this lung. In the selection of cases suitable for the induction of pneumothorax it is, said Dr. Rist, important to ascertain the condition of the unaffected side. Strictly unilateral disease never occurs. If there is active disease auscultation and percussion alone are insufficient; these methods must be associated with X rays. For instance, deep-seated cavities may miss detection, and râles heard at the apex of a supposed diseased side may in reality be transmitted from disease of the other apex, especially if there is a big cavity. X rays may assist in telling us if disease is active; for this purpose it is necessary to compare plates at successive periods. If all such are identical the lesion is probably fibrotic. The conditions requiring pneumothorax are the following: 1. In severe cases of tuberculosis improvement may follow in a case otherwise hopeless; not seldom cure occurs. 2. Where there are cavities not curable by sanatorium or tuberculin treatment. Cavities limited to one side of the chest are common. It is also certain that they are much more common than auscultation and percussion would have us believe. X rays may find cavities not demonstrable from physical signs. Cavitation, too, may be an early lesion in tuberculosis, the destructive processes being limited for years. These cases are suitable for pneumothorax. 3. In some cases of caseous pneumonia pneumothorax may give a chance to an otherwise hopeless case. Dr. Rist had had several successes. The operation is easy, as there are no adhesions. It may be difficult to cause collapse of the consolidated lung. In these cases it is important to operate early. 4. In cases presenting not extensive but frequent hæmoptysis, pneumothorax may be indicated, even whilst the hæmorrhage is actually taking place. With regard to complications to pneumothorax, Dr. Rist stated that it was often almost impossible to tell whether adhesions would or would not prevent collapse. Pleural effusions occurred in 50 per cent. of cases when pneumothorax had been done; this figure, however, included small and transient accumulations. The fluoroscope showed them beautifully at the costo-diaphragmatic space. The quantity was usually about half an ounce; the effusions usually went or they might be tapped. Usually they developed a few weeks or months afterwards. In many instances, said Dr. Rist, these effusions produce no effects; when there is much fluid it is not possible to inject so much nitrogen; the gas can, however, be injected at longer intervals. Withdrawal of fluid is indicated when the pleural cavity is more than half full or when there is displacement of the heart. In such cases the fluid may be removed entirely together with a nitrogen injection. The fluid always contains a few tubercle bacilli; there is also eosinophilia. Pleural effusion is not a serious complication. Dr. Rist concluded by remarking that pneumothorax was not only a powerful weapon for good, but also that it afforded a promising field for scientific research. It is possible, for example, to determine changes in states and dynamic relations of the chest organs. The movements of the diaphragm showed valuable modifications. There was inspiratory displacement of the heart to the pneumothoracic side of the chest. The amplitude of the heart-beats, too, was increased on the pneumothoracic side, but there appears to be no effect upon the diastole of the heart. Finally, spirometric observations could give useful information.

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[1] THE LANCET, March 7th, 1914, p. 696.

Dr. H. DE C. WOODCOCK and Dr. J. A. M. CLARK (Leeds), speaking of experience of many cases in a paper on this subject, referred to some of the practical considerations of the operation of pneumothorax. The point of selection is, they said, in the axillary line over a resonant area. Of accidents there are few: air embolism they have never met; oscillations of the manometer indicate entry of the needle into the pleural cavity. Sometimes shock may be present; there may be cyanosis and pain. The removal of some gas from the pleural cavity may relieve the condition. Oxygen may be given instead of nitrogen in some cases. With frequent repetitions the site of the tapping must be changed. For hæmoptysis the writers favour pneumothorax in some cases.

Mr. G. LUCAS (Banchory) remarked that the name pneumothorax was unfortunate, as patients, often retrospective, were apprehensive of the operation. He suggested the name "nitrogen compression" might be more suitable. Favouring the operation in selected cases, he referred to such as being those in whom, in unilateral cases, sanatorium treatment for four months had been of no marked avail.

Dr. EVE referred to the fact that after pneumothorax had been induced in a febrile case there may occur some increase in the extent of the tuberculous processes on the sound side. He mentioned some points which allow one to simplify the apparatus on emergency, even on occasion dispensing with a manometer.

Dr. CLIVE RIVIERE (London) remarked the difference of attitude adopted by British physicians as compared with physicians on the continent to the operation. In this country much too little had been done. One-sided lung lesions were more frequent than imagined if carefully sought for. In a caseous case with extensive cavitation on one side a partial pneumothorax was done. In two days râles appeared on the sound side and the patient died from pulmonary œdema. This was a complication due, he thought, to possible circulatory embarrassment. At the operation he favoured in the first instance the use of a blunt cannula.

Dr. W. M. CROFTON (Dublin) disagreed with Dr. Rist's statement that cavities could not heal, and with the view that the caseous types of tuberculosis were necessarily fatal. Most lung conditions were mixed infections, and this explained the inefficacy of tuberculin as regards prolongation of life.

Professor Sir W. OSLER emphasised the value of Dr. Rist's work on the subject. Effusion in pneumothorax, he said, is probably due to lung puncture; effusion is, indeed, always associated with spontaneous pneumothorax. The pulsating pleurisy is explained by the increased extent of the cardiac movements on the pneumothorax side, which Dr. Rist referred to, as seen in the X rays.

The PRESIDENT thought that sufficient stress was, perhaps, not laid in the discussion upon the symptoms, and chief emphasis had been laid upon the physical signs.

Dr. RIST replied.

Rheumatoid Arthritis: Comparison of Medical and Surgical Standpoints.

Dr. D. DURWARD BROWN (Harrogate) referred to his experiences in treatment. Amongst other remedies, such as guaiacol, he had found benefit accrue from blistering of the spine, and, better still, ionisation. He did not consider surgical interference was necessary in many cases.

Dr. G. H. ALMOND (Bath) suggested that though the earlier cases were best treated by the physician, there was also a borderland where physician and surgeon should meet—namely, in cases where there was fibrosis. Manipulation in such cases should be left to the orthopædic surgeon. He emphasised the importance of a full examination of all the joints.

Dr. C. O. HAWTHORNE (London) felt sceptical as to the benefits suggested in many cases of rheumatoid arthritis. He felt that physicians at our spas were, by the nature of the place and the type of patient whom they treated, at a considerable advantage as compared to many practices where experience emphasised a greater degree of intractability.

Some Points in the Course of Epilepsy.

Dr. ALDREN TURNER (London) read a paper on this subject. He said that the treatment of epilepsy remained rather unsatisfactory. Investigation had shown that 50 per cent. of cases were unaffected by bromides; of the remainder, in 25 per cent. the fits were kept in abeyance. In Dr. Pierce Clark's experience, some cases of epilepsy appeared to be cured without bromides. The earlier the onset of the fits under the age of 5, the greater the probability of mental failure. The most favourable types of cases are the following: (*a*) when the commencement of the disease lies between the ages of 16 and 20 years, if good hereditary history or if there is an obvious exciting cause; (*b*) infrequency of fits; (*c*) absence of mental impairment or well-marked stigmata of degeneration; and (*d*) when the fits begin between ages of 40 and 45 in absence of organic nervous disease or alcohol. There is difficulty in defining what is meant by cure; most satisfactory, perhaps, is it to limit the term to the condition of the patient being such as allows him with reasonable comfort and safety to earn his living. Mere number of fits is less satisfactory as a basis of opinion. When mental symptoms supervene the prognosis is graver; when some degree of dementia is present amelioration is seldom possible. The effect of epilepsy upon the mental qualities is serious. In Chalfont, for instance, only 13 per cent. of the patients are mentally normal; in Craig Colony only 17 per cent. There may, in conclusion, be all forms of mental defect—from simple loss of memory to dementia.

Acute Atrophy of the Thyroid Gland.

Dr. F. C. EVE related clinical details of a case of a woman, aged 40, who for six years had typical exophthalmic goitre. During this time she had shown great variation in the character of her symptoms. For the last three years of her life she had been subject to influenza each spring, followed on each occasion by a week or two of "thyroid fever." Her last illness began with follicular tonsillitis, and ended after 17 days with lobar pneumonia. On the fourteenth day diarrhœa and vomiting started. Next day the thyroid gland, which had previously been conspicuous, measuring 4 inches across, was noted as very small, and for several hours before death it was impossible either to see or feel any trace of it. No post-mortem examination was made. It was suggested that cytolysis of the gland must have occurred similar to that in acute yellow atrophy of the liver. Dr. Eve mentioned a similar case under the care of a medical friend.

FRIDAY, JULY 31ST.

Chronic Pulmonary Tuberculosis in Children.

A combined discussion was arranged upon this subject, in which the sections of Medicine, Electro-therapeutics and Radiology, and Diseases of Children took part. Dr. F. J. SMITH (President of the Section of Medicine) occupied the chair.

Dr. DAVID B. LEES (London) opened the discussion. He remarked at the outset the importance and practical value of determining the presence of tuberculosis in children. For this purpose he laid particular stress upon the value of percussion and auscultation, with the findings from which should be associated the results of radioscopic examination. It is important to secure relaxation of the muscles covering the thorax and to offer suitable counter-resistance. Percussion should be light, not heavy. When this is correctly and carefully carried out, qualifications upon which Dr. Lees laid considerable stress, he maintained that it was possible to map out with considerable accuracy certain areas of dulness if tubercle was present. These are, he said, situated in the apices over areas close to the roots of the lungs, and at sites distributed near the apices of the lower lobes. (These positions were demonstrated on a diagram.) It is usual to find the earlier signs on the right side; in no cases have signs been of greater intensity on the left side when both sides are affected. The explanation of the fact is obscure, but probably rests upon anatomical grounds, concerned particularly with the pulmonary artery. X ray confirmation of the conditions suggested by these signs is positive in practically all cases. For the latter method of examination Dr. Lees laid emphasis upon the need for plates; the screen alone often failed to give good results. The drawback of the X rays in this relation is, he said, that they do not give reliable information as to whether the disease is active or latent. For this purpose it is of value to estimate with care, at repeated intervals of time, the area of dulness. This may be measured in a readily practicable manner by fingerbreadths. When the area is increasing in extent the disease is advancing, and *vice versâ*. The signs of auscultation are less reliable—there may be prolonged expiration or, more often, deficient air entry. Consideration of percussion signs affords valuable data with regard to prognosis. It is possible, by keeping a chart of the patient's physical signs, to form an opinion as to whether the disease is advancing or receding. Dr. Lees exhibited diagrams which showed lessening of dulness at definite areas in a clinical case in which progressive improvement occurred. He further said that in some clinical cases, though weight might be increasing and the general condition apparently good, the extent of dulness might nevertheless be increasing, and if this were the case, despite the general apparent wellbeing, a guarded prognosis must be given.

Dr. Clive Riviere, after referring to the value of Dr. Lees's observations, suggested that they required considerable care for their detection, and that many of the signs occurred in patients, usually adults, but in whom there was no reason to suppose the disease was active. Also, there were other general signs which might often give useful information. He stated that it was advisable to consider apical tuberculosis and hilus tuberculosis as clinically very distinct conditions; the latter was essentially tubercle of the lymph glands, which, as it happened, was situated in the thorax. In the latter condition it is not necessary, said Dr. Riviere, to wait for the presence of râles before tuberculosis can be diagnosed; indeed, râles heard over the root area are uncommon. Dr. Riviere described a new sign which he had not seen hitherto noted, and which he believed to be of some assistance in the diagnosis of hilus tuberculosis. This was an area of impaired resonance extending outwards from the vertebral line mainly to the right at the level of the fifth to eighth dorsal vertebræ. Its outward border may be well defined and reaches several inches from the middle line. In spite of all methods of examination, however, he thought that there remained a considerable number of cases in which diagnosis appears to be rather uncertain.

Dr. Ironside Bruce (London) mentioned some points concerning the X ray evidence. He agreed with Dr. Lees in that it was essential before coming to a diagnosis to consider not only the X ray findings but also the clinical symptoms. He thought that with the X rays much information could be gained by screening as well as by the photographic plate. In some instances he believed it possible to suggest from the X rays whether the disease was active or latent.

Dr. D. Lawson (Banchory) asked for some information from the radiologist. He wanted to know what value was attached to the method of transillumination which lighted up with inspiration certain dull areas; also limitation of the extent of diaphragmatic movement was in adults a valuable suggestive sign of tuberculosis in some cases; this was especially the case on the right side. Did the different relative diaphragmatic movements in children affect the inferences which might be drawn from such limitation as it occurred in adults?

Dr. C. McNeil (Edinburgh), commenting on the frequency of the signs of tuberculosis as stated to be found by physical signs, suggested that such evidence pointed to tuberculosis being universal, but upon this point the tuberculin test did not give wholly unequivocable confirmation.

Dr. F. Langmead (London) confessed that as yet an assured diagnosis of chronic pulmonary tuberculosis was still difficult of attainment. The results of tuberculin tests could not be taken as affording conclusive evidence as to the general incidence of tuberculosis.

Dr. Eve referred to the suggestion made that the presence of small enlarged lymphatic glands in the neck indicated apical tuberculosis. His own observations went to prove that no such relation was present. In his own clinical experience in connexion with a children's hospital some of the cases suspected of root tuberculosis were taken in as in-patients and treated as tuberculous patients. They invariably improved, but one always felt in one's own mind some doubt as to whether the diagnosis was correct in so far as being sure that definite active tuberculous mischief was really present. These cases never came to the post-mortem room. In a few cases in children he had seen typical caseous general tuberculosis; this was, however, infrequent.

Dr. Barty King (London) criticised the views put forward by certain radiologists that tuberculosis of the lungs spread from the lymphatic glands at the roots. He thought it more probable that the lymphatic gland infection was often secondary. He mentioned the features emphasised by the radiologist in this relation—namely, the striations radiating out from the root and which are held to be indicative of peribronchial thickening of tuberculous origin. As it happened, a case of this nature which had shown this condition by X rays came to necropsy. A careful examination was made of the lungs and the peribronchial tissues, but no trace of tubercle could be found. The very careful pathological work of Ghon (Prague) was also opposed to the lymph gland origin of pulmonary infection. The work of this authority he was at the present time engaged in translating.

Dr. F. J. Smith said that they had heard a lot about physical signs but little as regards symptoms. He deprecated the instruction given to patients leaving sanatoria that they should take their own temperatures. He maintained that loss of appetite or lassitude constituted valuable indications.

Dr. Lees replied. He denied that tuberculosis was universal, and said that there were many people who did not present the physical signs to which he had directed attention. He deprecated the persistent administration of tuberculin, and narrated a case in which he claimed that its administration had been followed by disastrous results.

Transient Babinski's Sign and its Bearing on the Nature of Hysteria.

Dr. Eve said that it was known that Babinski's sign (extensor plantar reflex) when present in adults indicates organic disease of the pyramidal tract. There is, he said, only one group of exceptions to this rule—viz., that a fleeting Babinski sign is present during or after the coma, fit, or paralysis resulting from uræmia, eclampsia, epilepsy, or poisons such as alcohol, anæsthetics, &c. Consider, for example, a case of uræmic hemiplegia, showing a Babinski sign on one side and contrast it with a case of hemiplegia due to hysteria. Both are functional diseases, and yet one shows by the presence of a Babinski sign that the pyramidal tract is not doing its duty. Surely the conclusion is irresistible that in the hysterical hemiplegia the pyramidal tract is not affected, and that the seat of the hysterical paralysis is at some level higher than the pyramidal cells. He submitted that this piece of evidence exculpates the cord and pyramidal tract and incriminates the higher levels of the brain in hysterical paralysis. To show that this is not the current view he referred to the most recent neurological text-book he had (Judson Bury, 1912), which says: "Hysteria is a psychic disorder which is apt to produce disturbances in the spinal cord and sympathetic system." By Dr. Eve's thesis the spinal cord is entirely innocent. It may be urged that hysterical paraplegia is surely a spinal cord disease rather than a symmetrical bilateral cerebral monoplegia which otherwise has to be assumed. His thesis insists on the latter view. Moreover, to postulate symmetrical cerebral involvement in hysteria is by no means unreasonable. Finally, the fact that Babinski's sign is present for a few hours after epileptic fits and never after hysterical fits may be useful in distinguishing the two diseases, especially in workmen's compensation cases.

ANATOMY AND PHYSIOLOGY.

WEDNESDAY, JULY 29TH.

The proceedings of the section opened by the members voting Professor J. A. MACWILLIAM (Aberdeen) into the chair. He then called on Dr. N. J. CALDER (Aberdeen) to read a letter from the President of the section, Professor R. W. REID (Aberdeen), regretting his inability to be present at the meeting. Professor MACWILLIAM then introduced the reporters to the meeting.

Dr. JANE I. ROBERTSON (Glasgow) read the first paper on

(1) *The Phylogenetic Development of the Bulbar and Ventricular Septa of the Heart.*

Some notes were given on the progressive development and association of the bulbar and interventricular septa in elasmobranch, dipnoan, reptilian, and mammalian hearts. These septa appear in association with a pulmonary system and the consequent need for the separation of the oxygenated and non-oxygenated blood-stream. The complete anatomical and physiological subdivision of the bulbus and of the ventricle is ultimately achieved in the mammalian heart.

(2) *Cardiac Malformations in which the Great Efferent Vessels arose from the Right Ventricle.*

Dr. Robertson reported two cases of cardiac malformation where the interventricular septum was placed on the left of the aorta and pulmonary artery, both the great vessels then opening directly out of the right ventricle. These specimens seemed to point to the conclusion that the closing of the interventricular septum round the left or the right side of the aorta was largely determined by which of two paths happened in the presence of other malformation to be the shorter.

Dr. IVY MACKENZIE (Glasgow) then read a paper on work done in association with Dr. Robertson entitled

Further Researches on the Anatomy of the Bird's Heart.

Dr. Mackenzie stated that although in earlier work they had not been able to show any specialised sino-auricular tissue or bundle of His in birds' hearts, he was now able to report that they had been able to demonstrate a definite muscular connexion between auricle and ventricle in the hearts of certain birds. Work had also been done by Dr. Mackenzie on

The Reptilian Heart and its Significance in the Interpretation of the Coördinating Muscular Systems in the Mammalian.

It was reported that in certain reptilia direct continuity was found from the sino-auricular node, round the left duct of Cuvier to the auriculo-ventricular muscle, but in higher reptilia it was not able to show any connexion between the sino-auricular ring and the auriculo-ventricular part. With regard to mammalian heart the auricular or governing tissue was spread out in a thin layer over the inside of the ventricle, it was contended that one part of the ventricle could not be said to contract before another.

In the discussion that followed Dr. T. LEWIS (London) took part, and Professor MACWILLIAM said a few words of appreciation of the type of work done by Dr. Mackenzie, especially in relation to its clinical application.

Professor MACWILLIAM read a most interesting paper, the subject of which was

Cardiac Fibrillation and its Relation to the Action of Chloroform.

It was pointed out that fibrillation occurred in two phases: at an early stage of chloroform administration, and at a final stage when the heart was dilated and exhausted. Great stress was laid on the fact that diminished sensibility seemed always to be associated with fibrillation, with or without dilatation of the heart. The acapnia hypothesis put forward by Young Henderson had been found not to meet the facts; but sudden administration or sudden increase in strength of the chloroform caused fibrillation. Cats seemed to be peculiarly sensitive in this respect. Nine out of 16 cats succumbed during light anæsthesia with intermittent administration of chloroform. The conclusion was warranted, therefore, that fibrillation caused early chloroform collapse in cats and probably also in man.

Dr. A. GOODMAN LEVY (London) agreed with the substance of Professor MacWilliams's paper, and was particularly interested in the fact that diminished excitability was associated constantly with fibrillation.

Dr. LEVY then read a paper on

Ventricular Fibrillation, the Cause of Death under Chloroform,

in which he criticised Snow's hypothesis that death under chloroform was due to overdose. On investigation it was found that out of 98 cases of death during chloroform anæsthesia, practically all the patients were described as being under light anæsthesia. It was concluded that there was no danger during chloroform administration provided the vapour was given in sufficient concentration and continuously.

Dr. G. S. MELVIN (Aberdeen) reported

Some Observations on Blood Pressure

made by himself and Dr. J. R. MURRAY (Aberdeen), and was warmly congratulated by Professor MACWILLIAM and Dr. J. M. MCQUEEN (Aberdeen) on the substantial and important results which they had obtained.

Professor MACWILLIAM read a paper on

The Regulation of the Heart Beat,

commenting on the influence of pressure, temperature, and nerve on the beat. Professor MacWilliam also showed tracings illustrating inversion of the vagus action.

Dr. LEVY and Dr. MACKENZIE took part in the discussion which followed.

Mr. J. A. STRICKLAND GOODALL (London) reported on

Some Instrumental Variations in the Human Electrocardiogram,

the observations being made with Mr. HEDLEY N. D. RICHARDS (London). Their researches were divided into three groups: (1) instrumental variations; (2) physiological curves with two Einthoven cardiographs and also with an oscillograph; and (3) pathological curves. It was pointed out how widely the tracings differed under varying instrumental conditions, and it was noted that the oscillograph was as reliable as the cardiograph.

Mrs. E. M. TRIBE (London) reported on some researches she had carried out on

The Existence of Vaso-motor Nerves in the Lungs.

In these experiments the lungs of various animals (cats, dogs, and ferrets) were perfused with defibrinated blood after the method of Brodie and Dixon, and the effect of adrenalin in different strengths noted on the flow through these organs. Great stress was laid on the facts that the defibrinated blood must be warmed, the animal must be kept in a bath of warm saline, and the pressure kept between 10 and 20 mm. Hg, so as to have the conditions as normal as possible. With the weaker solutions of adrenalin (0·002 mg. per cent. and 0·0002 mg. per cent.) a constriction showed on the tracings, followed by a dilatation. Strong solutions caused violent constriction only. The experimenter felt drawn on the whole to the conclusion that vaso-motor nerves were present in the lungs, the cause of conflicting evidence due to mistakes in technique—too high pressure being used and no notice taken of temperature.

Mr. GOODALL and Professor MACWILLIAM complimented Mrs. Tribe on her careful work, and Professor MACWILLIAM expressed his opinion that her paper was the most convincing he had heard on the subject.

THURSDAY, JULY 30TH.

In the absence of Professor Reid, Professor J. K. JAMIESON (Leeds) took the chair.

Professor WILLIAM WRIGHT (London) opened the proceedings by giving two papers. The first—

A Histological Study of the Alimentary Canal of the Elephant—was illustrated by microphotographs. These sections included some of the tongue; one of the cardiac orifice showing a valve guarding that orifice, and the tunica muscularis mucosæ passing into the valve, and it was suggested that the purpose of the tunica muscularis mucosæ was to compress the glands and also to control the folds of mucous membrane; a section of stomach showing a lymph nodule, very like a Peyer's patch; one of the pylorus; one of the duodenum; in this section it was pointed out that Brunner's glands were not outside the tunica muscularis mucosæ but were surrounded by a network of that tissue; one of the lower part of the duodenum in which the submucous coat showed a wavy white fibrous tissue containing large ganglia—these ganglia were also shown in sections of the rectum, and attention was drawn to the fact that both parts were particularly subject to reflex action; one of the cæcum showing the longitudinal muscular coat to be very poorly developed in this region; one of the ileo-cæcal valve showing great strength of musculature; one of the rectum in which the tremendous thickening of the longitudinal muscle was pointed out. A section of liver showed that the lobules were not as well marked as in man; it was suggested that being a primitive animal they should be better marked. In a section of pancreas the islets were perfectly distinct.

Professor Wright went straight on to his second paper on

The Temporal Gland of the Elephant.

The temporal gland was taken from a young African male elephant. It was lobulated and had a duct, lined by cornified epithelium, which opened on the surface. The nature of the secretion of the gland was obscure. Elephant keepers associated its activity with a state of great excitement of the animal—probably a sexual excitement—and therefore it was suggested that it might be a secondary sexual gland. It had been described by John Hunter, but no previous microscopical account had been given. Professor Wright showed sections of the temporal gland and also of the nipple of the animal, and drew attention to the similarity between the structure of the nipple and that of the duct of the temporal gland. The ductules and tubules were lined by two layers of cells reminiscent of human mammary, sweat and lacrymal glands.

In the discussion which followed Mr. Goodall thought it strange to have a lymph nodule in the stomach of the elephant, as they were generally more common in carnivora, and expressed surprise at not hearing that Professor Wright had noted lymph nodules in the rectum, as these were very common in herbivora. With regard to the temporal gland, Mr. Goodall had noted a set of superficial glands in mice in connexion with sexual organs. In his opinion the two-layered ductules looked more like sweat than mammary glands. He thought the section of liver showed autolysis.

Mr. R. J. Gladstone (London) asked from what part of the liver the section was taken, as he thought lobulation would be more marked in the centre than on the surface, but information could not be given on this point.

Dr. Calder showed some

Rare Anatomical Anomalies,

including (1) an accessory thyroid gland lying behind the manubrium sterni and pressing on the trachea and œsophagus; (2) several varieties of falx cerebelli; (3) an example of the thoracic duct ending on the right side at the junction of the right internal jugular and right subclavian veins; and (4) an extra lobe in the right lung rather resembling an azygos lobe, but showing no groove for the azygos vein.

A discussion followed in which Professor Wright accounted for the variations in the falx cerebelli by the fact that the brain develops first and the dura mater and cranium later, and any abnormality of the brain would lead to variations in both dura and cranium. He called attention to the fact that the thoracic duct in the elephant ended in the vena azygos major.

Mr. Gladstone demonstrated a specimen of

Congenital Absence of the Left Kidney,

associated with atrophy of the testis, vas, and vesicula seminalis of the same side; the testis showed a condition commonly found in undescended testis. The right kidney was enormously hypertrophied and its weight was double normal. Stress was laid on the fact that it was a pure hypertrophy, not a numerical increase of constituent parts. Microscopically the glomeruli were much larger and fewer in number in any given area than normal. Mr. Gladstone pointed out that there were three conditions under which one kidney only might be found: (1) congenital absence of one; (2) fusion of the two kidneys; and (3) atrophy of one kidney due to disease, and suggested that if such a condition be suspected cystoscopic and X ray examinations should be made, and it should be remembered also that these renal abnormalities were frequently associated with other abnormalities, such as atrophy of one testis, vas, vesicula seminalis, or one ovary and corresponding labium majus, or accessory auricles, club feet, and club hands. It was suggested that the condition was due to failure of the distal end of one Wolffian duct to join with the cloaca and the atrophy of the corresponding mesonephros.

In the discussion which followed Dr. T. K. Dalziel (Glasgow) stated that when operating for suspected carcinoma he found two kidneys, one on top of the other and the two ureters parallel, on the right side of the body. The two organs had no structural continuity. He asked for information as to the cause of such an anomaly.

Mr. Gladstone replied that the condition was rare, but that such cases had been recorded. He could not suggest the cause.

Mr. Gladstone also demonstrated a specimen illustrating Complete Absence of the Appendix. There was no scar and no other abnormality. On opening, the cæcum presented a small oval lymph nodule at the usual site of the appendicular opening; the tæniæ of the large intestine converged to the usual place. Mr. Gladstone attributed the absence to arrested development.

A discussion followed in which Professor Wright, Mr. Goodall, and Mr. Sidney Boyd (London) took part.

Mr. Boyd read a paper entitled

A Note on a Congenital Anomaly of the Duodenum Encountered during Gastro jejunostomy.

It was reported that the duodenal-jejunal flexure was found at the usual situation, but on tracing the small intestine onwards from the pylorus it passed behind the hepatic flexure of the colon, and then, traversing the loin lateral to the ascending colon, entered the pelvis. It was suggested that the condition was due to defective rotation of the bowel.

Professor J. Kay Jamieson (Leeds) demonstrated some very beautiful specimens of Injected Lymphatics.

The following papers were also read: (1) a note on the Relation of the Ureters to the Vagina; (2) Some Points in the Anatomy of the Diaphragm, by Dr. James Brash (Leeds); and (3) the Sympathetic System of a Full-time Fœtus, by Dr. George Riddoch (Aberdeen).

Friday, July 31st.

In the absence of Professor Reid, Mr. Goodall took the chair, and called on Dr. Hugh MacLean to read his paper on

So-called "Glycolysis" in Normal and Diabetic Blood, with Observations on the Estimation of Sugar in Blood.

After a few preliminary remarks Dr. MacLean demonstrated a new modified method of estimating sugar in blood. The main advantage of the method was the rapidity with which an estimation could be carried out. Small quantities (1 to 2 c.c.) of blood were used.

Dr. E. P. Cathcart (Glasgow) thanked Dr. MacLean for this new method, and asked him to exercise his ingenuity still further and find an indicator which would give a better end-point than that obtained when using permanganate alone.

Dr. E. S. Edie reported on

Some Experimental Work on the Action of Enzymes,

and referred to some recent work by Bayliss and others on the subject, which suggested that all ferment action took place in two stages: (1) the union of the enzyme with the substrate; and (2) the digestion of the substrate and setting free of the enzyme. It was pointed out that these two stages were dependent on two separate properties of the enzyme, one of which might be lost and the other retained. Dr. Edie's own work dealt mainly with the first stages, and supported the view that union took place by various receptors or side-chains possessed by the enzyme. Thus maltase, lactase, and invertase, though all producing glucose, acted on different sugars, because they possessed different receptors, whereas pepsin and trypsin could act on similar proteins, probably because they possessed similar receptors. This latter view was supported by the fact that the first stage in the action of trypsin on pepsin would take place in either an acid or alkali medium. There also appeared to be some evidence that trypsin combined with proteins of different kinds by means of receptors of a different type.

Mr. A. D. GARDNER read a paper on some work done by himself and Dr. MACLEAN on

The Sugar of Blood and Urine.

In these experiments blood was drawn by a hollow needle, and coagulation was prevented in most cases by potassium oxalate. The sugar was estimated at varying times from 2 to 30 minutes after withdrawal, then incubated at 70° C. for 3–4 hours, occasionally shaking. It was found that glycolysis took place in all normal human blood. With regard to diabetic blood it was found that in mild and moderate cases a degree of glycolysis took place even above that of normal blood, but that in severe cases there was no glycolysis at all. The sugar was estimated by Bang's method, using the Bertrand-Rowland Michaelis method as a control in all cases and MacLean's new modified method.—A short discussion followed.

Professor J. J. R. MACLEOD (Ohio) read a paper on

Recent Researches on Sugar Metabolism.

Experiments on the utilisation of sugar showed that before any conclusion could be arrived at glycogen utilisation in tissues must also be investigated. Evidence was accumulating that glycogen might disappear from the liver and yet not appear as sugar but as other substances. Two methods were useful in investigating this subject: 1. A histological, which consists in investigating the livers of diabetic and normal animals, the tissue being stained by Best's carmine method, which demonstrates the glycogen present in the cells. Under high power glycogen, or a glycogen-like substance (probably dextrin), is found in the blood-vessels. Lepine has found a lower percentage of free sugar in the blood of the inferior vena cava than in the blood of the carotid artery, and the reason may be that dextrin discharged from the liver into the blood is changed to dextrose. 2. The second method is a biochemical one, and consists in the examination of blood for glucose and other substances—e.g., lactic acid. Embden and Hopkins showed the probability that lactic acid could be derived from glycogen. The average amount of lactic acid in normal blood was 0·04 per cent. In hyperglycæmia obtained by splanchnic stimulation or asphyxia there was no evidence of increase of lactic acid in the hepatic veins, but clamping of the hepatic pedicle led to rise in percentage of lactic acid and also of the sugar in the blood. It was suggested, therefore, that some of the glycogen which disappeared was excreted as lactic acid and dextrin-like substances.

The results of various dietetic experiments were reported by Dr. CATHCART in his paper on

Influence of Carbohydrate on Metabolism.

The reporter had confirmed some recent experiments which showed that on a diet poor in protein but rich in carbohydrate the output of total nitrogen fell steadily. On a fat rich protein-free diet there was a rise in total nitrogen. Ringen showed that the result of increase of metabolism on a carbohydrate-poor diet was a demand of the organism for sugar. Recently Dr. Cathcart had shown that on a diet of pure olive oil for three days, to which small amounts of carbohydrate were added in increasing amounts, that carbohydrate did have an inhibitory effect upon protein metabolism. As the amount of sugar rose, so nitrogen excretion became nearer to normal. The conclusions Dr. Cathcart drew he expressed thus: "In the human organism the carbohydrate represents the currency, and fat the security, and not an easily convertible one."

A short discussion followed in which Professor MACLEOD and Dr. NOEL PATON took part.

Dr. J. B. ORR (Aberdeen) read a paper on

The Influence on Metabolism of Excessive Water Ingestion

by himself and Dr. DAVID BURNS (Glasgow). The conclusion the reporters drew from their experiments was that excessive water ingestion had no effect on the creatin or the creatinine excretion. The apparent fall in excretion of these substances found by Hawke, they considered due to experimental error caused by dilution of the urine.

LARYNGOLOGY, RHINOLOGY, AND OTOLOGY.

WEDNESDAY, JULY 29TH.

President, Mr. H. LAMBERT LACK (London).

The PRESIDENT, in opening the proceedings, said he regretted that the meeting clashed with that of the North American surgeons in London. The programme of work dealt largely with what had been hitherto regarded as more or less hopeless subjects. This pointed to a change in their ideas, e.g., with regard to treatment of inoperable neoplasms of the throat. With regard to otology, some people seemed hopeful of new lines of thought. As instances of progress during the year he mentioned suspension laryngoscopy, diathermy, and the intratracheal administration of ether by means of which bloody operations about the throat could be safely performed even without preliminary laryngotomy. Diathermy was not yet widely known, but was likely to become so, not in the treatmemt of malignant disease only, but of such conditions as nævi and lupus. He could not claim for this country the credit of the progress mentioned, but enough was being done here to make him proud to belong to such an active branch of medicine.

Discussion on the Treatment of Inoperable Growths of the Nose and Throat.

Mr. W. D. HARMER (London) opened the discussion with a paper on

Diathermy,

in which he said that diathermy had so far not received as much attention as it deserved. The discussion was on "inoperable" cancer, but the treatment could be applied in many other diseases. He referred members to Dr Nagelschmidt's book (1913). He described the apparatus and its cost. In practice the following conditions were necessary: (1) an assistant to attend to the power; (2) the operator to wear rubber gloves; (3) the needles to be applied to the tissue before turning on the current; (4) the current to be turned off before moving needle; and (5) aseptic precautions. General anæsthesia was required and preliminary injections of atropine were an advantage. A brush of 5 to 10 points was used. A series of punctures was made, each lasting from 5 to 10 seconds. The resulting coagulum was removed, and the cauterisation repeated if necessary. During operation they should be prepared for tracheotomy; the burning should be done slowly to prevent heating of the neck. There was an apparatus for measuring the neck temperature. Care was needed in removing sloughs. Three cases treated by Nagelschmidt in St. Bartholomew's Hospital were angioma of tongue, endothelioma of palate, and hypertrophied tonsils. His own cases for this paper were cancer of the tongue, palate, pharynx, and larynx. After diathermy there was no severe pain; swallowing was usually easy after 48 hours. There was rarely œdema, the temperature was seldom above 99° F., and there was little or no shock. Patients could often leave hospital within a week. There was usually cessation of salivation and discharge and no tendency to cicatricial contraction. Bad cases were those when the disease involved bone or structures of the neck. In only one case was there slight secondary hæmorrhage on removal of a slough. In two cases there were burns at the large electrode owing to defective contact. There was improvement in every case and the treatment could be repeated. One patient, his best case, had five treatments in two years. He showed drawings of a case of cancer involving the tonsils, tongue, and palate in which the glands were removed later without special difficulty. Radium had been employed in five cases as an adjuvant. Statistics of cases treated were produced. Life was not prolonged greatly. The patient's condition was much improved. In these cases diathermy was superior to the knife owing to the rapidity and ease of application, the absence of bleeding, and the concomitant obliteration of lymphatics. His impression was, further, that diathermy delayed growth and dissemination. It provided a better outlook for the last days of cancer cases and merited further consideration with regard to other diseases.

Dr. G. WILLIAM HILL (London) contributed a paper on

Radium Treatment.

He said that radium was a temporary palliative. After its use operative treatment sometimes became possible. Surgical diathermy was an operation in itself. He enumerated the various means of treating inoperable cancer—e.g., Coley's fluid, violets, &c. Radium could be used in combination with diathermy and X rays. The action of X rays was comparatively limited, but he had seen good results in a case of lymphadenoma. He had used diathermy in two cases with encouraging results. Radium was better for sarcoma and endothelioma; diathermy for epithelioma. He had applied diathermy in a case of epithelioma of the larynx with the aid of suspension and intratracheal ether, and there was at present no sign of recurrence. Diathermy was more precise, more rapid, and more easy of application than radium. Radium was a valuable agent, but it was also a two-edged tool. Its use had been exaggerated, especially in carcinoma. Radium technique was in process of evolution. He discussed the methods of application. Radium was worth trying if (*a*) an adequate amount of radium was available, (*b*) the growth was accessible, and (*c*) the patient not *in extremis*. Dissemination was not necessarily a contra-indication. Obscure toxæmia sometimes occurred after radium. He had had a case with Dr. Hemington Pegler where thrombosis of the internal iliac vein took place. Accidents had occurred owing to loss of radium in the patient. He briefly described the technique of radium application, and showed upon the screen a number of radiograms of œsophageal stricture.

Dr. JOHN MACINTYRE (Glasgow), in reading a paper on

X Rays,

said that cancer cases might be divided into four classes: (1) successful operation; (2) operation with recurrence; (3) "inoperable" cases with recurrence after operation; and (4) cases untreatable by any means. The view of surgeons that patients should, where possible, get the benefit of early operation had lately been challenged. X rays and other agents had not had the same chance as the knife. It must be borne in mind (1) that agents like X rays acted differently in different subjects and tissues and stages of disease; (2) the distinction between epiblast and mesoblast; and (3) the variable incidence of disease in various parts of the body. In these cases every possible means of diagnosis should be employed. X rays had been successful in rodent ulcer, and the knife was not needed. He had had good results in two cases of sarcoma, as also in cases of epithelioma at an early stage when the patient refused operation. Good results had been obtained in gland infections (Lewis Jones). In sarcoma experiences varied very much. Numerous cases of disappearance of tumours were recorded. He asked how much reliance was to be placed on pathological diagnosis. He concluded (1) that early cases had undoubtedly been cured by X rays; (2) he would not claim cures in "inoperable" cases, but considerable palliation; and (3) the best results were obtained on surface structures with the exception of mucous membranes. He suggested the more frequent prophylactic use of radium and X rays. He described the complicated nature of X rays and the various possibilities in the mode of using them. There had, he said, been a great advance by the evolution of screening. Deep-seated growths had been effectively treated, and great improvements had been made in the apparatus. The work was only beginning. Surgery was old by comparison with radiology. Through the progress of science the truth about X rays would sooner or later be demonstrated.

The PRESIDENT gave his experiences with diathermy, and the discussion was continued by Dr. P. WATSON-WILLIAMS (Bristol), Mr. SOMERVILLE HASTINGS (London), Dr. L. HEMINGTON PEGLER (London), Dr. W. S. SYME (Glasgow), Dr. T. H. LIVINGSTONE (Newcastle), Mr. T. JEFFERSON FAULDER (London), and Mr. J. F. O'MALLEY (London).

Mr. HARMER, Dr. HILL, and Dr. MACINTYRE replied.

THURSDAY, JULY 30TH.

Discussion on Oto-sclerosis.

Dr. A. A. GRAY (Glasgow) read a paper on the

Etiology and Pathology of Oto-sclerosis.

He said the notion of Manasse that sclerosis was not a pathological entity was based upon his findings in two particular cases. In practice a definition of a disease became necessary. What he had to say referred to "progressive deafness with changes in the bony capsule of the labyrinth." He illustrated the pathology of the disease by a number of sections of the labyrinth showing changes in oto-sclerosis, and expressed the view that the signs were those of degeneration, not of inflammation. As regards etiology, it was not necessary to look for any single specific cause of the disease, which in this respect might be compared with arterio-sclerosis. It was probable that the whole auditory apparatus from pinna to internal meatus was, or might be, involved. As evidence of this he mentioned diminution in the cerumen, loss of cutaneous sensation in the meatus, and the condition of the Eustachian tube. In well-marked cases of oto-sclerosis there were no changes in the semicircular canals or the vestibular nerve apparatus. The processes of evolution had their influence. The cochlea was a recent inheritance by comparison with the semicircular apparatus, and was therefore more liable to degenerative processes.

Mr. J. S. FRASER (Edinburgh) read a paper on

Clinical Aspects of Oto-sclerosis.

He said that there were differences of opinion as to what was during life to be diagnosed as oto-sclerosis at an early stage. Adhesive processes and nerve deafness might be concurrent. He took the view that "osteitis vasculosa" might follow simple otitis media. He had collected 153 cases of (clinical) oto-sclerosis. The membrana tympani was normal in all except 26, where very slight changes were present. All were deaf, nearly all had tinnitus, some had vertigo, and eight had neuralgic pains. Questions to be investigated were age of onset, sex influence, family history, past or present illnesses. He would not say that the facies of oto-sclerotic patients was characteristic. The external meatus, tympanic membrane, and Eustachian tubes should be examined, and rhinoscopy and complete functional tests carried out. He described the functional tests. C_{32} and C_{16} were not heard by any patient. He used Struycken's monochord for testing the upper tone limit. He had made experiments in case of negative Rinne to determine at what point the reaction became positive. The caloric reaction time on the average was in normal cases 25 seconds; in late oto-sclerosis it was reduced to 19 seconds. He showed upon the screen a number of slides demonstrating osteitis vasculosa associated with cholesteatoma, and drew attention to the lymphatic spaces surrounding the labyrinth.

Mr. G. J. JENKINS (London) read a paper on

Various Methods of Treatment.

He said that when disease of the middle ear was supposed to be the cause of oto-sclerosis treatment was directed to the middle ear. As pathology advanced forms of treatment by massage, &c., were invented. He advanced the view at the Congress of 1913 that there were changes in the labyrinthine fluid as well as in the bone. He was of opinion that massage, exposure to sounds, &c., did harm in true oto-sclerosis. No good had resulted from attempts to make a new fenestra by surgical means. He had opened the external canal with slight but very temporary benefit. In regard to prophylaxis questions of heredity, marriage, and pregnancy came in. It was unwise to raise hopes in the patient from operation or nasal treatment. The slow progress of the disease was a means of encouraging the patients. The general question of the effect of noises was important. It was generally advisable for such patients to live in quiet surroundings, to avoid alcohol and quacks. It must also be remembered that one kind of deafness might be added to another. He described the use of artificial aids to hearing and showed a number of labyrinth sections on the epidiascope.

Mr. F. C. MUECKE (London) read a paper on

Auditory Re-education.

He said that he had treated 36 cases with a view to testing the capabilities of electrophonoid instruments. His cases included all forms of deafness: (1) obsolete chronic suppurative otitis media; (2) oto-sclerosis; (3) chronic catarrhal otitis media; (4) nerve deafness; and (5) cases with scarred drums and adhesions. His results showed that in oto-sclerosis there was slight temporary benefit as regards tinnitus only. Early cases of chronic catarrh could be improved, but relapsed. In later stages there was sometimes slight improvement, but relapse always followed. In nerve deafness there was no result at all. He concluded that the vibrations used in these methods acted mechanically, not physiologically.

The papers were discussed by Dr. J. M. BOOTH (Aberdeen), Dr. WATSON-WILLIAMS, Dr. HILL, Dr. SYME, Dr. J. W.

Mackenzie (Inverness), Mr. Jenkins, and the President, who drew attention to the excellent pathological demonstrations given.

Dr. Gray, Mr. Fraser, and Mr. Muecke replied.

The following papers were also before the section :—Wounds of the Ear, Nose, and Throat in the Last Two Greek Wars, by Dr. D. Demetriades (Athens) ; Ocular Disturbances in Cases of Sinus Disease, by Professor Onodi (Budapest) ; and Congenital Teratoma of the Septum Nasi, by Dr. Ladislaus Onodi (Budapest). The authors of these papers having been summoned back to their respective countries, the papers were read by Dr. H. Peterkin (Aberdeen), who had translated them into English.

Dr. J. W. Killen (Londonderry) related a remarkable case of a bullet wound of the nose with a superficial injury of one cornea.

Friday, July 31st.

Mr. Fraser gave a demonstration on the epidiascope of the Pathology of Labyrinthitis.

Dr. Watson-Williams read a paper on

Intranasal Operations for Frontal Sinus Disease.

By means of drawings of the base of the skull he showed the historical development of intranasal operations on the frontal sinus, and the intranasal instruments of Spiers, Halle, Segura, Vacher, Sullivan, and others. He drew attention to the agger cells of Mosher, which he preferred to call anteconchal cells. He demonstrated his own instruments for penetration of the sinus, and showed a number of skiagrams with the instruments in position. The principal points were to work as far forward as possible, to keep outside the middle turbinal, and to retain as much mucous membrane of the fronto-nasal duct as possible.

The paper was discussed by Dr. Hill and Sir William Milligan (Manchester), and Dr. Watson-Williams replied.

Dr. A. Brown Kelly (Glasgow) read a paper on

The Difficulties and Dangers of Exploratory Puncture of the Antrum of Highmore.

He said that a considerable amount of attention had been paid to this subject in other countries, but it had not so far been discussed here. In exploratory puncture he used the inferior meatal route and straight trocar and injected fluid usually after preliminary insufflation. His study of the literature led him to express a warning against forcible inflation. He passed over the minor accidents which occurred and stated that nine fatal cases were on record. They were initiated by sudden faintness, loss of consciousness, paralyses, or convulsions. They were difficult to explain. Death had occurred in these cases 14 and 40 hours from the onset of symptoms. A case of Neunbahn was explained as cocaine poisoning. The literature contained numerous cases of paralysis which recovered. These were probably in their nature similar to the fatal cases. Killian had suggested reflex stimulation of the vagus as a cause in these cases. Air embolism was a possibility and had occurred in a case of his own, in which the air probably entered by the pterygoid plexus of veins. Sometimes there was cyanosis and dyspnœa. The question which arose was why a proceeding usually regarded as trivial should be sometimes followed by such serious consequences. Post-mortem examination had thrown very little light upon the matter. The explanations which had been given were poisoning, air embolism, angio-spasm from reflex irritation of the vagus, and absorption of toxins. In some cases there was analogy to the alarming symptoms occasionally produced in artificial pneumothorax.

The paper was discussed by the President, Dr. Pegler, Mr. Faulder, Mr. Hastings, Dr. Hill, Dr. Booth, Mr. Fraser, and Dr. O. St. J. Gogarty (Dublin).

Dr. Brown Kelly replied.

Sir William Milligan demonstrated a new form of Extending Bronchoscope. The extension was obtained by a mechanism similar to the coarse adjustment of microscopes. He had added a funnel-shaped opening with a slot to facilitate the passage of instruments, and also a lateral tube for anæsthetics.

The President, Dr. Hill, and Dr. Brown Kelly asked questions and Sir William Milligan replied.

Dr. Hill and Mr. G. J. F. Elphick (London) communicated a paper on the Minimising of Hæmorrhage in Extirpation of the Tonsils and on the Employment of the Hæmostatic Guillotine.

Dr. Gogarty read a paper on

Latent Empyemata of the Nasal Accessory Sinuses,

in which he said that individuals reacted very differently to nasal disease. In one case polypi were borne with apathy ; in another case attacks of coryza could almost be produced by suggestion, and yet even in sensitive cases grave conditions might be overlooked. He had operated on the sinuses in 300 cases. In most of them the patient complained of "catarrh," and the vast majority of them had localising symptoms. His paper was based on five cases where there were no localising symptoms, either subjective or objective. He described the cases in detail and thoroughly explained their difficulties. He drew attention to the extreme physiological importance of the nasal mucosa. Chronic catarrh was nearly always a symptom and not a cause, and was often maintained by latent sinus disease. His five cases showed that no examination of the nose was complete unless the sinuses were examined. In cases of persistent neuralgia skiagrams of the roots of the teeth should always be made. He gave a graphic description of the evils which resulted from interference with the lower turbinal and protested against its wholesale removal as still practised and even illustrated in the latest surgical books on rhinology.

The paper was discussed by Dr. Watson-Williams, Dr. Killen, Mr. Fraser, and Dr. Peterkin, and Dr. Gogarty replied.

At the close of a very successful meeting Dr. Booth in a happy speech proposed a vote of thanks to the President, which was carried by acclamation.

DISEASES OF CHILDREN (INCLUDING ORTHOPÆDICS).

Wednesday, July 29th.

President, Dr. J. Thomson (Edinburgh).

Mr. T. H. Openshaw (London) opened a discussion on

Congenital Dislocation of the Hip.

He emphasised the great advances made in the treatment of this condition in recent years ; malposition in utero, intrauterine trauma, and heredity led to this and other congenital deformities. The chief symptoms, said Mr. Openshaw, are lateness in walking and a peculiarity of gait, with prominence of the trochanters and progressive shortening, from three-eighths of an inch in infants to six inches in adults. Adduction is very free and the abnormally placed head can best be felt with the limb adducted and flexed. The acetabulum is triangular in shape and filled by the displaced ligaments ; the capsule hour-glass shaped with a narrow constriction and a roomy outer half allowing free movement of the head. The cotyloid ligament is always present though often frayed. After the age of 5 flattening of the epiphysis and abrasion of the cartilage appear and osteo-arthritic changes become serious in later life. An increasing forward rotation of the head is of great importance. All the structures round the joint undergo adaptive changes. Treatment should be commenced at the earliest possible moment ; the older the patient the greater is the shortening, the worse the rotation, the more prolonged the treatment and the worse the prognosis. In cases under the age of 5 reduction by simple manipulation is possible ; above this age Mr. Openshaw combines with the Lorenz method preliminary tenotomy of the muscles and weight extension till the trochanter is well down ; he considers that the head slowly stretches the constriction of the capsule, and only comes to rest in the acetabulum after a considerable time in plaster ; the hip is maintained in the first abducted position for six months; the total duration of after-treatment is at least 18 months. When the head is much rotated plaster is carried down to the ankle with the leg rotated inwards ; if anterior displacement occurs the leg is put in plaster in flexion for three months ; residual stiffness gradually passes off. Redislocation depends on the age at treatment and the rotation of the neck. All cases under the age of 4 can be replaced with certainty, but over this age the prognosis gets worse ; cases as old as 16 and 18 have been reduced by manipulation at several sittings with excellent anatomical results. Mr. Openshaw uses open operation in cases of relapse and in osteo-arthritic cases ; he avoids interference with the cartilage of the femur and the results are very favourable.

Mr. E. LAMING EVANS (London) laid great stress on the value of radiographic plates in diagnosis, prognosis, and after-treatment. They show, he said, the anatomical changes which form the basis of cure. In the deformed acetabulum the roof is short, has an increased obliquity, and no sharp margin—all conditions favouring relapse. After reposition ossification from the acetabular margins gradually broadens the roof, lessens the slope, and elevates the rudimentary margins. Full restoration takes about three years, and the radiographic records are a guide to the necessary period of after-treatment and to the period at which an anatomical cure can with safety be assumed.

Mr. JOHN FRASER (Edinburgh) laid stress on the bad outlook in untreated cases in many of which the patients became bedridden and died early. He advocated immediate treatment of all cases and had rarely found tenotomy necessary; full abduction in plaster for three months and plaster for nine months in all was the usual practice. When open operation was necessary the anterior incision was used; the hip was put up in abduction and inward rotation and the foot brought into position later by subtrochanteric osteotomy.

Dr. ALEXANDER MACLENNAN (Glasgow) advised retention of the hip in abduction for at least six months. A hereditary history has certainly existed in several of his cases, and in a large number of cases of definite oligohydramnios that he had investigated there was no instance of any congenital deformity.

Mr. A. FULLERTON (Belfast) considered that many cases were traumatic. He had reduced the right hip in a child at 2 years of age, the left being normal at that time both to clinical and X ray examination, but six years later the left hip required reduction.

Mr. G. C. E. SIMPSON (Liverpool) had observed that in many cases of unilateral dislocation the head and neck of the sound side exhibited changes similar to those on the affected side. His experience of the methods of retention in the abducted position with inversion, though small, led him to advocate this position. He preferred a short period of retention in plaster, with functional use, followed by the use of a Thomas calliper splint to protect the articulation for the first few months.

Mr. PAUL B. ROTH (London) advocated the postponement of treatment until the child could walk, and Dr. W. E. HENDERSON (Kendal) had found the high incidence of 15 cases in 11,383 children in the county of Westmorland.

Mr. A. S. B. BANKART (London) utilised reduction over the inferior border of the acetabulum with the thigh fully flexed without any preliminary manipulation. After reduction the leg is put up first in right angle abduction and external rotation, and secondly in diminished abduction with 45° internal rotation; in both positions the knee is included in plaster, the child is not allowed to walk or crawl, and both hips are included in every case. In the third and fourth plaster the abduction is further diminished, the knee is left out, and the child allowed to walk. The principal points were the elimination of all preliminary violence, pulling, stretching, &c., before reduction. No stretching of the hamstrings; no walking or crawling in the first two plasters; internal rotation in the second plaster and fixation of both hips. Internal rotation gave far better results than the Lorenz method of maintained external rotation, which favoured anterior transposition. True reposition should be the aim of treatment.

Mr. OPENSHAW, in his reply, referred to the frequency of the condition in certain districts and races. He did not consider that the Lorenz method required great violence, especially after preliminary tenotomy. Internal rotation and fixation of both hips were of advantage in some cases.

Mr. ROTH read a paper on

The Practical Treatment of Lateral Curvature of the Spine.

Proper treatment depends, he said, on the recognition of the following principles. Scoliosis is due to a general weakness of muscles, ligaments, and bones, it is postural at first and only becomes structural after a long period. Postural scoliosis is completely curable, structural scoliosis can be arrested but never cured. The prognosis can be decided at the first examination by finding the best attainable position of the patient. Treatment depends on training the patients' muscular strength and postural sense, and on attention to the skeletal deficiency. Mr. Roth did not believe that any amelioration of structural deformity could be obtained. Exercises and muscular training were the basis of treatment in all cases as plaster only increased the weakness. As a record of the deformity he took a tracing of the outline of the dorsal prominence with a malleable tin tape.

Mr. A. MACLENNAN laid stress on the difficulty of getting these patients to persevere with treatment. The use of Abbot's method gave over-correction rapidly and so was an advantage, and in his opinion actually corrected structural deformity.

Mr. JOHN FRASER had also seen good structural correction by Abbot's frame.

Mr. F. H. ALFREY (Southwick) also spoke, and Mr. ROTH replied.

In a note on

The Treatment of Torticollis

Mr. ROTH pleaded for simpler treatment. He practised subcutaneous tenotomy of the sternal origin of the sterno-mastoid. It was rarely necessary to divide the clavicular head and never necessary to divide deep fascia. After tenotomy the head could be manipulated till full over-correction was obtained, and full rotation and lateral flexion once daily for the first few days were sufficient without any retentive apparatus. Subcutaneous tenotomy was, in his opinion, free from danger and avoided an unsightly scar which often underwent keloid change. Exercises for prolonged periods were useful when scoliosis was also present.

Mr. OPENSHAW invariably used the open operation. Subcutaneous tenotomy fell into disuse owing to several cases of severe hæmorrhage, probably from the variable communicating vein between the anterior and external jugular. He had never had trouble with the scar or with hæmorrhage. He advocated open tenotomy and the use of a collar afterwards.

Mr. H. W. M. GRAY (Aberdeen) agreed that subcutaneous tenotomy without retentive apparatus was sufficient in the absence of associated deformities, but Mr. LAMING EVANS strongly advocated open operation and free division of all bands with subsequent exercises in advanced cases.

Mr. ROTH replied.

THURSDAY, JULY 30TH.

Dr. A. E. GARROD (London), in opening a discussion on

The Thymus Gland in its Clinical Aspect,

alluded to the obscurity of our present knowledge of the functions of the gland. The thymus, he said, is a gland of internal secretion, and its extirpation in animals leads to definite symptoms—adiposity followed by cachexia and death in coma, bone changes similar to those of rickets, and hypertrophy of the associated glands. Rickety alterations in bones have been observed after its extirpation in children. Little information has been gained from hyperthymism, thymus feeding, or thymus tumours. The thymus may play a part in rickets and in a form of cretinism accompanied by adiposity, and its correlation with other glands, especially the genital glands, is important. Clinically disease of the gland leads to thymic death, a form of sudden death in infants; to thymic asthma, characterised by chronic or spasmodic dyspnœa; and to the status lymphaticus. Diagnosis in the first of these conditions depends on the suddenness of the attack and the convulsive symptoms, but only in a few cases can it positively be stated that the thymus is abnormally large, as its normal size is so variable. Thymic death and thymic asthma may be due to mechanical effects of the enlarged gland, but status lymphaticus is a general constitutional condition predisposing to sudden death and characterised by a number of manifestations—pale pasty skin, increase of lymphatic tissues, enlarged spleen, and enlarged thymus. The more typical cases occur in adults and older children, but the liability to sudden death from slight causes renders its recognition important, even in young children. Many of the pathological manifestations are not available clinically, and enlargement of lymphatic tissue at the root of the tongue and of the thymus are the most valuable of those that are. In older children other signs become available, mainly abnormalities of sexual characters. Enlargement of the thymus is identified usually by increased retrosternal dulness and by enlarged thymic shadow in radiographs. Careful descriptions of every case and of the march of symptoms in the fatal seizures would be of value in elucidating the problem. Thymic conditions appear to be only a part of a general disease of ductless glands, and the disease is modified by the groups of glands involved. Some degree of thymic change is present in Addison's disease and exophthalmic goitre. Treatment so far has been surgical and radiological and directed rather to relief of pressure; though radiological treatment may have some influence on the general condition, the right internal medicament for this disease will probably be found in some extract from the ductless glands.

Dr. MACLENNAN read a paper on

The Technique of Thymectomy.

He said that his results in eight cases had been encouraging, though the thymus often played rather a physiological than a mechanical rôle. Two types of operation were referred to, the first a simple and safe one, suitable in cases where the gland was normal or only slightly enlarged, being of an intracapsular enucleation; the second, where enlargement or adherence of the organ rendered a larger exposure necessary for its complete extirpation, involving a resection of the manubrium. The surgeon must be prepared to proceed to this if found necessary after exposure of the gland, as incomplete extirpation is a bad operation.

Mr. D. P. DALBRECK WILKIE (Edinburgh), in a paper on

Appendicitis in the Status Lymphaticus

maintained that the vulnerability of thymic subjects to acute infections was of grave importance if attacked by acute abdominal conditions, and quoted cases in illustration of the dangers. In two cases of appendicitis in which operation was performed within eight hours of the onset of the attack, and in which the appendix was not gangrenous or perforated, death had supervened in 24 and 42 hours respectively (in spite of primary peritoneal drainage and other treatment) from profound toxæmia. Post mortem in both cases marked signs of status lymphaticus were found, and this probably caused the low resistance. In a third case appendicectomy in the subacute stage was followed by collapse as the sutures were being inserted, and the patient could not be revived. Chloroform had only been used to help induction and open ether was the main anæsthetic. Again, status lymphaticus was shown by the post-mortem examination. The possibility of this condition was a further argument for the disuse of chloroform in operations on children.

Dr. C. MCNEIL (Edinburgh) considered

The Association of Abnormal Types of Pneumonia and of Tuberculosis in Children with Thymo-lymphatic Hyperplasia.

Status lymphaticus was a disease involving all the ductless glands and commonly present in cases of sudden death in infants, being frequently associated with capillary bronchitis or pneumonia. Many of these deaths were due to fulminant pneumonia or other fulminant infections to which these subjects were particularly liable. In a recent epidemic of sudden deaths with coma in an industrial school near Edinburgh fulminant bronchitis and status lymphaticus had been present in each case. In the same institution scrofula was very prevalent, and he considered that this condition was due to tuberculosis in subjects with status lymphaticus. Scrofula he described as a constitutional disorder of children, characterised by catarrh, enlarged glands with tuberculous infection, skin rashes, and tuberculosis of bone-joints; in addition, there were peculiar bodily characters, and the subjects gave intense tuberculin reactions.

Professor NOEL PATON (Glasgow), in the discussion which followed, sketched the modern views of the physiology of the thymus gland. The development of the thymus suggested that its function was to supply a secretion to the blood. In fishes and some other animals the gland persisted throughout life in contrast to its early atrophy in mammals. The results of extirpation of the gland were not well marked in guinea-pigs and rabbits, which were animals highly developed at birth, but could be studied in other animals. The extirpation of the thymus or of the testicles led to increased growth of the remaining gland; this might mean that the secretions of the one modified the activity of the other, or it might be compensatory and imply that the two organs were associated in producing a common internal secretion which influenced growth. Thymus feeding in tadpoles delayed their evolution; thyroid feeding promoted it, and the relation of these two glands required further investigation. Professor Paton also alluded to the influence of the thymus on bones, blood vessels, and nerves, and concluded that though not essential to life the thymus played an important part in growth and nutrition prior to puberty.

Dr. H. THURSFIELD (London) considered that diagnosis depended on no cardinal sign, but rather on a summation of minor characters, none of them constant. It was important to look for thymus enlargement in children who got frequent attacks of collapse without any cause. He alluded to the rare but well-marked class of cases of spasmodic dyspnœa with enlarged thymus which were most amenable to thymectomy, and noted the great operative mortality chiefly due to septic infections of wound or lung, and the unsatisfactory results of operative treatment in these cases.

Dr. D. B. LEES (London) considered that the association of the gland with cardiac muscle fibres required investigation; these fibres should be examined histologically in all cases of sudden death.

Dr. F. LANGMEAD (London) emphasised the difficulty of arriving at an estimate of the size and weight of the thymus gland in normal children. He thought that changes due to acute infections would account for the post-mortem appearances in many cases classed as status lymphaticus.

Dr. LEONARD FINDLAY (Glasgow) doubted if the thymus played any part in rickets, and Dr. D. W. GEDDIE (Aberdeen) alluded to the difficulties of anæsthetists in the absence of any reliable sign of the status lymphaticus.

Dr. MACLENNAN, Dr. WILKIE, and Dr. MCNEIL having briefly replied, Dr. GARROD, in concluding the discussion, agreed that there was room for a considerable amount of doubt of the rôle of the thymus in many of the described cases. The thymus was a gland which favoured the individual rather than the race.

Some Manifestations of Congenital Syphilis and their Treatment.

Dr. L. FINDLAY and Dr. MADGE ROBERTSON (Glasgow), in a paper on the above subject, said: Within recent years there has been a change in our ideas regarding the prevalence of syphilis and its manifestations largely due to the use of the Wassermann test. Although this test is not specific, it is of very great value in the diagnosis of active and latent syphilis if the method is sufficiently controlled. Working with the reliable Glasgow technique, the authors have satisfied themselves that a variety of chronic eczema of the angles of the mouth and mucous membrane of the lip is often of syphilitic origin, and that 80 per cent. of cases of congenital heart disease, 39 per cent. of spastic diplegics, and 59 per cent. of mental defectives in their clinic are congenital syphilitics. In view of the prevalence of these manifestations improvement in treatment is very necessary. Salvarsan is admittedly superior to mercury and should be more generally utilised. It is best given to infants and young children intravenously, as when administered intramuscularly pain and necrosis are serious drawbacks. The difficulty of intravenous injection is overcome by utilising the scalp veins, concentrated solutions of the drug, 0·05 to 0·2 grm. in 3 to 5 c.c. of saline being injected; repeated injections give good results. Antenatal treatment with salvarsan probably gives the best results, and great help in treatment of the disease would be obtained by compulsory notification. Four cases of idiocy with a positive Wassermann test, only one presenting syphilitic stigmata, have been treated by salvarsan and mercury with great benefit, especially in two cases in which the children were made quite educable.

FRIDAY, JULY 31ST.

On this day the section met in conjunction with the Sections of Medicine and Electro-therapeutics and Radiology. An account of the proceedings will be found on p. 381.

NAVAL AND MILITARY MEDICINE AND SURGERY.

WEDNESDAY, JULY 29TH.

President, Surgeon-General W. MAXWELL CRAIG, C.B., R.N.

In the enforced absence, owing to illness, of the President of the section the chair was taken by Surgeon-General P. H. BENSON, I.M.S. (retired). The proceedings opened with a vote of condolence to the President, proposed by Surgeon-General BENSON and seconded by Colonel C. H. MELVILLE, R.A.M.C.

Fleet-Surgeon D. WALKER HEWITT, R.N., read a paper on

The Treatment of Wounded in Naval Warfare.

He first drew attention to the peculiar conditions of war at sea in as far as they affected the nature of wounds received and the possibilities and limitations of treatment. He emphasised the importance of the organisation of first-aid parties who should be especially instructed in the hand transport of wounded. He did not think they should attempt to apply first aid or dressings. The dangers from primary hæmorrhage were not great, and he considered that unskilled dressing might often do more harm than good and waste valuable time. On the numerous small craft where it was impossible to carry a surgeon, he suggested that three or four men should be well trained in first aid, not only theoretically but practically, by serving for short periods in naval hospitals. As soon as an action was over the sooner the wounded could be transferred to a hospital ship the better. The transference of wounded from ship to ship should be practised in peace time.

Colonel Melville asked how it was that little importance was attached to the risks of primary hæmorrhage in naval warfare. He suggested that as naval actions so frequently took place near to land the wounded should be put on shore at the close.

Sir James Porter, K.C.B., R.N. (retired), commenting on the paper, emphasised the importance of practising the removal of large numbers of wounded men at inspections and other occasions.

Fleet-Surgeon Hewitt, in reply, said that the contused nature of the wounds produced by large projectiles and splinters accounted for the rarity of primary hæmorrhage. Scalds and burns accounted for a good proportion of the casualties in naval warfare nowadays. He acknowledged that it might sometimes be possible to land the wounded after an engagement, but that for strategical reasons it was not a method which could always be used.

Captain C. Max Page, R.A.M.C. (S.R.), read a paper on

Gangrene in War,

drawn mainly from his experience in the late Balkan war. He classified gangrene as met with in war under five headings—viz., (1) due to injury to the main vessels; (2) local traumatic; (3) infective; (4) vaso-motor; and (5) secondary to the effect of high explosives. He noted the occurrence of aneurysm or aneurysmal varix after gunshot injuries of the large vessels, and quoted Makins's experience that gangrene in these cases only occurred secondarily to operation. He stated that cases of emphysematous gangrene could sometimes be treated successfully by local incision and the application of hydrogen peroxide. The fourth type of gangrene he considered to be strictly comparable to frost-bite. It had affected the Turkish troops at one period of the war in large numbers. The men attacked had in half the cases suffered from some form of enteritis, and all gave a history of exposure to cold, wet, and famine. He advised a conservative line of treatment for these cases, unless tetanus or emphysematous infection was present, when amputation was necessary. He had not been able to find any record of gangrene of this type on the allies' side. It was interesting to note that a similar condition attacked the British troops serving in the Crimean war; 1844 men were invalided on that account, and the death-rate in the ex-Bulgarian force was 33·3 per cent.

Questions were asked by Surgeon R. A. Rankine, R.N., Colonel Melville, Surgeon-General Benson, and Major W. Riach, R.A.M.C., to which Captain Page replied.

Lieutenant-Colonel E. M. Wilson, R.A.M.C. (retired), gave an address on

The Employment of ex-Soldiers and Sailors in Civil Life, with Special Reference to those who have been trained in Medical Duties.

He said that the men after leaving the colours for some years belonged to the reserve of either the sea or land forces. Their technical skill did not survive for long unless they were given an opportunity of practising it, and he knew of many instances where men well qualified as dispensers, nurses, or laboratory attendants had drifted into the ordinary labour market. He thought it most important that the more intelligent type of man who gained special qualifications should be secure of an opportunity of practising them when he returned to civil life. This security would improve recruiting and would make better citizens of the men after their training. He pointed out that medical men could assist the movement by employing ex-service men. They could be obtained from the Army and Navy Male Nurses' Coöperation, 11A, Welbeck-street, London, or through the Royal Army Medical Corps Records Office, Aldershot.

Sir James Porter agreed with Colonel Wilson, and said that he thought there was a great field for specially trained medical service men in the future, and that what was required was extension and advertisement of their organisation.

Surgeon Rankine suggested that it would be a good thing if the Asylums Board would employ ex-R.A.M.C. and naval orderlies as a regular thing.

Major Riach said he thought that there was a disadvantage in the opportunities of immediate lucrative employment available to ex-R.A.M.C. orderlies. He had come across instances where men who would have made excellent non-commissioned officers would not sign on after the expiry of their three years because they had well-paid jobs open to them in civil life.

Colonel Wilson replied.

Thursday, July 30th.

A joint session was held in conjunction with the Section for Dermatology and Syphilology, Dr. Alfred Eddowes (London) being in the chair. Introductory papers were read by Mr. J. E. R. McDonagh (London) and Lieutenant-Colonel T. W. Gibbard, R.A.M.C. The following members took part in the discussion: Dr. J. Goodwin Tomkinson (Glasgow), Dr. J. A. Nixon (Bristol), Dr. H. MacCormac (London), Dr. J. C. McWalter (Dublin), Colonel Melville, and Professor E. Pontoppidan (Copenhagen).

Subsequently Surgeon-General Benson went into the chair, and Captain Cecil Johnson, R.A.M.C. (T.F.), read a paper on

Common Ailments in Camp.

He said that this paper was put forward to bring to notice how the minor ailments, which were so liable to cause loss of training among Territorial troops, might be avoided. He pointed out that in Territorial camps the admissions to hospital were most frequent among the young and least experienced men; it was therefore important that special attention should be paid to the health of recruits. He considered that the medical examination should be stricter than it is at present, and that no recruit should be accepted unless absolutely sound. He emphasised the importance of insisting upon the teeth being in good condition. He considered that a man should be rejected sometimes on grounds of inferior general physique or moral laxity. When in camp the author suggested the necessity of enforcing personal cleanliness and cleanliness in the camp in general. He referred to the value of periodical shifting of tents and the airing of bedding. The two commonest causes which rendered men unfit for duty were sore feet and gastro-intestinal disturbance. With regard to the former it could be prevented by attention to cleanliness and the provision of proper socks. In relation to the second a careful attention to the action of the bowels during the second and third day of camp was most important.

Colonel Melville agreed entirely with Captain Johnson's remarks in relation to the examination of recruits. He thought that use of soft feet cloths instead of socks was a satisfactory method.

Dr. A. Baxter (Alderley Edge) suggested painting the feet with a 5 per cent. solution of picric acid.

Lieutenant-Colonel Francis Kelly, R.A.M.C. (T.F.), said he thought the men were perhaps hardier in Scotland, and so suffered less from minor ailments. He wished to emphasise the importance of having every recruit examined by an R.A.M.C. officer; also that examination should be carried out before the men went into camp.

Friday, July 31st.

Staff-Surgeon G. Murray Levick, R.N., having been recalled to duty, was unable to deliver his lecture.

DERMATOLOGY AND SYPHILOLOGY.

Wednesday, July 29th.

President, Dr. A. Eddowes (London).

The President in his opening address said that he did not desire to give any set speech. In the first place he wished to thank them for the honour they had done him, a compliment he greatly appreciated. He had to announce that owing to illness one of the honorary secretaries, Dr. J. Farquhar Christie, was unable to attend. He was sure they all regretted this very much. Dr. R. Cranston Low (Edinburgh) had kindly taken his place. The subjects for discussion were not only of interest but also of considerabe importance. He particularly wished to direct their attention to the discussion on syphilis held in combination with the Naval and Military Section. In the museum there were exhibits of models from skin diseases made by Dr. Cranston Low, a series of coloured photographs by Dr. Haldin Davis, and microscopical preparations of the leucocytozoon syphilidis by Mr. J. E. R. Macdonagh.

Dr. **NORMAN WALKER** (Edinburgh) then read a paper on

The Need for More Method in the Conflict with Lupus and Ringworm.

Dealing first with lupus, he said that his experience of these cases now extended over 22 years, comprising 1054 cases. In this series he had been most careful to prevent duplication. He did not believe that out of this number 100 had been cured. Many factors brought about this unsatisfactory state of affairs, but among others the very irregular attendance of the patients was in a large measure responsible. They might only come to hospital two or three times in all. The disease caused little discomfort, and in consequence they put off seeking, or altogether neglected to obtain, medical advice. Although the disease usually began fairly early in life, it might be met with in elderly people where the origin was comparatively recent. An analysis of cases from hospital and private practice revealed interesting figures. Thus, out of 30,000 skin cases in hospital practice, 1 in every 30 was lupus ; in private practice, 1 in every 70. With lupus erythematosus the figures were different: in hospital, 1 per cent. ; in private, 2 per cent. In private practice superior results were obtained, as these patients were more regular in their attendance and were subject to better hygienic conditions. Many cases of lupus were secondary to tuberculous glands, and he frequently observed small nodules arising in the scar left after operation for this condition. Disease of the nasal or oral mucous membrane was also a not infrequent source of skin lupus, and this primary condition was often overlooked. Adverting to various methods of treatment, he observed that his experience had now given him ample material for testing different remedies. He advocated scraping, and he now employed this procedure more frequently than formerly. Although in itself not sufficient to cure, it took one a long way. An excellent application subsequent to scraping was the powdered nitrate of uranium which was both caustic and radio-active. Unfortunately it was painful. He found Unna's creosote-salicylic plaster most useful, but it must be given a thorough trial, applying the plaster until the disease had healed under it. Brook's ointment was also useful and the employment of caustics, such as acid nitrate of mercury or carbolic acid often effected considerable improvement. In the majority of cases X rays were helpful, but he would warn those who employed this remedy that the risk of X ray carcinoma was not to be forgotten. Careful watching of the patients diminished this chance. Twenty-two cases of carcinoma on lupus had come under his observation, but of these five had not received any X ray treatment. Both the Finsen and Kromayer lamps were useful and worthy of trial in certain cases. Tuberculin was employed either as an ointment, 5 per cent., or by injection. The former often gave good results, and was especially indicated in cases of lupus about the large joints where the fibrosis of the cutaneous tissues had produced limitation of movement. The ointment caused an absorption of this fibrosis and a consequent freer movement of the joint. His experience with injections went back to 1901 in Pick's clinic ; in those days the doses were criminal, and the consequent ill-effects caused this method of treatment to be abandoned. He now employed it successfully by the intensive method, giving gradually increasing injections twice a week of T.R. and then changing to P.T.O. Perseverence on the part of both medical man and patient was the essential factor for success in the treatment of lupus vulgaris, whatever methods were employed. In the future, however, lupus would, he thought, become more and more rare as a consequence of notification. In the case of ringworm and favus he had also an experience of 22 years to draw upon. Ringworm cases remained about the same in number until 1902, when a great increase was noted, the result of school inspection. Success was obtained in cases where regular attendance at hospital could be obtained, and the methods of following up cases by the authorities would in future ensure that attendance was regular. In conclusion, he pointed out that if lupus be notified it should not be included under tubercular diseases dangerous by contact to others ; he did not hold that lupus came under this heading.

The **PRESIDENT** considered that surgical treatment was best for early cases of lupus ; he had had considerable success also with radium and other light treatment. By chance he had discovered the useful properties of the yellow oxide of mercury both applied locally and injected into infiltrated masses. Where it was employed the fibrosis became much less marked, and in the case of lupus about joints movement became more free.

Dr. J. G. **TOMKINSON** (Glasgow) had observed 270 cases in the last nine or ten years. He advocated X rays in small doses ; he also spoke highly of Unna's salicylic and creosote plaster. He was not in favour of scraping, especially near orifices. Sanatorium treatment was not to be overlooked, and the State ought to eradicate all forms of tuberculosis. Sunlight, especially in Egypt, gave excellent results. In the case of ringworm they had the example of France. He now treated most of his cases at the special station erected by the Glasgow school board.

Dr. **HALDIN DAVIS** (London) emphasised the importance of early diagnosis ; he believed in surgical removal where possible, but did not approve of scraping. In the treatment of ringworm of the scalp he used Corbett's radiometer for judging the tint of the Sabouraud pastille. He also claimed that Leslie Miller's mica disc for excluding reverse current lengthened the life of X ray tubes.

Dr. A. W. **WILLIAMS** (Brighton) advocated the use of potassium permanganate. Alcohol should be avoided, as it caused a fall of the opsonic index for B. tuberculosis.

Dr. R. A. **BOLAM** (Newcastle-on-Tyne) said that the failures with lupus and ringworm were often the result of unmethodical treatment. In his district lupus was almost entirely a disease of the poor. He believed in scraping ; it was most necessary to investigate the nose and throat in cases where these regions might be the original site of the disease.

Dr. **MILNE** advocated scraping and also potassium permanganate. He still employed croton oil in the treatment of ringworm.

Dr. **GREEN** (Birmingham) found that in ringworm bald patches were liable to occur in 1 case out of every 350. Lupus crusts were often found to contain streptococci and staphylococci, and vaccines helped in such cases.

Dr. G. **NORMAN MEACHEN** (London) called attention to the value of in-patient treatment for lupus. Scraping was of value, but it must be followed by chemical applications, such as the acid nitrate of mercury. Tuberculin ointment might cause a general reaction, as in one of his cases. He did not advocate X rays for ringworm in children under 5 years of age.

Dr. J. D. P. **McLATCHIE** (London) believed tuberculin ointment useful both for diagnosis and treatment.

Dr. **HENRY MACCORMAC** (London) thought X rays were not of much use in the dry forms of lupus. He advocated surgery when the disease was early and localised. Hot air at 700° C., as employed by Ravaut, of Paris, was of great value in extensive cases, and gave a wonderfully good cosmetic result.

Dr. **NORMAN WALKER** then replied. At the conclusion of the meeting he showed four cases of lupus treated by various means, in all of which a marked improvement had taken place.

JOINT DISCUSSION OF NAVAL AND MILITARY SECTION WITH SECTION OF DERMATOLOGY AND SYPHILOLOGY.

THURSDAY, JULY 30TH.

Discussion on Syphilis.

Mr. J. E. R. **MACDONAGH** (London), in opening the discussion, said that until the cause was known and a sufficient number of years had elapsed it was impossible to say what the results of the present methods of treatment would be. The spirochæta pallida was not the cause of syphilis, but the only one phase in development of the organism. There was a tendency with all protozoal diseases for spontaneous cure, and treatment did something to prevent the life cycle from developing, but the tissue reactions did more. Salvarsan cured in early cases, but was useless in later ones. He had seen chancres where the organism had not been found, and he now relied more on clinical diagnosis. With regard to the Wassermann reaction, he did not think a negative result was an indication of cure. It might even occur in active syphilis, while a positive reaction might only indicate the increased protective capacity. Speaking of salvarsan, he considered that the present substance was much less potent than the earlier examples. In primary cases he gave five injections of salvarsan of 0·3, 0·3, 0·3, 0·4, and 0·5, followed up by mercury for one year. He treated many cases as out-patients with no ill results. In secondary cases he increased the number of salvarsan injections to nine and then prescribed mercurial treatment for two years. Recurrent syphilis should be treated as for secondary cases, while in the tertiary stage he gave enough treatment to cure symptoms. Mercury alone was indicated in congenital cases. The problem of syphilis of the nervous system was a difficult one. Where there was disease of the arterial system he followed the method used in secondary cases; tabes might be made worse and in the case of general paralysis little could be expected. Speaking generally, he regarded early cases of syphilis as curable, while in the later stages a cure had yet to be discovered. Cases of re-infection were not now so often reported as formerly. He thought they were due to a few spores which had remained in the body and subsequently developed when the anti-substance had ceased to be elaborated.

Lieutenant-Colonel T. W. GIBBARD, R.A.M.C., and Major L. W. HARRISON, R.A.M.C. (London), in an interesting and careful paper, said the question now was not whether salvarsan was a specific remedy for syphilis, but rather how much and in what way it should be given to obtain the best result. Although opponents still existed they were a fast diminishing band. When mercury and potassium iodide were the only remedies the wards at the military hospital were full of syphilis. Now out of 285 cases, only 9 relapses had occurred. The remedy was not a dangerous one, for only one fatality had occurred in all the cases treated in the British army, nor had they met with eye trouble or lesions of cranial nerves which were not amenable to further salvarsan treatment. On two points there was not complete agreement, whether salvarsan should be used alone and in what amounts it should be given. Whatever method was followed the immediate results were good, but to really arrive at an idea of its permanent value it was necessary to keep cases under observation for a long time. Most authorities were now in agreement that salvarsan should be followed up by mercury. If it were used alone it must be given over a long period intravenously first, and then intramuscularly. This was very costly, and therefore on grounds of economy, if for no other reason, the combined salvarsan and mercury treatment was preferable. The great disadvantage of the Wassermann test was that it did not say whether the spirochæta was dead or only asleep, and the blood serum gave no hint as to the condition of the cerebro-spinal fluid. They had gradually increased the length of the initial course of salvarsan and the amount of mercury. The best results had been obtained by a course consisting of one injection of salvarsan, five of mercury; one of salvarsan, five of mercury; and finally one of salvarsan; in all three salvarsan and ten mercurial injections. Where relapses occurred even more vigorous treatment was indicated than for secondary cases. They now distinguished between early primary cases with a negative reaction and early primary with a positive reaction which they included with early secondary cases.

In the discussion which followed, Dr. J. G. TOMKINSON (Glasgow) said Mr. Macdonagh's paper was somewhat revolutionary, but that did not diminish its value. He personally believed in the combined method of treatment, and he thought it should be prolonged. They could only arrive at an idea of the efficacy of any method through observation extended over many years.

Dr. J. A. NIXON (Bristol) thought it was unwise to try and elaborate any routine method of treatment. The interval between injections of salvarsan depended rather upon the manner in which the patient reacted, and it was important to observe the effect of each dose. He was in favour of the combined treatment, but it was difficult to get patients to undergo a full course of mercury when all their symptoms had been cleared up by the salvarsan. The question of economy should not have any effect in deciding which method should be followed.

Dr. HENRY MACCORMAC (London) said he thought everyone who had to treat syphilis realised how much more difficult it was to influence the Wassermann reaction in old-standing cases. But the same difficulty was found in chronic diseases of bacterial origin. For example, how difficult it was to cure B. coli infections or those due to a staphylococcus when they had obtained a hold. He personally, as the result of five years' experience, placed considerable reliance on the Wassermann method; he now employed Desmoulière's antigen, one containing cholesterin. If anything, it was perhaps too sensitive. His usual method of treating syphilis was to give three injections of salvarsan and then two years of mercurial treatment. This was anyway erring on the side of caution. In over 1000 injections he had had no bad results. The value of salvarsan in rendering patients non-infective to others was perhaps one of its most important functions. For example, patients with lesions of the mucous membrane of the mouth often took their meals in public restaurants and were a source of danger to the community.

Dr. J. C. MACWALTER (Dublin) thought that the time was too short to say whether salvarsan was a cure or not. The whole question of the treatment of syphilis by salvarsan reflected intense discredit on the medical profession. The number of doses now given was seven, whereas previously one was considered sufficient. It was not proved that any one organism was the cause of syphilis.

Lieutenant-Colonel MELVILLE, R.A.M.C., thought it was now considered that the spirochæte was really a bacterium. It was very important to the nation and taxpayer to diminish syphilis in the army. Salvarsan certainly cured soldiers while they remained in the service.

Dr. W. B. CRAWFORD TREASURE (Cardiff) considered there was a danger of undue pessimism. He asked, Could they rely on the Wassermann test now? He would also like to know which was the better preparation, salvarsan or neosalvarsan, and whether soluble or insoluble mercurial injections should be used?

Mr. MACDONAGH, in his reply, said he believed that they all agreed that sufficient time had not yet elapsed to enable them to form a clear judgment of the value of salvarsan. He could not say whether salvarsan or neosalvarsan should be preferred. Personally he employed neosalvarsan, as it was easier to use. Inunction was undoubtedly the best way to give mercury, but it required a skilled rubber. Intramuscular mercury was next best, and he did not doubt that the insoluble preparations should be used. He found in his own practice that cerebro-spinal syphilis was one of the most common recurrences, hence the importance of early diagnosis and thorough treatment.

Lieutenant-Colonel GIBBARD, replying for himself and Major HARRISON, said they did not believe in any routine method of treatment in syphilis, but they liked to have some standard to work upon, while each case received individual consideration. The question of economy was an important one, although there was never any difficulty in getting all they required from the War Office. They were unable to say whether salvarsan was better than neosalvarsan, but they were quite sure that the insoluble mercurial salts were preferable to the soluble ones.

FRIDAY, JULY 31ST.

The day's proceedings were opened by Dr. TOMKINSON, who contributed a paper on

Four Cases of Lahore Sore.

The patients were a father aged 56, a daughter aged 10, a son aged 8, and a son aged 11. In all cases the disease first appeared as a red papule of indolent character, spreading gradually on to the surrounding skin. Subjective phenomena were slight or not noticed. There was a tendency to crusting, and in some cases the lesions were multiple. Treatment had usually been made with solid carbonic acid snow, but X rays were also useful. A differential count of the blood suggested some disturbance of the ratio of polymorphonuclear and mononuclear elements—diminution of the former and increase of the latter. No abnormality was observed in the red cells. In the photomicrograph of the blood film a large endothelial (?) cell was seen containing many of the parasitic bodies, round or oval, mainly the latter, and also two masses of chromatin, one considerably larger than the other. The onset of the disease appeared to be related in some way with the cold season. The drinking water was obtained from deep wells, but near the house there were two stagnant pools, a possible breeding ground for mosquitoes. The patients slept in the open air in the hot season, and the children state that they habitually slept on the right side. In reviewing the above details he remarked that the absence of subjective symptoms, save in the elder brother's case, and then only slightly, was a notable feature. The uniformity of the site of the lesions in the case of the three children was important. Each child had a lesion approximately on the middle of the left cheek, and the two sons, in addition, had each a lesion on the left forehead. The daughter had no forehead lesion; her greater quantity of hair might account for this. The proximity of the stagnant water, the sleeping in the open air, the assumption by the three children of the right lateral decubitus, and all their lesions being situated on the left side of the face, were strong presumptive evidence in favour of the opinion that the causative parasites, leishmania tropica, were conveyed by insects, and ones, it might be added, obviously of nocturnal habits.

In the discussion which followed the PRESIDENT suggested local injection of some mercurial preparation. He thought that was as likely to cure as salvarsan, which some had advocated.

Dr. R. CRANSTON LOW (Edinburgh) saw a case two years ago, the disease appearing on the edge of the ear. The patient had been absent from India for two years. The diagnosis was confirmed by the discovery of the parasite.

The next paper was contributed by Mr. J. E. R. McDONAGH (London) on

The Rationale of the Wassermann Reaction.

He held that the reaction was an adsorption phenomenon. In other words, the lipoid-protein molecules coalesced and thereby became precipitated. Precipitation deionised complement and destroyed its oxydases; therefore, there was no electrically charged protein molecule to bring about hæmolysis. A trace of an amino acid or a fatty acid might readjust complement, and this was one of the reasons why sera became negative after salvarsan and also why some sera from active tertiary cases gave negative results. There appeared to be no necessity to employ all the words which had recently been coined in connexion with immunity work. These appeared to have carried them further in the dark than they were before their invention. Specificity was dependent upon the physical molecular configuration and not the chemical molecular configuration of the lipoid-protein particles. The action of antigen was due to the amino acid molecules. In all the true bacterial complement fixation tests these amino acid molecules were specific. In syphilis they merely acted by increasing the adsorption between complement and antibody (reagin). Antigen was not essential in the Wassermann reaction, as the adsorptive capacity of syphilitic sera might be great enough to fix complement; such sera were called amphoteric sera. If formalin was added to the extract of the syphilitic liver its antigenic action was increased, because the size of its colloidal particles was increased, hence its adsorptive capacity or its anticomplementary action was raised. Reagin had its origin in the mononuclear leucocytes, and some of the reagin in the cerebro-spinal fluid came from the cells of the choroid plexuses and the Nissl's granules of the nerve cells. Chemically, reagin was a lipoid-globulin. Complement was the lipoid-globulin portion of normal serum. It was the same substance as antibody, and only became antibody when the call upon the protective mechanism was increased. The action of complement was dependent upon the oxydase ferments which were attached to the protein molecules by means of the ions, and its action was one of adsorption.

Dr. A. WINKELRIED WILLIAMS (Brighton), in a paper on

Keratodermia Blennorrhagica,

stated that the disease was rare. Only four cases had been reported in Great Britain, and on the continent 17 cases had been collected. The clinical features were fairly typical and identical in all cases. Hard yellow transparent domes were found on a reddish keratotic base. They might form into ridges like mountain chains, and were sometimes accompanied by a diffuse keratosis of the soles. The lesions might begin as a telangiectatic spot, or red papules which soon were transformed into horny cones or domes, peeling off and leaving a bright red area. In all cases except two gonorrhœal arthritis was a complication. The condition was inoculable experimentally, but the inoculated areas must be covered by protecting watch glasses. In the case described there was a history of gonorrhœa 20 years ago, followed by a gleet cured 10 years ago. The patient was also the subject of what appeared to be rheumatoid arthritis. In his case the lesions were found on hands, fingers, soles, and legs. The only treatment was a gonococcal vaccine, and this not only cured the skin disease but also the arthritis. It was fortunate for the patient that he developed a skin eruption, as otherwise his joint condition might not have been cured.

Dr. HALDIN DAVIS (London) read a paper on

Infantile Eczema.

This disease, he said, formed a large proportion of cases in children's hospitals. It was necessary in such a discussion to define what one meant. He included conditions associated with primary vesiculation beginning on the face and tending to spread widely on all cutaneous surfaces. A reminder was often found in adult life on the bends of the elbows and in the popliteal spaces. Two theories as to the causation were held. The metabolic was mainly upheld by the French and German schools under the terms of arthritic and exudative diatheses. The second theory supposed that the disease was the result of external irritance, and he favoured that view. Many substances, for example, soap, were responsible, and the origin about the head, the only part of the body exposed in babies, was suggestive. He believed these babies were more delicate than ordinary children, and often died from bronchitis. The treatment was often very tedious, and he relied mainly on bland protecting substances, especially zinc oxide. Sometimes weak solutions of silver nitrate were helpful. In the most resistant cases small doses of X rays—not more than one-third of a pastille—not only diminished the itching, but cured the disease.

An interesting and full discussion followed this paper. The PRESIDENT said he allowed the infants to scratch themselves, cutting the nails short and rendering them aseptic as far as possible. He believed in Lassar's paste as a local application.

Dr. NORMAN WALKER (Edinburgh) did not find children suffering from this disease especially delicate; that was not his experience in Edinburgh. One of the most important things was to supply sufficient ointment so that the treatment might be continuous. The parts ought to be covered up and scratching prevented. He quite agreed as to the value of zinc oxide, chiefly because it was inert. Lassar's paste he thought too irritating. As a remedy to lessen itching and so stop the desire to scratch, he wished to remind them of the value of tar lotions. Diet should not be altogether overlooked, and mercurial purges were of great use.

Dr. J. C. MACWALTER (Dublin) did not believe in covering up the parts, and also permitted the patient to scratch freely. Nature suggested scratching, and he would allow nature to act in the way it had intended.

Dr. J. A. NIXON (Bristol) said that speaking as a general physician he could throw some light on the occurrence of death in babies who had eczema. They seemed to get well of the skin disease and then often died suddenly later; they rather suggested cases of status lymphaticus. Bronchitis and broncho-pneumania were also causes of death. He believed in some cases the eczema was really of an urticarial nature, although external irritation was responsible for many.

Dr. J. CRABB (London), in his capacity as public vaccinator, often saw eczema behind the ears. He thought this was the result of the mothers using a dirty towel.

Dr. CRANSTON LOW (Edinburgh) did not altogether agree with the previous speakers. Infantile eczema, he held, was a variety of seborrhœic dermatitis. The origin on the scalp and its spread downwards, involving the flexures, favoured this view. Three distinct conditions were required to produce the disease—susceptibility, irritation, and the seborrhœic organism. He found sulphur or ichthyol useful as local applications.

Dr. DAVIS, replying, said he was much complimented that his paper had given rise to so much discussion. Dr. Nixon had answered the question as to the cause of death in these cases. He himself had failed to get good results with sulphur or ichthyol. He agreed that grey powder was a valuable adjunct to external treatment.

Dr. MACWALTER, in a paper on the Use of Antimony in Syphilis, stated that there were three true specific drugs for this disease, mercury, arsenic, and antimony. He had employed antimony for 15 years; it never gave rise to optic neuritis or the other poisonous effects of arsenic. He thought it especially useful for the skin manifestations of syphilis.

The PRESIDENT then declared the section closed. He desired to thank his fellow officers, but especially Dr. J. D. P. McLatchie, who had had so much to do with the work of the section. Dr. NORMAN WALKER then proposed a vote of thanks to the President, seconded by Dr. MACWALTER, which was unanimously accorded, and the meeting then terminated.

TROPICAL MEDICINE SECTION.

WEDNESDAY, JULY 29TH.

President, Professor W. R. J. SIMPSON, C.M.G.

President's Address.

In his opening address Professor SIMPSON alluded to the fact that the papers to be read before the section were numerous and the time limited, so that he felt constrained to make his introductory remarks as few and as concise as possible. In welcoming the members of the section his thoughts turned to the first meeting of the Tropical Diseases Section at the meeting held at Edinburgh sixteen years ago, and to the great advances in our knowledge which had taken place since that time. At that memorable meeting Sir Patrick Manson, the first president of the section, delivered an address entitled, "An Exposition of the Mosquito Malarial Theory and its Recent Developments," in which he dealt firstly with the behaviour of the malarial crescent outside the human body and its evolution into sphere, and flagellated bodies; also of his own far-reaching deductions drawn from his observations concerning the nature and probable further development of the parasite in the mosquito, based upon his own original work on the life cycle of the filaria in the mosquito. Secondly, Sir Patrick Manson had given an account of the brilliant discoveries of Sir Ronald Ross on the development and migrations of the malarial parasite in the mosquito and its transference, when mature, from the mosquito to another host. At that meeting a telegram was read from Ross announcing to Manson that he had succeeded in infecting sparrows with protosoma through bites of mosquitoes which had been fed on birds infected for a sufficient length of time to allow of the parasites to pass through their life cycle and to find their way to the proboscis of the mosquito. It was felt at the time that the master key had been found with which to open the door behind which were concealed the secrets and mysteries of the prevalence and prevention of a wide spread and destructive disease. Time had confirmed the correctness of Ross's observations. In this manner new lines of research were opened up, and new methods discovered as to the conveyance of disease. Thus a revolution was caused in our views as to the transmission of protozoal diseases, and by these discoveries men like Colonel Gorgas and others in the tropics had been able to deal successfully with insect-borne diseases which had prevented the economic development of large areas in the tropics. In this way the world owed a large debt of gratitude to Manson and Ross, whose labours had been followed and developed by a host of other workers such as Leishman, Bruce, and Castellani, some of whom had secured a place in the literature of tropical diseases. Professor Simpson regretted that with a few exceptions, such as Sir Alfred Jones, our wealthy men in this country had not awakened to the fact that endowments for the prevention of disease were as important as those for hospitals. England could not boast of such magnificent endowments for scientific research as those which Rockefeller and other men of means had placed at the disposal of Americans for work on tropical diseases. He hoped, however, that perhaps in time similar encouragement would be forthcoming for our universities and schools of tropical medicine. Meanwhile the demand for research work was being slowly and partially met in our own tropical possessions and in India by the establishment of laboratories. But the danger threatening the newly established laboratories was that research would be swamped by the amount of routine work required of them, and that their finances and administrative provisions for investigation would become inadequate. Professor Simpson claimed that we should not rest satisfied with the application of hygienic measures to protect Europeans in the tropics, but should continually apply our existing knowledge to improve the health conditions of native communities. Let us have, he said, a period of scientific and practical application following one of scientific research, or, better still, let them go hand in hand. After describing some of the unhealthy conditions found in the tropics attention was drawn to the high death-rates in such places. Some figures compiled by Colonel W. G. King, C.I.E., I.M.S. (retired), were quoted, showing that the death-rate in India was more than double that of England, and that the expectation of life at birth for an Indian male was only 22·59 years, whereas it is 46·04 in our own country.

Kala-azar and Allied Conditions.

This discussion was opened by Fleet-Surgeon P. W. BASSETT-SMITH, C.B., R.N., who first of all reviewed the research work and the knowledge which had accumulated during the last few years concerning leishmaniasis. He gave a short account of the disease and of its geographical distribution; he called special attention to the prevalence and importance of cutaneous manifestations of the leishmania infection found in South America. The work of Rogers in Assam and of Patton in Madras was described. The occurrence of kala-azar on the shores of the Mediterranean observed in recent years was discussed. With more accurate methods of diagnosis the disease was now more easily recognised. The methods by which the infection was believed to be spread and Nicolli's observations of the prevalence of the disease among dogs in Tunis were reviewed. So far the evidence incriminating the mosquito as a carrying agent of leishmania was slight, but it could not be denied that transference of the disease by blood-sucking insects was possible. The flea was under suspicion of transferring the infection from dog to dog or from dog to man. In South America flies of the Tabanidæ kind were the probable agents in infecting persons. Laveran believed that Indian kala-azar and the leishmania infantum of the Mediterranean littoral were one and the same, and that the parasite was L. donovani in both cases. The means of distribution were still uncertain. Fleet-Surgeon Bassett-Smith then gave some particulars of an interesting case treated by himself with atoxyl at Malta, and showed a temperature chart illustrating the variations in the pyrexia in this infection. At the conclusion of the session the author gave a demonstration, with microscopic slides, of the leishmania parasites in a side room.

Professor UMBERTO GABBI (Rome) referred to the details of a number of experiments which had been made on young dogs by Grassi, Bucelli, and others with a view of showing that the dog-flea was the carrier of leishmania infection on the shores of the Mediterranean, but Professor Gabbi had come to the conclusion from his own researches that leishmaniasis in the dog is not transferred to other hosts by the dog-flea.

Dr. DANIEL E. ANDERSON (London) described some cases of "uta" which he saw in Peru, in which half of the face had been eaten away by the disease and the nasal cartilages destroyed as in lupus. Recently it had been shown that "uta" was a form of leishmaniasis, though up to the last the Peruvian doctors had refused to believe that it could have any relationship to that malady. The appearances had some resemblance to gangosa. Syphilis might also have produced something like these results, but that disease was not known in Peru till after the arrival of the Spanish conquerors, although "uta" was then known.

Dr. P. H. BAHR (London) said that gangosa affecting the soft parts of the nose was always present in places were yaws was endemic. He also called attention to the rarity of kala-azar in Ceylon although so near to Madras, where the disease was often found.

Professor ALEXANDER FERGUSON (Cairo) said that in Egypt they were greatly interested in leishmaniasis. In many cases he had seen with some clinical resemblance to kala-azar he had failed to find the leishmania parasite.

Dr. G. A. WILLIAMSON (Aberdeen) had seen cases in Cyprus similar to those described by Professor Ferguson.

Dr. BAHR here remarked that they had had cases in London of this kind which were diagnosed as tropical splenomegaly.

Mr. JAMES CANTLIE (London) asked Professor Ferguson if the spleen had been removed by operation in any of the cases described by him.

Professor FERGUSON replied that 25 cases of removal of spleen in Egypt had been published. In this connexion Dr. BAHR said that in Banti's disease removal of the spleen had taken away the cause of the disease.

Captain W. E. MARSHALL, R.A.M.C. (London) mentioned cases of apparent kala-azar in the Soudan in which puncture of the liver had yielded negative results as regards the presence of the parasite. He said that the parasite often disappears for a time and then recurs. He mentioned a case in which a young monkey exposed to the chance of infection with a sick monkey in the same cage had contracted the disease, though the manner in which the infection was transferred could not be stated. He said both monkeys were infested with lice.

Dr. F. M. SANDWITH (London) asked if the lice had been examined by Captain Marshall for leishmania. There might perhaps have been an intestinal infection.

Professor GABBI, replying to some minor points, asked permission to speak in French, in which he could more clearly express his meaning than in English.

Fleet-Surgeon BASSETT-SMITH then briefly replied, stating that there was a general consensus of opinion that the constitutional forms of kala-azar are the same disease. He was careful not to give prominence to transference of the infection by one particular agent. Some of the experimental work on the subject, as had been pointed out by Professor Gabbi, could not altogether be relied upon. Maybe there were different carriers in different areas. But much more investigation was needed to settle the question.

The Ankylostomiasis Campaign in Egypt.

Dr. A. F. MACCALLAN (Egypt) gave an outline of the recently instituted campaign organised against ankylostomiasis in Egypt. Up to a few months ago no serious effort had been made to check the disease. The preliminary investigation began in September, 1913, under the supervision of a committee of which Professor Loos and Professor Ferguson were members, along with representatives of the Egyptian Public Health Department. They began merely as an annexe to one of the general hospitals, and this was increased to the establishment of a travelling hospital for 100 patients at a town of 16,000 population some ten miles from Cairo, with suitable staff, along with a laboratory for examination of fæces, blood, &c. A grant of £12,000 was available for the work during the present year, £6000 of which were provided by the Government and £6000 by the International Health Commission. The scheme now comprised one large travelling hospital with four other smaller ones for country districts, and in addition temporary use was made of buildings in some towns. So far 1011 cases had been treated, and 628 were, up to the present, certified as cured. But they had been greatly hampered in their work by want of a skilled staff. The treatment was largely by thymol and salines such as sodium sulphate. Examination was to be made of scholars in the schools, to estimate, if possible, the incidence of ankylostomiasis in certain districts. Latrine provision was admittedly insufficient for the people. There were difficulties in establishing a conservancy system and in carrying out drainage works. Leaflets with advice concerning the causation of the disease and its prevention were being distributed, and short lectures were given in hospital to the patients so that they might carry back to their homes knowledge concerning the avoidance of infection. Bilharzia infection also was common among the patients, the amount varying in different districts. Lord Kitchener had given great support to the campaign, and it was largely due to him that a beginning had been made in measures which would enormously improve present conditions; he had in various ways helped the campaign.

Dr. SANDWITH, who had been in Egypt this year, added his testimony to the great assistance rendered by Lord Kitchener in the efforts being made to reduce ankylostomiasis in that country. He pointed out that pellagra was often found along with ankylostomiasis. Some particular drug was wanted which would destroy the parasite without affecting the patient. Oleum chenopodii had given remarkably good results in Java and elsewhere, but when tried in Egypt it had been found quite inert. He could only explain this by supposing that the oil supplied to Egypt had been weakened or altered in some way so as to interfere with its action. But this oil ought to be further tried and not lost sight of.

Dr. D. E. ANDERSON (London) remarked upon the association of pellagra and ankylostomiasis in the West Indies.

Professor LLEWELLYN C. P. PHILLIPS (Cairo) detailed some experiments he had made with chloroform water and castor oil for the treatment of this infection. He placed thymol first for its beneficial action in the treatment of ankylostomiasis.

The PRESIDENT wanted to know how much of the money available for the campaign was to be devoted to treatment of ankylostomiasis cases, and how much for prevention of the disease in Egypt in the future. Treating a community, as Koch had once suggested, by quinine for malaria did not bring about the expected results, and recourse had to be had to anti-mosquito measures and drainage works. It was necessary not only to treat the patients, but the causes of the malady must be dealt with as well.

Dr. MACCALLAN briefly replied.

Is Emetin Sufficient to Bring About a Radical Cure in Amœbiasis?

Professor LLEWELLYN PHILLIPS, in his paper on this subject, described some cases of dysentery which seem to be quickly cured by emetin, but in a number of them there was a tendency to relapse. The specific parasite, the amœba, he said, usually dies quickly when passed out of the body in the stools, but unfortunately there is an encysted form of the parasite which persists in the intestine even after apparent cure by emetin, and such a patient becomes a carrier and a danger to others. Some drug which can destroy the encysted form of the parasite is necessary. Calomel is useful in some instances and thymol might be tried, but more investigation was needed.

This paper was discussed by Dr. SANDWITH and Dr. BAHR, the latter giving his experience of the treatment of amœbiasis in Ceylon.

Secondary Changes Due to the Presence of Bilharzia Eggs in the Spinal Cord.

A paper on this subject was read by Professor ALEXANDER FERGUSON, who said his communication was rather a preliminary note on the subject. He mentioned the wide distribution of bilharzia infection in the body of the person affected; it could be found in the cortex of the brain, in the heart, lung, spleen, liver, and kidney. Natives of Egypt suffering from the disease sometimes had anomalous nervous symptoms, with incompetence, paresis, or paraplegia. Professor Ferguson showed some microscopic specimens to illustrate his paper. In conclusion, he stated that he proposed when he had collected more material to make a further communication on the subject.

THURSDAY, JULY 30TH.

The Education and Position of the Sanitarian in the Tropics.

This discussion was opened by a paper prepared by Colonel W. G. KING, I.M.S., C.I.E. (retired) (London), which was read by Mr. JAMES CANTLIE in the absence of the author through illness. It was contended that the prevention of disease should be as thoroughly carried out in the tropics as at home. The direction of public health matters was often controlled by laymen without the special knowledge which was essential, and the medical officers, as in India, for example, detailed for preventive work had often mixed duties to perform, and therefore were unable to give their sole attention to sanitation and the prevention of disease. In England the executive sanitary officers could easily consult specialists in any difficulty, obtaining the requisite advice in a few hours; they could also forward material to be examined by expert chemists or bacteriologists, and have the results in a short time. In the tropics no such assistance was available, except in a very few instances. As it was absolutely necessary that expert advice should be procurable in the future in our colonies and dependencies, Colonel King suggested that a change should be made in the education of those who intended to devote themselves to the prevention of disease abroad. It was impossible to tax the human brain power beyond a certain point, and as the student's time and money were limited, it should not be necessary, Colonel King thought, for the future sanitarian to sacrifice so much during his five-years curriculum to general medical education. His course of study should, therefore, be so arranged that certain subjects dealing, for example, with curative medicine, operative surgery, and midwifery, might be omitted, and the time thus gained be given to special training in the sciences that are directly concerned with hygiene and preventive medicine. By this means in the course of time a supply of specialists in applied hygiene would be evolved and distributed in various parts of the tropics where their services were most urgently required. Already tropical research in skilled hands had opened up wide fields for action, and brought into occupation by man vast areas previously uninhabitable with any safety owing to the unhealthy conditions that existed. He would separate the curative service from the preventive, and officers of the latter branch should have such a position as would enable them to carry out researches or devise measures for protecting the public health, untrammelled by fear of loss of office and subject to no interference of lay officers. The preventive staff should be subordinate to no other department. Already proof was available as to the advantages of giving the sanitarian in the tropics a free hand. The success of Colonel (now Surgeon-General) Gorgas in the Panama Canal Zone was one instance. The health officers in the German colonies had similar freedom and did admirable work. It would be necessary in future for the local governments to provide laboratories. Tropical public health services should be organised somewhat on the above lines as soon as possible. A diagram was shown to the section representing the way in which the preventive and curative services in a colony, while remaining separate, could work on side by side. Colonel King suggested that the section should pass a resolution in the above sense.

The President said that while agreeing with much of what Colonel King had advanced he could hardly concur in the change in medical education proposed by him for future tropical sanitarians. In his own opinion it was absolutely necessary that everyone aspiring to become an officer in the preventive service of a country should first of all go through a full medical and surgical curriculum, and that after he was qualified he should commence his special training in public health and hygiene. A good sanitarian must first become a well-trained medical man. Much required yet to be done in the training of men to undertake sanitary work in the tropics, and although the D.P.H. examination was a valuable test, something needed to be added for those intending to qualify for the tropics. England has a public health service, independent of the curative service, and this might easily be secured also in our colonies and dependencies. There would be advantage in engineers intending to take up work in the tropics receiving instruction in tropical sanitation and the conditions with which they might have to deal with later on.

Dr. J. Campbell Graham (Sumatra) gave his experience of public health in a Dutch colony. Little or nothing was done by the government of the island; everything in the way of prevention of disease was left to the medical men or to private enterprise. It was to the credit of the planters and their own medical advisers that drainage of coolie quarters and other work on their behalf was carried out.

Dr. Anderson agreed with the President as to the education of the sanitarian. As a result of visits to the colonies, he was of opinion that one must not expect good results till good men were at the head of the affairs of their departments. All preventive officers in the tropics should hold the D.P.H. He would not disturb the present occupants of the posts, but as vacancies occurred only men duly qualified by public health training should be appointed. In addition to the D.P.H. these men should undergo also a course at one of the schools of tropical medicine, the course for which should be made longer than it is at present. He would have entrance to the public health service in the colonies only by competitive examination; and if selection of colonies were allowed to candidates they should be required to make a special study of the prevalent diseases of that colony to which they were proceeding.

Lieutenant-Colonel J. Penny, I.M.S. (Burmah), said he believed that in the future the curative and preventive services in India would be kept separate. The foundations had been laid for appointing a large number of sanitary inspectors in towns and districts. In his opinion all the higher officials in the public health service should have had special training in applied hygiene and preventive medicine.

Mr. James Cantlie thought that the proposed specialising of the sanitarians' medical education before qualification must be condemned. The full medical training must be carried out. He quoted Sir Patrick Manson as a type of investigator that should be held up as a model to others. His early investigations were made with a view to cure his patients and prevent the recurrence of their maladies Practical medicine had greatly stimulated research. He said he would propose a resolution at the close of the discussion.

Dr. R. Bruce Low (London) spoke of the need for trained sanitary inspectors in India and the colonies. It would be of advantage to send out experienced certificated sanitary inspectors from this country, who would assist in training the native sub-inspectors, and in this way a basis for gradual improvement in local sanitary conditions would be established. Many native medical men from India were appearing now for examination for the D.P.H. in this country, in order to take up posts in Indian cities and districts. This was a sign that great improvements in the sanitary conditions of Indian towns and districts were about to be carried out.

The President thought that some of the training of sanitary inspectors for the colonies could be carried out at the schools of tropical medicine. He agreed with the view that civil servants for administrative posts abroad should undergo a course of instruction in hygiene, for as a rule such officers could scarcely ever see the necessity for medical preventive measures, but looked only at their cost.

Mr. Cantlie then proposed the following resolution, which was seconded by Lieutenant-Colonel H. R. Woolbert I.M.S. (London) (retired), and after being put to the section was passed unanimously, namely:—

> Whilst agreeing with Colonel King in his admirable scheme for the creation of separate curative and preventive medical departments in the tropics, this meeting considers that there should be no interference with the general education of the medical students, but that specialisation in hygiene should be entirely a matter of post-graduate training and work.

The Bionomics of Maltese Phlebotomi.

Captain P. J. Marett, R.A.M.C., read a paper on this subject, and after the meeting he showed a number of microscopic specimens in illustration of his remarks. He described the conditions in which the fly lives and breeds; it prefers darkness for the breeding place along with some moisture and quiet. The food-supply was often obtained from the excrement of various other insects, such as wood lice. A certain temperature, about 75° F., was best for developing the fly, which haunts the interior of rubble walls, caves, and other places; being very small and elusive, it was not easily recognised even when sought for. There were three varieties of phlebotomi in Malta—viz., P. papatassi, P. minutus, and P. perniciosus. All three transmitted the virus of the phlebotomus, or "three days fever." These flies frequent dwellings, but as they did not go high the top rooms were comparatively free. By the knowledge gained respecting the fly and its habits measures have been devised for protecting the garrison of Malta against its fever-giving bites. In Malta the fly was infected by a species of fungus (empusa).

Sandfly Fever.

Colonel C. Birt, R.A.M.C., who was unable to be present, sent a paper on this subject which was read by the secretary of the section, Dr. G. A. Williamson. Colonel Birt stated that the recognition of sandfly fever had been established by experiments on human subjects who voluntarily lent themselves to the tests, and the fact was therefore of some special scientific interest. The disease, he said, attacks by preference newcomers in the infected locality, and after 12 months' residence in an affected area the susceptibility appears to diminish. The onset is sudden, usually chills, severe headache and pain at the back of the eyeballs, backache, stiffness of the muscles of the body, drowsiness, flushing of the face, swelling of the eyelids, loss of appetite, and pain in the epigastrium; vomiting was noted only in a quarter of the cases—constipation is the rule. Epistaxis is not uncommon. The temperature rises rapidly to 103° or higher, but falls gradually on the third or fourth day. The pulse does not quicken with the rise in temperature, but remains about 80°. Lethargy and dyspepsia remain for a fortnight after subsidence of the acute symptoms. Relapses are sometimes caused by too active exercise during convalescence. Sandfly fever was formerly confused with ague. About 5000 to 6000 cases occur annually in India among the troops and Europeans. Many sandfly fever attacks have been regarded as influenza, or recorded as "pyrexia of unknown origin." Aspirin relieves the pain, and formerly much quinine was wasted in trying to combat the acute symptoms with this drug. By the measures employed to prevent the disease among the troops the number of reported cases had fallen in Malta from 300 in 1908 to 104 in 1912.

Captain G. F. **Graham**, I.M.S., also read a paper on Sandfly Fever based on notes of more than 700 cases which he had treated from 1911 to 1913 in India. The disease was first noticed in India by Major R. McCarrison, I.M.S., who gave it the name of "three days' fever." It appears, he said, to be more frequent in the subtropical than in the tropical zone. These sandflies cannot live seemingly at an elevation over 7000 feet. For some unknown reason hot and dry seasons seem to favour epidemics, according to the author's experience in Chitral. On one occasion he observed that a heavy rainfall checked an epidemic. The two forms of sandfly noted in connexion with the outbreaks he had seen were Phlebotomus papatassi and P. minutus. These flies easily pass through the meshes of an ordinary mosquito curtain. No specific parasite has yet been identified for this disease. One attack, as a rule, confers immunity, but this is not constant. Some epidemics are more severe than others, but the reason for this is not known. In India the incubation period is from two to four days. Quinine is of no use in the treatment, but aspirin gives relief to the headache. Diagnosis is not difficult in epidemic times. None of his cases proved fatal. Prophylaxis for soldiers is by evacuation of the camps if possible and the use of close-mesh mosquito curtains round about the patients so long as they are infective. Spraying walls with some insecticide had been tried.

Professor **Gabbi** gave an account of some epidemics of sandfly fever in various parts of Italy, and especially in Sicily, at Messina and in its vicinity. The early cases were often mistaken for influenza. In certain instances there was strong suspicion that the disease had been imported by ship from Dalmatia and elsewhere. Professor Gabbi exhibited a spot-map showing the distribution of the sandfly fever epidemics mentioned in his paper.

Captain J. W. **Houston**, R.A.M.C., read a paper on Sandfly Fever in Peshawar, giving his views on the disease from the Indian station point of view. Persons at all ages and of both sexes were attacked. The longer the troops remained in an affected locality the ratio of attacks was correspondingly diminished. The newcomers were most susceptible. The fly most commonly found in Peshawar in connexion with this fever was Phlebotomus minutus. Captain Houston gave some figures as to the cases of sandfly fever at the military station from 1910 to 1913, in all 2454 being reported in that period.

Professor **Llewellyn Phillips** made some remarks upon the incidence of the disease in Egypt.

The **President** said that sandfly fever in its various aspects had been exhaustively treated by the various papers, and little was left for him to say. He drew attention to the phlebotomus fly frequenting rubble walls, which were common enough in many places, and when near dwellings were a constant source of danger to the inhabitants, because these kind of walls harboured all sorts of insects and vermin, including rats and snakes as well as sandflies.

Friday, July 31st.

Mr. **James Cantlie** gave a demonstration of the

Surgical Treatment of Colitis and Post-dysenteric Conditions.

He described the anatomy of the sigmoid flexure, which he regarded as the most important part of the large intestine, a point which he thought had not been fully recognised; it was the seat of many pathological troubles. He showed diagrams of this part of the intestine and spoke of its functions. At the point where the sigmoid flexure joined the rectum there was often local chronic inflammation and swelling, proceeding sometimes to ulceration. When the sigmoidoscope was used and came in contact with this point of junction there was an immediate feeling on the part of the patient that he must pass a stool. When the swelling and congestion of this part of the bowel were great, there was a feeling of always wanting to go to stool, causing strain and great discomfort. The trouble was localised in about two inches of the sigmoid flexure. There was often an alternation of hard and soft stools with mucus and sometimes with blood. He did not think the diet of the patient had any effect one way or the other. The swelling caused obstruction, almost amounting to stricture, in some cases. The examination with the sigmoidoscope not only aided the diagnosis but did good if the instrument could be passed through the obstruction. He never used an anæsthetic when passing the sigmoidoscope and never had any ill-effects from it. He had found good results in treatment by touching the swollen portion of the sigmoid flexure with pure carbolic acid; and he had used as a wash a solution of pure metallic colloid silver, which was non-toxic, however strong the solution might be. In bad cases he opened the colon above the obstruction and passed the sigmoidoscope down to the swollen part, day by day, till it could be passed through the obstruction. Mr. Cantlie, with the aid of drawings on the blackboard, made his remarks very clear. He also described a case, which he had treated in conjunction with Dr. J. M. Atkinson, of hepatic abscess lying between the liver and the diaphragm, and which had been evacuated by means of a long trochar and cannula with successful results.

The **President** added a few remarks of commendation on the clearness of Mr. Cantlie's demonstration on the blackboard of the anatomy and pathology of the sigmoid flexure. There was no further discussion of the subject.

The Comparative Diseases of the British West Indian Colonies.

Dr. D. E. **Anderson** read a paper on this subject and showed tables of the number of cases of certain diseases treated in the different hospitals of the West Indian colonies during the two years 1911 and 1912. During the years in question there were some marked variations in the number of cases of maladies treated. Some cases of malaria in Barbados were said to have contracted the infection while working as labourers in the Panama Canal Zone, the disease being brought back by them to the British colony where it was treated in hospital. The amount of ankylostomiasis in some places also fluctuated, this depending on the number of Indian coolies imported to work in the sugar plantations. The island of Montserrat seemed for the two years' period to have been the most healthy, judging from the hospital statistics, and St. Lucia had apparently the worst records for that time. Dr. Anderson mentioned some cases of pellagra which he had seen in some of the West Indian islands, and showed a number of photographs of such cases. There was, he said, an impression in the West Indies that pellagra often appeared among lunatics in asylums after a long period of detention. Dr. Anderson also mentioned that he brought back to England some specimens of larvæ of a parasite which caused "staggers" in sheep. A species of fly deposited its eggs in the nasal cavity of the sheep, and the larvæ subsequently worked their way into the brain and caused the development of the "staggers."

Dr. **Bahr** set little value on such comparative statistics for drawing conclusions. The colonies in which the cases were correctly and conscientiously reported would appear the worst, and those in which little trouble was taken to verify the diagnosis would seem the best in point of absence of some preventable diseases. For example, sprue is now common in the West Indies, but formerly it was never reported because it was not diagnosed or perhaps was ignored. The amount of ankylostoma cases reported in a colony was also misleading, for a great many cases die from diarrhœa and are certified from that disease instead of from ankylostomiasis; and under the heading of dysentery all sorts of diseases, including cancer of the rectum, were certified in the tropics.

Dr. **Sandwith** quite agreed with Dr. Bahr's views as to accepting the reported hospital cases in a colony as representing the true condition of the place.

Mr. **Cantlie** said it was not only in our colonial reports that these inaccuracies occurred. Much depended on the way in which the statistics were prepared.

Dr. **Williamson** had compiled reports for the Colonial Office. A form was supplied on which certain diseases were mentioned, and the certifying medical man had sometimes, when the malady was not on the form, to class it under some other name which was on the form. He gave some instances of this kind.

Dr. **Anderson**, in reply, said that matters would be improved if at the head of the departments dealing with these reports in each colony there were men with statistical training and knowledge. He spoke highly of the medical officers in the West Indies as a class, and mentioned the names of some whom he asserted were very inadequately remunerated for the valuable work they were doing.

The **President** also pointed out that where special means were taken to ascertain the presence of a particular disease in the colony many cases came to light, whereas when no such steps were taken the colony might appear to be free from the malady, though it was actually prevalent.

Beri-beri: The Rice Theory and Recent Criticism.

In the absence of Dr. H. FRASER and Dr. A. T. STANTON (Kuala Lumpur, Federated Malay States), who had sent a joint paper of great interest on the above subject, the secretary of the section, Dr. G. A. WILLIAMSON, read it. The main object of the paper was to deal with the contentions of certain writers on beri-beri who professed themselves unable to accept the deficiency theory because they believed it incompatible with their clinical experience. Dr. Fraser and Dr. Stanton maintained that these writers had brought forward no facts of importance in support of the various alternative hypotheses which they had advanced. Because of the undue prominence given to certain feeding experiments on animals in recent years an idea had been formed that the theory of beri-beri causation in man rests wholly on the results of such experiments. The fact was, however, that the theory rests on quite other evidence. The present time was therefore thought by the authors of the paper to be opportune for restating the knowledge which had been gained as to the causation of beri-beri. The main theories were each in turn reviewed in the light of recent experience. Beri-beri as a place disease, they said, now finds few supporters, and though many have sought for it no evidence has been found to show that place *per se*, or considered as a nidus of infection, plays any part in the development of beri-beri. That the disease is caused by a microbe and directly communicable from person to person is also unsupported by trustworthy evidence. Mere conjecture as to the existence of a micro-organism causative of beri-beri is valueless when testimony can be adduced in support of the view that the malady is not communicable. Some tried to demonstrate that beri-beri is a disease of protozoal or other origin transmitted by an intermediate host, such as a bug, louse, or flea. Many experiments have been carried out to try to demonstrate this; these and others of a kindred nature have been entirely negative in their result. The work of Lovelace in Brazil makes it clear that there is a class of cases which clinically are closely related to beri-beri, but which are not related etiologically to a diet of polished rice, or apparently to the deprivation of any dietary constituent. Lovelace holds that, considering the multiplicity and diverse characters of the agents which are known to cause polyneuritis, it is highly probable that the term beri-beri is one that has been used to cover, not a single disease, but a group of maladies more or less indistinguishable from one another clinically. Dr. Fraser and Dr. Stanton reassert their position—namely, that their inquiries were made to seek an adequate scientific explanation of the occurrence of beri-beri in the Malay Peninsula. The application of the general principles which emerged from these inquiries had been attended by the eradication of the disease from many areas in the Far East where formerly beri-beri was a constant scourge. In conclusion, they asked their fellow workers who might have to deal with beri-beri outbreaks, and whose experience was opposed to the view that it arose through a defect in diet, to consider that beri-beri was after all only one form of polyneuritis, a condition which might be induced by a variety of causes, and that observations did not necessarily invalidate the conclusions arrived at in regard to the origin of the disease elsewhere. Facts rather than surmises were now necessary if they would combat successfully a theory the application of which in practice had been attended with widespread and beneficial results among the rice-eating peoples of the Far East.

Dr. CAMPBELL GRAHAM called attention to reported recurrences of beri-beri in places where improvement in a rice dietary had been carried out. Such instances seemed to him to interfere with acceptance of the food theory of the causation of the disease.

Dr. SANDWITH pointed out that it ought to be remembered that Fraser and Stanton began their original inquiry without any bias in favour of one or another theory. Beri-beri was undoubtedly the result of a one-sided diet. Ship beri-beri was not due to rice, bnt to flour and other articles of food which were originally, or had by keeping become, deficient in the necessary substances for normal metabolism. Even where bad rice was used on board ship its evil effects were removed by the daily issue of a ration of fresh meat. He observed that in the latest edition of Manson's "Tropical Medicine" no prominence was given to the view that beri-beri was a place disease.

The PRESIDENT spoke of the conditions under which rice, polished and unpolished, was stored in the East; he briefly summarised the arguments and evidence for and against the rice theory of the causation of beri-beri. Allusion was made to the temperate manner in which Fraser and Stanton had put forward their views, and the moderation which they had shown in dealing with the arguments of their opponents.

Recent Researches in Sprue.

Dr. BAHR read a paper based upon the researches which he had recently conducted regarding sprue in Ceylon, where the disease has been specially prevalent among all classes, including the European planters. After briefly describing the physical features of Ceylon the author gave his views as to the definition of sprue, and followed this by giving the geographical distribution of the disease throughout various parts of the world. He mentioned the occurrence of sprue in the native races, and discussed the supposed predisposing causes, as also the question of the communicability of the disease from man to man. The symptomatology, pathology, morbid anatomy, and etiology of sprue were each in turn fully dealt with. As a result of his investigations Dr. Bahr has come to the following conclusions: Sprue is a specific disease of tropical and subtropical countries, though it is possible that cases occasionally originate in the temperate zone. It is a prevalent disease in Ceylon, especially among Europeans; contrary to the opinion hitherto held, it occurs among the natives irrespective of race or mode of life. This fact, together with the occurrence of the disease in people closely associated with one another, suggests some local influence or some communication of a specific cause from man to man. Sprue is a variable disease; it may occur in a mild or in a particularly virulent form, and in common with many other serious maladies it is prone to sudden exacerbations, remissions, and periods of latency. There is evidence that the disease may occur in distinct clinical forms according to the portion of the alimentary canal attacked. Researches as to the composition of the stools point either to a complete absence or inadequacy of the intestinal digestive ferments. Other researches on the blood and the urine suggest that certain of the more important clinical features of sprue are dependent on an alimentary toxæmia. The pathological findings are also in favour of such a conclusion, and, if anything, point to an invasion with the thrush fungus (*Monilia albicans*) as being concerned in their production. At the conclusion of the meeting Dr. Bahr showed in a side room a number of microscopical slides and preparations illustrating his paper.

Mr. CANTLIE characterised Dr. Bahr's paper as excellent, and as giving a scientific explanation which fitted in quite well with the signs and symptoms of sprue. This disease had for its main characteristic an acid fermentation. As regards remedies his own method was to bring the patient under an alkaline treatment. He suggested frequent changes in diet as likely to help the sufferer, trying a meat diet for a few days, then a milk diet, and then a farinaceous one. These changes seemed to benefit the patient.

The PRESIDENT said that Dr. Bahr seemed to have struck upon what was probably the cause of the disease—namely, that a yeast infection produced the toxin.

The So-called Vomiting Sickness of Jamaica.

Dr. H. HAROLD SCOTT (Government Bacteriologist, Jamaica) contributed a paper on the above subject. In his absence Dr. ANDERSON read some extracts from the paper, the short time available not permitting the whole of the contribution to be read. This disease seems to be confined to Jamaica; it has a seasonal prevalence and runs its course rapidly. Facts respecting the malady have hitherto been very meagre. Dr. Scott surmises that it is due to an acute toxæmia or septicæmia induced by an organism which so far cannot be grown on any of the usual media. Probably the main seat of the disease is in the upper part of the alimentary canal. In the cases reported the mortality has been as high as 90 per cent. Dr. Scott recommends isolation of the sick at as early a stage as possible.

As time did not permit there was no discussion on the paper.

Dr. SANDWITH proposed that before dispersing the section should pass a resolution regretting the absence of Sir Patrick Manson from the meeting, the sixteenth since the section was first established, and of which Sir Patrick Manson was the first president. Dr. Sandwith also suggested that a copy of the resolution should be sent to Sir Patrick Manson with the good wishes of the members of the section. This proposal was seconded by Mr. Cantlie and passed by acclamation.

The PRESIDENT then asked the section to pass a vote of thanks to the secretary, Dr. Williamson, for the able and businesslike manner in which he had carried out the secretarial duties, and this was unanimously accorded.

Mr. CANTLIE then proposed a vote of thanks to Professor Simpson for so ably presiding over the section's meetings at Aberdeen. This was seconded by Dr. SANDWITH, who recalled the fact that Professor Simpson, Mr. Cantlie and himself had first met in Egypt as fellow-workers in a cholera epidemic 31 years ago, and that they had all since then been intimately associated as teachers in the London School of Tropical Medicine, and as members and officials of the Tropical Medicine Section of the British Medical Association from the time that it was inaugurated. The vote was passed by acclamation and the proceedings then terminated.

THE ANNUAL EXHIBITION.

The position of the annual exhibition close to the rooms in Marischal College in which the business of the scientific sections was being conducted secured a good attendance. The space occupied by the exhibits was not large, but the dissecting room and the general laboratory of the College proved to afford ample accommodation for a smaller exhibition than usual, though one of considerable interest. The increased number of electro-therapeutic appliances shown was again a feature. Surgical appliances were largely represented; food products, however, formed but a comparatively small section of the exhibits; drugs occupied, perhaps, the prominent place. In presenting a description of the more important objects shown it is convenient to adopt the following classification: (I.) Electro-therapeutic Appliances, Surgical Instruments, and Hospital Appliances; (II.) Pharmaceutical Preparations; (III.) Special Foods; (IV.) Sanitary Appliances; (V.) Mineral Waters and Beverages; and (VI.) Medical Publications.

I.—ELECTRO-THERAPEUTIC APPLIANCES, SURGICAL INSTRUMENTS, AND HOSPITAL APPLIANCES.

Very general interest was shown in the imposing exhibit of Messrs. Siemens Brothers and Co., Limited (Caxton House, Westminster, London, S.W.), where a good idea of the advances made in electro-therapeutic appliances and X ray outfits could be obtained. The diathermy apparatus for the application of heat at any desired depth in the body by means of high-frequency currents has been developed into a compact and efficient machine. The apparatus really consists of a small wireless telegraphy station. The high-frequency currents (1,000,000 cycles per second), while producing the thermal results useful in nervous and rheumatic complaints, cause no irritation. In addition the apparatus can be used for producing coagulation temperatures in definite parts of the tissue. It has already given good results in the treatment of lupus. A well-designed X ray outfit for the general practitioner's use, and also a universal electro-medical apparatus combining most electric applications (e.g., galvanisation, cataphoresis, cautery, and so on), were shown by the same firm. The apparatus is very convenient of application and is perfectly insulated from earth.

The claims of the Medical Supply Association (167–173, Gray's Inn-road, London, W.C.) for their electric apparatus in the treatment of obesity are of interest. They have improved its application for local and general treatment, and an important modification has been introduced for the treatment of cardiac and circulatory derangements by means of an electrically controlled rhythmic interrupter. The apparatus has been installed at many of our well-known hydro-therapeutic stations. Messrs. Meyer and Meltzer (71, Great Portland-street, London, W.) made a special feature of their improved intratracheal anæsthetic apparatus designed by Dr. Francis E. Shipway, which is described as an extremely simple and portable apparatus for the insufflation method of inducing anæsthesia, while it can also be used for carrying on artificial respiration over long periods. They also showed their "emandem" high efficiency electric examination lamp and some new forms of masks and droppers for the open ether method, besides a number of surgical instruments of new and approved design. Amongst the interesting exhibits of the Holborn Surgical Instrument Company, Limited (Holborn-circus, London, E.C.), was their universal saline infusion apparatus for continuous proctoclysis and subcutaneous infusion. It possesses the following obvious advantages. It is simple in construction. The solution remains hot in the vacuum-jacketed flask. The amount infused is shown by the water gauge and graduations of the container, and a uniform temperature is easily maintained and the rate of flow controlled. There were a number of other useful surgical accessories, including specially prepared ligatures, in hermetically sealed all-glass tubes, and sterilised catgut, while there was a good selection of surgical instruments of modern design. Messrs. Charles Hearson and Co., Limited (235, Regent-street, London, W.) brought to the notice of the visitors chiefly their incubators controlled by the ingenious capsule which they have introduced, which has superseded the old mercurial regulator and thermostatic bar for governing temperature. The same method of control is adapted to their steam and hot air sterilisers. The new automatic electrically heated steam steriliser is a model of simplicity, convenience, and readiness in use. There were also exhibited a number of improved centrifuges of rapid speed and consequent efficiency.

An admirable assortment of modern surgical appliances appeared on the stall of Messrs. Down Brothers (21 and 23, St. Thomas's-street, London, S.E.), for inspection by the surgeon, as well as specimens of aseptic hospital furniture and a special model operation table known as the "Up-to-date." Messrs. Fassett and Johnson (86, Clerkenwell-road, London, E.C.) showed an interesting display of surgical accessories in their standard gauzes and aseptic ligatures. They exhibited also their well-known medical and surgical plasters, in which rubber plays an important rôle. An exhibit which attracted considerable attention was that of Messrs. Hoskins and Sewell, Limited (Birmingham). The chief novelty here was the "James" bed, designed to facilitate the open-air treatment of tuberculosis. Both bed and patient can easily be moved, even by the patient himself, provided he is not in an advanced stage of illness, a clear advantage in these special cases. Finally, there was a very interesting collection of surgical instruments at the stall of Messrs. J. Gardner and Son (32, Forrest-road, Edinburgh), including sets employed in obstetric practice, as well as an assortment of appliances adapted to the requirements of modern surgical routine.

II.—PHARMACEUTICAL PREPARATIONS.

There were many old friends amongst the pharmaceutical exhibits, and the chief interest in this section lay in the improved forms of administration offered and in the modifications proposed in regard to the particular presentations of the active principles hitherto employed. This latter, of course, means that the relationship of the chemical constitution of a substance to its physiclogical action is receiving attention. Messrs. Burroughs, Wellcome, and Co. (Snow Hill Buildings, London, E.C.) brought forward plenty of evidence in the preparations they showed of their purpose to engage scientific research in the interests of pharmacological progress. In addition to showing their well-known medicinal products, they demonstrated the advantages of their standard products, as, for example, the vaporoles (hermetically sealed containers), which include a great variety of medicaments adapted for administration by injection or inhalation. There were, further, a good selection of examples of their brands of serums, vaccines, and tuberculins prepared at their physiological research laboratories under scientific supervision. A recent product of this firm is laxamel, which we have reported upon in our analytical columns. It is a jelly compound of paroleine (80 per cent.) intended for the use of patients to whom the taking of ordinary petroleum, for laxative purposes, offers some difficulty. Another laxative the rationale of employing which appears to be sound is regulin, a combination of agar-agar, with aqueous extract of cascara sagrada. Its action in the bowels is assumed to be that of softening and loosening the fæces, and the assumption seems quite reasonable and justified by practical events. The preparation was exhibited by the Regulin Syndicate, Limited (15, Cullum-street, London, E.C.).

Messrs. Parke, Davis, and Co. (50, Beak-street, Regent-street, London, W.) offered for inspection a great number of preparations of pharmacological importance. They draw attention to the development of physiological standardisation initiated in their laboratories 20 years ago, citing examples of the importance of its application in digitalis and strophanthus. Their exhibits included a selection of serums and vaccines, sterilised solutions for hypodermic use, the phylacogens, glandular extracts (e.g., adrenalin), and a number of other scientifically prepared substances of ascertained pharmacological potency. Messrs. Fairchild Brothers and Foster (64–65, Holborn Viaduct, London, E.C.) exhibited chiefly preparations whose value depends upon enzyme activity. Such were, for example, enzymol, a solution of proteolytic enzyme prepared for external use for hydrolysing sloughs, &c.; zymine, extract of pancreas; holadin, of powerful tryptic activity, sometimes combined with bile salts. Lastly, they exhibited a valuable and permanent preparation of lecithin in glycerine, glycerole, which is available for use in impairment of general nutrition. "Antiphlogistine" was the subject of exhibition at the stall of the Denver Chemical Manufacturing Company (St. Ann's-road, Bow, London, E.), a scientific poultice, being besides powerfully absorptive antiseptic also. The Bayer Company, Limited (19, St. Dunstan's-hill, London, E.C.), exhibited a large number of fine pharmaceutical products. These included the veronals, sulphonal, aspirin compounds, and so forth; but attention was particularly directed to their soluble aspirin, a compound of the acetyl derivative with calcium; to acitrin, which encourages the elimination of uric acid; to elarson, an organic arsenic compound which is said to be non-irritating; and, amongst others, to istin, a synthetic laxative said to be similar to the active principle of rhubarb and senna.

Messrs. Savory and Moore (143, New Bond-street, London, W.) exhibited some interesting preparations, amongst which was a special magnesia compound consisting of an emulsion of true magnesium hydrate, which, of course, serves as an efficient antacid without the production of gas, as with the carbonates; fructole, a combination of glycerophosphates and red bone marrow, free from syrup or sugar; fructolax, a laxative agreeable to take, its action depending upon the presence of pure petroleum. An interesting series of pharmaceutical preparations was on view at the stall of The Saccharin Corporation, Limited (36 and 37, Queen-street, London, E.C.). These included the already well-known local anæsthetic novocaine, which does not contain cocaine; trivalin, claimed to be a non-nauseating, non-toxic, and non-soporific substance whilst serving as a substitute for morphia; phytin, a natural phosphorus salt used in neurasthenia; and peristaltin, a glucoside from Rhamnus purshianus acting as an intestinal evacuant and administered as a hypodermic injection from ampoules. The Charles H. Phillips Chemical Company (14, Henrietta-street, Covent Garden, London, W.C.) will be remembered as the introducers of an excellent liquid magnesia known as milk of magnesia, which, as our analysis has shown, is an elegant emulsion of the hydrated oxide of magnesium. It is, of course, powerfully antacid, and does not cause eructation of carbonic acid gas which occurs when the alkaline carbonates are given. It has a peculiar cleansing, but non-corrosive, action upon the teeth and lining membrane of the mouth. This company also exhibited a syrupy compound of the phosphates of the alkaline earths and potassium with quinine hydrochlorate and strychnine.

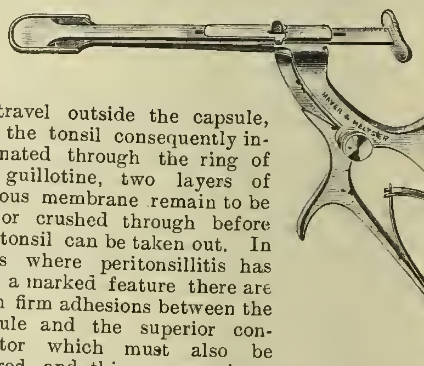
Messrs. Zimmer and Co., Limited (Frankfort-on-Main, represented by Messrs. Widenmann, Broicher, and Co., 1, Fenchurch-avenue, London, E.C.), made a feature of euquinine and its preparations at their stall. Euquinine is described as a tasteless quinine and chemically as ethyl-carbonate of quinine which possesses the same physiological action as quinine itself but without the inconvenient after-effects which ordinary quinine salts produce in some patients. It occurs also in the form of salicylate and tannate. The same firm exhibited aponal, a hypnotic claimed to possess the advantages that it produces no ill-effects on the gastro-intestinal tract and causes no sense of discomfort after the hypnotic effect has passed off. Chemically it is amylene-hydrate-carbamate.

(To be concluded.)

New Inventions.

TONSILLECTOMY AND A NEW GUILLOTINE.

WITHOUT wishing to enter in any way into the rival merits of tonsillotomy and tonsillectomy it must nevertheless be admitted that there are a number of cases which call for the latter procedure. To accomplish the enucleation or removal of the tonsil complete in its capsule there are two methods which are generally accepted, firstly, the dissection method, with its endless modifications, and secondly, the so-called Sluder or blunt guillotine method. A large experience of the latter method almost from the day of its introduction has convinced me that about 95 per cent. of all cases can be successfully dealt with by it, but it must be admitted that in a certain number of cases the operation to be successful must be accompanied by the exhibition of rather an undesirable amount of force. The reason for this is that after the blunt blade of the guillotine has been made to travel outside the capsule, and the tonsil consequently invaginated through the ring of the guillotine, two layers of mucous membrane remain to be cut or crushed through before the tonsil can be taken out. In cases where peritonsillitis has been a marked feature there are often firm adhesions between the capsule and the superior constrictor which must also be severed, and this may require a very considerable degree of force, and the tonsil may have almost to be torn from the muscle. To obviate this it has seemed advisable to add a sharp blade to the ordinary blunt blade of the guillotine; this is made very thin, rather like a "Gillette razor" blade, and works under the blunt blade, and need not be used unless required. The operation is performed in the ordinary way, and the tissues as it were clamped by the blunt blade; then a touch from the sharp blade will serve to cut through the two mucous membrane reflections and any adhesions there may be. The blunt blade is worked by the usual modified Ballenger handle, and the sharp blade occupies the position of the blade in the Mackenzie instrument. To prevent the undesirable "rocking" that occurs in instruments with detachable handles the handle and the blade-bed have, at the instrument maker's suggestion, been forged in one piece.



Messrs. Mayer and Meltzer have made the instrument for me.

W. G. HOWARTH, M.A., M.B.,
B.C. Cantab., F.R.C.S. Eng.

Harley-street, W.

THE CANCER HOSPITAL.—The committee of the Cancer Hospital, Fulham-road, London, having decided to inaugurate a post-graduate course in radio-technology, a combined laboratory and lecture room is being included in the new extension now approaching completion. Owing to the prolonged strike in the building trades some further delay must occur before the work is finished, but there is every prospect that the laboratory will be open by the autumn. It is proposed that the course shall extend over a period of two months, the fees being moderate. The lectures, illustrated as far as possible by models and experiments, will include two by Dr. Robert Knox, director of the electro-therapeutic department of the hospital, upon the clinical applications of radiations, and six by Mr. C. E. S. Phillips, F.R.S.E., dealing with the physics of the subject. The electro-therapeutic department will be open on three afternoons in each week, and experience may be gained there in the treatment of cases under the supervision of Dr. Knox. The laboratory course and experimental work will be under the direction of Mr. Phillips. A further announcement will shortly be made stating when the course begins.

THE LANCET.

LONDON: SATURDAY, AUGUST 8, 1914.

God Defend the Right.

GOD Defend the Right, and GOD Save the KING, who as the constitutional embodiment of our Empire comes out to champion the Right.

It is entirely unnecessary to say more in this vein; it is an impertinence to our readers to suppose that their patriotism wants kindling. The duty henceforth of a medical paper will be to try to do as much as lies in our power to mitigate public troubles and to ease the cruel strain upon both minds and material resources. With a sense of real pride we can reflect that the members of the medical profession to a man are placing their services at the disposal of the country in any capacity where they are required, and that those who cannot be employed in a direct manner will face cheerfully the extra work that will be entailed upon them, either by the recruiting of their colleagues or by any incidence of sickness in this country while the war conditions prevail. Our hospitals are for the most part in splendid working order despite the too frequent slenderness of their resources. Money will be required, and required in large sums, that these institutions may meet the calls upon them. This money the public will have to find; the service can be left to the medical profession as a whole, who can be relied upon to deal with the conditions as they occur, and to spare the great charities as much as possible.

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War and Economy.

IN the deeply anxious position wherein our country is placed by the occurrence of a European war—a war of immense possibilities for evil from which we have been unable to stand aloof—the medical profession will be expected as a class not only to meet any medical exigencies arising out of the situation, but to demonstrate in a striking way the oft-quoted association that should exist between a healthy mind and a healthy body. We must remain calm, for otherwise we shall not remain healthy, and it is the positive duty of all persons who can compass it by self-control or self-denial to remain healthy, so that care and attention may be set free widely for those who are bound to suffer. That is the lesson which the medical profession will have to be monotonous in impressing upon the public, a public which so far, thank GOD, needs no such warning. For our public is exhibiting a highly creditable temper. There is very little over-confidence, and few attempts are being made to stimulate or simulate courage by yelling war-cries; yet we see no signs of unreasoning terror, even while there is no disguising the fact that we find ourselves engaged in the most serious naval, military, and political struggle which the world has ever seen. It is good that no one denies the strength and resourcefulness of those against us, or the impetus which their movement has received from readiness to strike the first blow; it is also good that there is no undue magnification of the risks that have to be run. We have, in short, the mental attitude implying that the nation feels that it is being strenuously, capably, and devotedly served by those in whose hands national as well as personal interests lie; and the clear call to us of the medical profession is to do all that we can in every direction to maintain the national temper in its present healthy condition.

In what way can those best serve the State at this juncture who cannot find a place in the lines of defence or coöperate actively in any auxiliary movement? The answer is clear. They must help themselves in such a way that they can best help others. An enormous amount of money will have to be found, or its equivalent in service, to assist those for whom the strain of the altered circumstances of living will be too great. There is certain to be severe privation, bringing in its train a great deal of sickness, and much of this inevitable trouble can be prepared against in one way, and in one way only—namely, by strict economy. Everyone knows this, but it is already quite clear that some people have a curiously mischievous idea of what economy should be; they practise it not as a social virtue but as an individual vice. It is essential, if the principle of self-help is to develop so as to constitute a real system of mutual help, that economy should be practised with discretion. Households which take the necessity for economy in too feverish a way may end in becoming as frightened at the thoughts of impending penury as at any of the horrors of war, and the equable temperament which ought to be preserved will actually be endangered by their furious precautions. The man who discharges all his servants, and condemns his family to live on cheese, is placing the burden of the maintenance of a certain number of young women more or less on the community, and a rich crop of sickness may result. He is also endangering the health of other women folk, who will be compelled by his thoughtless action to undertake duties for which they are unfitted. The duty of the householder is to keep his expenses down as much as possible, so that there may be more food and more money for distribution to others, but it is also his duty to the commonwealth to support those who might otherwise become a charge upon the public. The British householder will have to learn to look at prices, and we believe that rigid economy systematically practised will be a most salutary occupation for a very large number of our middle-class households. It will be extremely interesting for them. In many cases they will be learning a new art, and it is possible for the practical lessons which they receive to be of great value to the nation in after times. Systematic economy does not consist in a prevailing and unnecessary parsimony. Such a "law of the house" may require as little thinking about as even unsystematic extravagance. The kind of economy we have in mind would lead the masters and mistresses of households to have a proper idea of how much actual food in raw material is required for a household of certain numbers and of certain ages. Thinking of food only, they should then learn how this should be best prepared to obtain the maximum of food value with the minimum of monotony; they would find out how much proportionally preparation should cost, what waste must take place in the various culinary proceedings, and how to use by-products and residues.

Those who decide upon ascertaining some of these things for themselves will have a legitimate occupation for their minds in a time of great anxiety; will be able to do their duty to the full to others dependent upon them; and will have a better chance of finding themselves with a surplus in material and money from which to help the many who will sorely need help, and to pay the heavy taxes which we must immediately expect. The maintenance of health in such households will be an easy affair, and not a few of their members, we anticipate, will show an absolute improvement in health. We are certain that in the trying times ahead of us the medical profession will waste no time in sentimental regrets or futile apprehensions. A large proportion of our body will be found with the forces, and in either service will uphold their great traditions. But where a man has no such opportunity he will devote every moment that can be spared from strictly professional duties to forwarding the public good by service or charity, and by helping to maintain the existing wholesome spirit.

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Sanitary Authorities and Epidemic Diarrhœa.

THE season of prevalence of epidemic diarrhœa is approaching and the Local Government Board has by circular to sanitary authorities issued a public reminder as to the precautions which ought to be taken to diminish this serious affection of infancy. It is well known that many places which were notorious as "diarrhœa towns" have lost this unenviable distinction in consequence of the introduction of water-carriage systems of excrement disposal, and the removal of large fixed ashpits. This action has tended to diminish the number of house flies and their opportunity of carrying infected filth to food, but, as the circular indicates, it would be a mistake to assume that the problem of the prevention of this disease is limited to the destruction of flies. It is concerned also with the personal cleanliness of those who prepare the infant's food, and with the cleanliness of the house, backyard, court, and street, with or without the intervention of flies. Great as has been the improvement in recent years in methods of refuse disposal, and in the sealing of surfaces about the dwellings of the poorer classes in towns, there are probably few districts in which it would not be an advantage for the sanitary authorities to take stock of their methods, with the determination to improve their systems of refuse collection and disposal, to seek out the places where objectionable refuse remains accumulated, and to abolish as soon as may be unsatisfactory "conservancy" arrangements. It is to be hoped that the circular will achieve this object. Individual citizens, particularly in the circumstances entailed by the war conditions, must take the little trouble involved in complaining to the sanitary authorities of causes of nuisance.

The circular advocates the destruction of flies in the dwelling as an important additional measure, and states that an efficacious method is the use of saucers containing formalin (one teaspoonful to the half pint of water or milk and water) and a little sugar. A small piece of bread should be placed in the saucer as a place for flies to alight and drink. The saucers should be left out overnight in living rooms, all other vessels containing fluid being removed or covered over. Vessels containing milk should be kept cool by being placed in water or wrapped in a damp cloth and should be covered, for example with a square of butter muslin weighted at the corners with shot or sand. The provision of wholesome places for the storage of food, and other elementary precautions, are also advocated. The Board attaches special importance to home visiting, during the summer and autumn months, by health visitors, under the direction of the medical officer of health. The circular suggests that special visits should be made to families in which it is known that there are infants from three to 12 months old and in which breast-feeding of these infants is known to have ceased. This information can, of course, best be obtained as a result of inquiries under the Notification of Births Act, which is now in force in counties and districts representing over two-thirds of the population of England and Wales. The question whether its adoption, outside the large towns, should rest with the local sanitary authority or be taken over by the county council for the county as a whole is a difficult one. It is obvious that most of the work which the Local Government Board desires to see effected falls within the province of the sanitary authorities, who need all the information to be obtained by birth notification or otherwise. The Board, however, appears to favour county notification on the ground that home visitors can be appointed who are also inspectors of midwives or tuberculosis visitors under the county council.

It is no doubt intended that when notifications are made to the medical officer of health of the county they will be sorted into sanitary districts, so that the necessary information may be sent on as soon as possible to the various district medical officers of health concerned. This is one of several important matters where adjustment will have to be effected between the Local Government Board, county authorities, and those responsible for the administration of the National Insurance Act.

Annotations.

"Ne quid nimis."

SCIENTIFIC RESEARCH AND THE LOCAL GOVERNMENT BOARD.

THE President of the Local Government Board has authorised the following researches to be paid for out of the annual grant voted by Parliament in aid of scientific investigations concerning the causes and processes of disease. These are in addition to the investigations already announced. 1. An investigation of the details of the technique in carrying out Wassermann's reaction for the diagnosis of syphilis. The Army Council have consented to permit Major W. S. Harrison, R.A.M.C., to carry out this investigation. He will act in collaboration with a subcommittee of the Pathological Section of the Royal Society of Medicine. 2. An investigation by Mr. H. J. Gauvain, in collaboration with the Board's pathological staff, into the cutaneous tuberculin reactions of cases of tuberculosis of bones and joints of bovine and human sources. 3. A continuance of the investigations of Dr. F. W. Twort and Dr. E. Mellanby on infantile diarrhœa, with special reference to the conditions governing the absorption of toxic substances from the alimentary canal. 4. A further investigation into the causes of stillbirths by Dr. C. J. Lewis and Dr. J. Dale.

THE THORN IN THE FLESH.

THE nature of the "thorn in the flesh" which afflicted Saint Paul has long been a subject of speculation. The late Lord Lister's explanation of the cryptic phrase is among the most recent and the most probable, for, according to Sir Rickman Godlee, he maintained that it was neither a wife nor weakness of eyesight, but an impediment in the speech. Lord Lister himself stammered somewhat and suffered at his inability to express his clearly arranged thoughts in any elocution worthy of his subject. It has been pretty generally held that the thorn of affliction in the frail body of Saint Paul was a nervous disorder. Thus Lightfoot, in his commentary on Galatians, is of opinion that the apostle suffered from some trouble akin to epilepsy, but not involving loss of consciousness. The same commentator holds that the vision referred to at some length in II. Corinthians, xii., was an overpowering trance in the nature of an epileptic seizure. "I knew a man," Saint Paul writes in this epistle, the authenticity of which is not disputed, "above fourteen years ago (whether in the body, I cannot tell; or whether out of the body, I cannot tell: God knoweth;) such an one caught up to the third heaven." In paradise the man, who is plainly the Apostle of the Gentiles himself, heard "unspeakable words, which it is not lawful for a man to utter." Later, he continues: "Lest I should be exalted above measure by the abundance of the revelations, there was given to me a thorn in the flesh, the messenger of Satan to buffet me, lest I should be exalted above measure." This thorn was, of course, the nervous disorder. Bishop Lightfoot compares Paul to King Alfred, who was racked with various pains, and we might extend the parallel by including him in the extended category of epileptics of genius. Through his employment of metaphor the second founder of Christianity has left us in doubt as to what really ailed him. From a passage in Galatians iv., 13, Sir W. M. Ramsay in his "Saint Paul the Traveller and Roman Citizen" is led to suppose that the "thorn" meant "a species of chronic malarial fever," but, be that as it may, we are inclined to think that the word used by Paul himself has not been sufficiently considered. "Thorn" should be really translated "pale" or "stake." In Greek it is *skolops*, and the allied verb (*skolopidsô*) refers to the process of impalement still known and practised in Persia. Saint Paul was an elderly man when his worst troubles began. He was well over 50, of a slight and frail habit of body, in strange contrast to the vehemence of his epistolary style, and he may well have suffered from some of the ailments which afflict men who are well past middle life. The word "pale" suggests sharp insistent pain or perhaps only trouble, which might range from gout to sciatica. Gout has of late been described as the spur of genius. Perhaps Saint Paul was gouty.

THE MOVEMENTS OF THE VERMIFORM APPENDIX.

THE *British Journal of Surgery* for July contains an interesting account of researches into the movements of the vermiform appendix which, though avowedly incomplete, yet break new ground and are therefore worthy of note. These investigations, carried out by Dr. James A. Gunn and Mr. R. H. Anglin Whitelocke, depend on the fact, already utilised by the former, that muscular viscera can be kept alive and capable of normal movement if they are transferred to unoxygenated Locke's solution at room temperature as soon as they are removed and subsequently to oxygenated Locke's solution at body temperature. In this latter medium they revive and may retain the power of movement for as long as 24 hours after removal. The research under consideration embraces an examination of a number of appendices removed at operation, 12 of which have been examined within six hours of removal. The curves reproduced are of great interest in that they show that the movements of appendices which depart but little from the normal are closely similar to those of the large intestine. They consist of large rhythmic movements lasting almost half a minute, separated by intervals of something like the same duration, and obscured to a greater or less extent by briefer movements of three or four seconds' duration superimposed on the others. It was also shown by further experiment that the same description is applicable to the movements of the exsected appendix of the rabbit and also to the movements of the rabbit's appendix *in situ*. By means of the application of adrenin on the one hand and pilocarpine on the other, it was shown that the innervation of the appendix probably corresponded with that of the large intestine—i.e., that it receives one set of impulses abolishing tone and stopping the rhythmic contractions, and another set of impulses exercising a precisely opposite effect. In the case of the large intestine the former set of stimuli are transmitted by the splanchnic and the latter by the pelvic visceral nerves, and the inference is that the appendix is innervated from the same sources. As to the influence of age and disease on the appendicular movements, the writers do not feel themselves able to speak with confidence until a larger amount of material has been dealt with, but they have already noticed a greater liveliness of movement in the appendices of younger subjects, and even severely damaged appendices may preserve their motile powers almost intact. These observations seem to point a road which, if followed up, may lead to more accurate knowledge as to the part which chronic constipation plays in the provocation of appendicitis.

EXCISION OF THE GASSERIAN GANGLION IN TRIGEMINAL NEURALGIA.

THE article of Goyanes in the *Revista Clinica de Madrid* of June 30th is a good example of the gulf between theory and practice in surgery. It is unquestionable that excision of the Gasserian ganglion is an extremely difficult operation. It is also a most useful and merciful one when we consider the pains of trigeminal neuralgia which it allays, and the intricate apparatus of nervous machinery which sets those pains at work. But what a stumbling block is this machinery for the expert surgeon, who studies the especial functions of these nerves, the adjustment of technical means to surgical ends—the surgeon who trains himself in critical measurement of his material, in the selection and rejection of the operative details which suggest themselves after his rough conception of the operation is formed. The remarkable thing about Goyanes's technique—the thing which distinguishes it from most contemporary methods—is not surgical. It is delicately surgical, of course. But the surgery is not the striking, important, and distinguishing part of Goyanes's method. Supreme technique is his more uncommon distinction. He saw that operations come and go; it is the humbler task of the technical expert to try their merits by practising them on the dead body, in this way to record and fix the best method. In this humbler task Goyanes became thoroughly proficient before he operated on the living body. We published in THE LANCET of May 25th, 1907, one of these technical studies which illuminated many difficulties of this particular operation. Krause's method, for instance, leaves uncertainties on various interesting points. The obstinate derangement of the ophthalmic branch of the trigeminal nerve is one. It appears to depend on the wide and deep incision of the zygomatic and temporal bones necessitated by the Krause operation, and tends to paralysis of the eyeball. The question that arises for the surgeon is whether the paralysis which happens is really an injury to the nerve. The sympathetic, as Seydel observes, sends fibres to the Gasserian ganglion, and injury to the ophthalmic filaments is difficult to prove. The expert surgeon who has tried the zygomatic incision, by which Rose first excised the Gasserian ganglion, may reasonably assume that if the paralysis frequently occurs, it is at least probable that the surgical failure is a failure of the technique. This is entirely right, as Goyanes believes, and accordingly he rejects the method of Krause. He prefer Lexer's operation, which consists in an incision along a straight line between the superior border of the eyebrow and the superior border of the pinna of the ear. This incision has precise limits, and the surgeon who abides within them avoids mistakes. Raising the osteo-fibrous flap according to Krause, Goyanes and San Martin cut, in the bone beneath, a wedge whose base corresponds to the line of the infratemporal crest and its vertex to the foramen ovale. The second excision they make is that of the cranium at the foramen of the inferior maxillary nerve, which allows full scope for the niceties of operation. It facilitates approach to the Gasserian ganglion and the flow of fluid which accumulates in the cave of Meckel below the dura mater. Of great importance, according to Lexer, is this detail of technique. In describing the place where the ganglion lodges, Goyanes says that it is best to raise the cerebral convolution and next to separate the dura mater. He uses and recommends for this purpose strips of gauze, for the spatula of Krause causes a pressure, which in several cases has produced symptoms of aphasia. The separation of the dura mater, by which he probably means its dissection from the brain, is accompanied by hæmorrhage from the middle meningeal artery. It was easily stopped, and tying of the artery was not necessary. For the dissection and isolation of the ganglion the wing of the sphenoid was partly excised. At this point the foramen ovale becomes visible. Following the two branches of the trigeminal, it was easy to lift up the ganglion. At the same time the brain is raised with a spatula. In cutting the ganglion from the nerve exactness is very necessary, lest we injure its trunk as well as the origin of the trifacial and the near-lying oculo-motor nerves. This is an excellent and orthodox treatise on a difficult operation. It gives a sound exposition of the real rules that govern a good style of surgery, and will fulfil the aim of the author, which is to fix an amœbean technique, to shorten an otherwise tedious method. Thanks to the *a priori* knowledge derived from experiment in the dead body he makes no omissions. He describes three cases resulting in complete relief from quite intolerable misery, which had been too great for any other remedy.

NURSING IN WORKHOUSE INFIRMARIES.

THE executive committee of the Workhouse Nursing Association, of which the Princess Christian of Schleswig-Holstein is the president, has issued a statement calling attention to the unsatisfactory arrangements for the care of the sick in small rural workhouses. The statement points out that recent Local Government Board Orders have left essential alterations untouched and that some vital changes are still necessary. While nursing by inmates is prohibited, they still perform such duties as bed-making and the washing of helpless cases, and are employed on other duties which should be left to the skilled nurse. It is also pointed out that serious friction occurs in consequence of the head nurse in the sick wards being controlled by the master or matron, and rightly draws attention to the evils of placing the selection of temporary nurses in the hands of the master instead of the medical officer, and the absence of provision for direct communication between the medical officer and the nurse. The scarcity of nurses for the Poor-law service, owing to unsuitable conditions of work, is also alluded to. Fully recognising the careful consideration which the matter should receive the executive committee submitted in their last memorandum to the Local Government Board the following resolution: "That in view of the difficulty experienced by guardians in obtaining trained nurses for Poor-law infirmaries, this association urges the Local Government Board to establish a nursing service under the control of the department, by which means not only will the supply be efficiently regulated, but a status given to Poor-law nursing which will attract women who now look on Poor-law work as inferior to hospital and private nursing; but that, as a preliminary measure, an advisory committee of experts should be appointed by the Local Government Board to formulate a scheme."

THE DIAGNOSIS OF "GASTRO-JIJUMSTOMUS."

THE illegibility which is proverbially characteristic of medical prescriptions has often been defended on the score that the patient should not be encouraged to know anything about the drugs which he is taking. Medical students, too, are frequently sinners in respect of calligraphy; and in their case-notes they frequently complicate the deciphering of their writings by the adoption of an elaborate system of abbreviations and symbols defensible only on similar grounds of a desirable obscurity. It is not surprising that when such notes fall into the hands of the public their transcription may result in ludicrous mistakes. It is true enough that access to case-notes in hospital is not allowed either to patients, their doctors, or their legal representatives, but when the notes are placed, as so often happens, in the same frames as the temperature charts and treatment cards, it is impossible to prevent unauthorised persons from now and again perusing and copying them. A recent example of the results of this process has been laid before us. It consists of extracts from the hospital case-notes, copied by a patient for the purpose of establishing a claim upon an insurance company. The patient was in a well-known London hospital, where he was obviously very carefully and thoroughly treated. His account begins: "Clinical microscopist removed part of stomach wall. Ulcer on stomach and ulcer on duodenum. Structure of silurus and malignant." This passage was probably taken from the spaces at the top of the notes provided for purposes of reference and indexing, for the first sentence should doubtless be divided into two parts between the second and third words; the last one, it may be hazarded, should be "stricture of pylorus, non-malignant." We shall leave our readers to puzzle out for themselves some of the remaining gems of this comedy of errors, which continues with an account of a consultation between a physician and a surgeon and proceeds to a description of the subsequent laparotomy: "A vertical incision was in the middle line extending from infexis aspect of stanum for about 15 or 16 inches ...... the pentineums exposed and ...... a lump could be felt in the region of the pybrus. ...... The stomach was emptied by the promised end of the aioistant. ...... The proxurinal end was sewn up, and the piece of stomach and duodonum between the two divisions removed. That portion which had been removed was then opened and an ulcer found at the junction of the stomach and duodenous and another ulcer at the point of division of the stomach ...... a part of the posterior wall of the stomach was brought and approxunicted to the first loop of the prepunum by clamps. The periotnanum of the two parts was then sewn together with thread. ...... The appendix was then examined and proved to be very long and entangled and controlling the ileat effluent and had obviously been chemically inflamed ...... Oxygen was administered and also fruitary extract. He was also imperved with several limbs of saline ...... Diagnosis: Gastro-jijumstomus." Besides the laughable, though not unnatural, errors of transcription into which the patient fell in copying out what were probably hastily scrawled dresser's notes, these extracts throw also some interesting lights upon the operation. Whether the dresser really wrote "chemically" for "chronically" inflamed (appendix) it is, of course, impossible to say; but the passage about the "ileat effluent" contains internal evidence upon which a shrewd observer might make a very fair guess as to which side of the Thames the patient was warded. For the rest, the incident serves to show that sufficient care is not always exercised to keep hospital case-notes, which are the copyright of the institution, as strictly private as they ought to be; but the problem of doing so, it must be admitted, is very difficult.

URINARY REACTIONS WITH METHYLENE BLUE.

Dr. Da Pozzo has lately been conducting a series of experiments as to the value of these reactions.[1] With regard to Russo's reaction, which consists in adding four drops of a 1 per cent. solution of methylene blue to the urine, and in the production of a green colouration in cases of typhoid fever, out of 60 cases of other diseases the experimenter obtained a positive reaction in 14 instances. Using Loeffler's blue instead of ordinary methylene blue solution he obtained the typical emerald green colour whenever it was also present with the latter. From the results obtained it may be concluded that a positive result is easily obtained in Russo's reaction in a considerable number of morbid processes other than typhoid infection, and has therefore little clinical value. A further series of observations were made with the so-called Fuchs and Loutz reaction with special regard to its diagnostic value in relation to diseases of a malignant nature and principally with carcinoma and sarcoma. The method adopted was to add 3 to 5 drops of a Loeffler blue solution into a beaker of urine recently passed. The urine was stirred and left for 12 to 24 hours in an ordinary temperature. As a control a beaker of urine not so treated was taken. The blue colour is said to disappear in cases of malignant disease and in pregnancy. The results showed that in 14 cases of neoplasm the reaction was positive in 7. In 7 samples of the urine of pregnant women it was positive in 5. It was also positive in a certain proportion of urines from patients suffering from various other diseases, and in 3 out of 7 cases of healthy individuals. It was, moreover, found that the discolouration of the urine might take place after the 24 hours had elapsed, and sometimes even after eight to ten days. Dr. Da Pozzo believes that the reaction would become positive in a still larger number of cases observed if the urine treated with Loeffler's blue were left longer. He further investigated whether the presence of albumin, of phosphates in excess, or of urobilin had any influence on the reaction, but he was unable to trace any connexion between it and the more common pathological elements of urine. The conclusion arrived at, therefore, was that Fuchs's and Loutz's reaction bears no relation to the existence of neoplasms nor with the development of pregnancy, and in this sense it cannot be recognised as having any value as a guide, since the reaction takes place after a longer or shorter interval in a large number of other morbid processes and may be markedly positive even in healthy individuals.

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[1] Gazzetta degli Ospedali, Anno xxxv., No. 33, July 12th, 1914. Corso Magenta, Milan.

ANATOMICAL METHOD AND THE DESCRIPTIVE ANATOMY OF THE ILEO-CÆCAL VALVE.

THE idea that the descriptive anatomy of the human body is a subject long since exhausted is common among those who confine themselves to more modern branches of medical research. Yet such an idea is continually being shown to be erroneous. Anatomical descriptions have undergone a series of most interesting phases, each phase being determined for the most part by the prevailing method of preparation of anatomical material and by a more extended knowledge of the function of parts. Among the old masters of anatomy material was of necessity examined in its fresh condition, and in their writings some of the most accurate descriptions of gross anatomical conditions are to be found. The possibility of preparation and preservation of material, however, extended the field of research, but the descriptive anatomy based upon the examination of preserved material, although making many important advances, failed in many ways to reproduce the natural accuracy of the older work. A new phase arose, and this phase is marked in our museums by the dried and varnished specimens which are nowadays usually relegated to some top shelf. This was a period of injections, and of a multitude of new devices of preservation, and though it made more perfect the study of blood-vessels, of tubes, and of ducts, it did little to advance the knowledge of other viscera. A more recent influence upon descriptive anatomy was exercised by the introduction of formalin; and conspicuous in this phase we may note the modern descriptions of most of the abdominal and thoracic viscera. The formalin era is too recent for a proper estimation to be made of its influences for good or ill upon descriptive anatomy; but it is becoming more and more evident that some corrective is required from time to time to readjust the ideas derived from formalin-hardened viscera. For the study of the ileo-cæcal valve Dr. A. H. Rutherford has administered the corrective.[1] He has traced the descriptive anatomy of the ileo-cæcal junction from the time when cæca were inflated with gas and, having been dried and varnished, were preserved as typical of the conditions prevailing in the living body. The various appearances described as normal in cæca preserved and hardened in various reagents have been collected together. The fresh condition, as seen in animals killed suddenly, has also been studied; and, finally, Dr. Rutherford has put on record the picture of the actual living ileo-cæcal junction as observed through an artificial anus made in the anterior cæcal wall. This living ileo-cæcal orifice was seen as a rounded papilla, bright red in colour, and having a dimpled orifice at its summit—an appearance, of course, which differs widely from the description which, best realised in the dried inflated specimens, has become stereotyped in our text-books. There is far more in all this than the mere correction of an anatomical description. The slit-like ileo-cæcal valve of the distended, dried, and varnished cæcum could be regarded only as a valve—a flood-gate—which passively prevented regurgitation of cæcal contents into the ileum. From such an idea of its structure its function was argued. It was only some 10 years ago that Professor Arthur Keith as an anatomist, and Dr. T. R. Elliott as a physiologist, saw anything more than this valve action in the ileo-cæcal junction, and demanded a sphincteric action controlling entry from the small gut as well as reflux from the colon. It is still more recently that Dr. A. F. Hertz and Dr. Alan Newton showed the true action of the ileo-cæcal sphincter; and it may be said that the Hunterian ideal is again realised, for the ileo-cæcal junction described by Dr. Rutherford is exactly the sort of orifice one would expect to carry out the function described by Dr. Hertz and Dr. Newton.

ACCIDENTAL SYPHILITIC INFECTION: PRIMARY SUBCUTANEOUS SYPHILOMA.

Metchnikoff has shown by two observations that the syphilitic virus in monkeys can be transmitted to man; Buschke also demonstrated similar transmission to man from the virus in the rabbit. A case is further reported in which, as the result of an accidental prick by a Pasteur pipette which had recently been used for inoculation into rabbits of a testicular emulsion of syphilitic virus of this animal, a man became infected with syphilis. The patient was a laboratory attendant. He received the prick at the root of the right little finger on its palmar aspect. The virus was of the sixteenth passage through rabbits. Immediately after the prick the wound bled freely, and it was washed with a solution of perchloride. Seven days after, however, the finger became swollen and tender; there was no induration. A month later the patient felt indisposed. The temperature was raised. A radiographic examination of the finger showed "a process of rarefying osteitis." A week after the region of the first phalanx was much swollen. There was tenderness and the parts appeared uniformly reddish-violet. The subdermal tissues down to the bone were swollen and hard, and the finger remained in semi-flexion, although the metacarpo-phalangeal joint was free. In the left axilla were glands enlarged, hard, and painless; they were also found in the groin, submaxillary, and occipital regions. There were diffuse roseolar rashes over the body. Headache was intense. The Wassermann reaction was positive. The results of neosalvarsan given intravenously on four occasions were entirely satisfactory. The fingers became normal again, the rashes and headache subsided, and the Wassermann reaction became negative. A rabbit inoculated with the man's blood developed syphilitic signs. The case is considered to be unique as an example of primary subcutaneous syphilitic infection. It demonstrates also the persistence of the capacity of the syphilitic virus to infect man, even though it had been in rabbits for 22 months.

A TELEGRAM has been received from the secretary of the Congress, Dr. Jermann, of St. Petersburg, announcing that the International Ophthalmological Congress, which was to have been held at St. Petersburg on Monday, August 10th, has been postponed.

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[1] The Ileo-cæcal Valve. By A. H. Rutherford, M.D. Edin. London: H. K. Lewis. 1914. Pp. vii + 63, with two coloured plates and 20 half tone plates. Price 6s. net.

WE are asked to state that the library and offices of the Royal Society of Medicine, 1, Wimpole-street, London, W., will be closed for cleaning until Sept. 1st.

Mr. E. Saville Peck, M.A., of Cambridge, has been elected President of the British Pharmaceutical Conference. The next annual meeting will be held at Scarborough.

THE CLINICAL CONGRESS OF SURGEONS OF NORTH AMERICA.

FIFTH ANNUAL SESSION HELD IN LONDON DURING THE WEEK OF JULY 27TH.

THE Congress, which came to an end last week, went throughout its course without a hitch. The sessions were well attended and the metropolitan hospitals were daily visited by appreciative groups of earnest students. The interchange of knowledge and of point of view was wide and intimate and nothing but good to surgery can come of such a meeting. We are particularly glad to feel certain that the surgery of this country emerged from the strict trial of its merits with an increased reputation, and those members of the public who conceive it to be necessary to rush abroad for specialists' opinions will, we trust, note the fact.

Dr. W. L. Rodman, of Philadelphia, the President-elect of the American Medical Association, on his inauguration as Vice-President of the Clinical Congress, spoke of the feelings of American members of the medical profession towards the mother country in words which should be recorded. "Great as our obligations are as Americans," he said, "they are vastly greater as members of the medical profession, since from the birth of our country England has been the chief source from which our inspiration has been drawn. In becoming the hosts of the Clinical Congress of Surgeons of North America on this unique occasion, and one eloquent of opportunity for us all, the profession of Great Britain has enormously increased the indebtedness. We can best show it, for the nonce, by becoming their attentive and appreciative pupils and taking back to our brothers, who, unfortunately, cannot be with us, the many good things we have seen, and shall see, from masters in surgery. Recognising the occasion to be an unusual one, I am here to extend to the British profession the very cordial greetings and thanks of the American Medical Association." Dr. Rodman then outlined the activities of the American Medical Association, whose Council on Medical Education and Council on Public Health have worked so successfully for a high standard of scientific training among doctors and of sanitation among the people, both in peace and war.

The visit of members of the Congress to the Royal College of Surgeons of England was one of the things which impressed our visitors most. They were conducted over the largest and most complete pathological museum in the world by the President of the College, Sir W. Watson Cheyne; the late President, Sir Rickman Godlee; Professor Arthur Keith, curator; and Professor S. G. Shattock, pathological curator. The library also was visited, and this collection has claims which, without ranking quite as high as the Hunterian Museum, yet are very important. Professor Keith delivered a brief address to the visitors on the Nature of Peritoneal Adhesions, which we publish this week.

Before the discussion of the papers by the General Surgical Division on Thursday evening, July 30th, the President-elect, Dr. Charles H. Mayo, of Rochester, U.S.A., was introduced to the meeting, and briefly returned thanks for the honour done to him.

EVENING SESSIONS.

A.—GENERAL SURGICAL DIVISION.

THURSDAY, JULY 30TH.

The Non-operative Treatment of Cancer.

Professor KRÖNIG (Freiburg), who was to have read a paper on the Treatment of Uterine Cancer by X rays and by Radium, was unable to attend the Congress owing to his recall on account of the war in Eastern Europe. In his absence Dr. C. JEFF MILLER (New Orleans), who has paid a recent visit to Professor Krönig's clinic, narrated his impressions in a paper entitled "A Review of Professor Krönig's Work in the Non-operative Treatment of Carcinoma." One of the questions which he put to Professor Krönig was whether the latter is in favour of radiation treatment for early operable uterine tumours as well as for advanced cases. The reply was that at the present time operation has been given up entirely. The results of X ray treatment are regarded as superior to those of hysterectomy for fibroids, though in women under 40 myomectomy is undertaken when it is feasible. Treatment extends over three or four months, and must be repeated at several sittings. Malignancy, according to the Freiburg statistics, develops in only 1 per cent. of fibroids, and even when it does radiations will cure it. Contrary to the statements of Professor Bumm that deep-seated cancers cannot be influenced by X rays, Professor Krönig and Professor Aschoff are convinced that cases of unquestionable cancer of the stomach have been made to cicatrise, and that even when there have been secondary growths in the liver complete retrogression has been on occasion brought about. Radium and thorium in heroic doses are also very much employed in the Freiburg clinic, and special arrangements have been devised there for using these large doses without burning the patient's skin. Professor Krönig holds that high dosages of radium, strongly filtered, have great possibilities for malignant disease in deep organs. He believes in powerful radiations, carefully measured and properly controlled, administered over long periods. He uses these large quantities of radium and thorium from a greater distance than many other workers do; thus for carcinoma of the cervix he does not apply radium through the vagina, but only from outside the abdomen. He does not believe in the implantation of radium into actual growths. Dr. Miller confessed himself as much impressed by what he saw, but not by any means convinced that Professor Krönig is right. Nevertheless, he praised the latter's enthusiasm, and said that in course of time his work will yield definite conclusions.

Dr. J. F. PERCY (Galesburg, U.S.A.) read a paper illustrated by lantern slides of the special instruments which he uses in the treatment of cancer of the uterus by heat. The paper was published in THE LANCET last week (p. 309).

Professor T. WILSON (Birmingham) read a paper on Cancer of the Uterus, which also was published in THE LANCET last week (p. 318).

Dr. T. W. EDEN (London) directed the attention of the Congress to the fact that in the three papers read three separate lines of treatment were advocated for the same disease. As a critic he thought it his duty to warn against implicit faith in any of the three methods. An open mind should be preserved, though but for the consciousness of this necessity he would have felt inclined to reject at once the views of Dr. Percy. But he recognised that if the latter can prove his claims by statistics, properly and independently controlled, then in years to come everyone will do him honour. As regards the Freiburg treatments, Dr. Eden distinguished between radium and X rays. The latter are admittedly useful; of the former he is much less certain. Professor Bumm said, only three weeks ago, that if an adequate effect is produced at a depth of 3 to 4 centimetres by radium, then the superficial tissues are so extensively destroyed that death may result; and the speaker commented on the wide discrepancy between this view and that held by Professor Krönig. But as regards X rays the position is different. Dr. Eden has no doubt that a very beneficial local effect can be thus obtained, even though the disease may at the same time be advancing in the deeper tissues. As to operation no better or more extensive operation is likely to be devised than that of Wertheim, yet Professor Wilson's curability rate of 10 per cent. cannot be regarded as satisfactory. The best promise of improvement is seen in X rays combined with operation; one method alone should not be relied on, but combinations of methods adopted. And it must also be remembered that when in advanced cases operation is out of the question the use of X rays will free the patient from many of her troublesome symptoms, even though it will not cure the disease.

Mr. W. E. **MILES** (London) has never treated cancer of the uterus with X rays or radium, and therefore confined himself to the question of surgical treatment. In order to carry out a radical operation it is necessary, not only to remove the organ in which the primary growth originates, but also the tissue through which spread has taken place and the tissue through which spread will take place if the disease is unchecked. In mapping out these zones of spread surgeons and pathologists coöperate; and three such zones have been definitely determined in the case of cancer of the cervix. There is the downward spread into the vagina and the connective tissue on either side of it; in all radical operations as much of the vagina as possible should be removed. The lateral zone of spread is into the parametrium and mesometrium, which must in all cases be completely removed. The upward zone of spread is along the lymphatic paths. The statistics of the Cancer Hospital do not agree with those of Roger Williams, quoted in Professor Wilson's paper, to the effect that in 54 per cent. of cases of fatal uterine cancer there is no involvement of the pelvic glands. In such patients, dying from inoperable cancer at the Cancer Hospital, the interiliac glands are always affected, and they should always be removed when operating, whether they are obviously enlarged or not. If these glands at operation are found to be definitely infiltrated, then the common iliac glands should also be removed. The inner groups of the external iliac glands are also often involved, and sometimes the inguinal glands secondary to these. The lateral sacral glands, however, are never involved. Mr. Miles concluded by emphasising that the crux of the cancer problem is early diagnosis.

Dr. **JOSEPH C. BLOODGOOD** (Baltimore) said the preceding papers revealed truthfully the results of operations for fully developed cancer diagnosed clinically. But surgeons have been so overwhelmed with the details of technique of these extensive operations that they have not given enough consideration to the beginnings of cancer. Cancer practically always gives warnings to those in whom it develops, and therefore any campaign of education in the beginnings of cancer is justifiable, no matter what it costs. At the stage in which cancer ought to be treated the mortality should be practically *nil* in well-trained hands. The early preventive treatment of cancer is all-important, for cancer never begins in a healthy spot. Slides were then shown in illustration of these contentions, and also of cases in which after apparent cure of superficial cancer by X rays, radium, cauterisation, and curetting cancer cells were demonstrated under the healed epidermis.

FRIDAY, JULY 31ST.

Professor W. L. **RODMAN** (Philadelphia), President of the American Medical Association, opened a discussion on

Carcinoma of the Breast.

He devoted especial attention to the question of the diagnosis of malignant from benign growths and inflammatory conditions. Twenty years ago benign tumours were estimated to be only 9 per cent. of mammary neoplasms, owing to some faulty German statistics published by Gross. In these same statistics sarcoma was given undue prominence at that time, and its frequency was over-estimated. Dr. Bloodgood finds that at the Johns Hopkins Hospital sarcomata constitute only 1·5 per cent. of breast tumours; and they are, in fact, so rare as to be almost a negligible quantity. During the past ten years much more attention has been paid to chronic fibrous and glandular hyperplasia, the result of abnormal involution of the breast, which has often been mistaken for cancer. This condition is very common, especially about the menopause. Since the age of occurrence is so similar to that of cancer, it is important to differentiate the two lesions. Chronic fibrous hyperplasia is frequently bilateral, whereas only 2 per cent. of breast cancers are bilateral. Early cancer is not painful, whereas abnormal involution is always painful. The pain is exaggerated just before each menstrual period, and enlarged superficial veins are then seen over the breast. These are also seen in sarcoma, but not in carcinoma. 20 per cent. of cancer of the breast occurs between 20 and 40 years of age. Cancer, unlike benign neoplasms, soon becomes fixed by infiltration, though the amount of this fixation may be very slight at first and only to be detected by very careful examination. If there be atrophy of the superficial fascia, however small, or dimpling of the skin, however slight, the probability is that carcinoma is present unless chronic mastitis has previously existed. Comparison of the two breasts is of great importance in diagnosis, but retraction of the nipple has been given too much attention—it does not occur in 48 per cent. of all carcinomata of the breast, whereas it does occur in 5 per cent. of benign growths and more often still in abnormal involution. There is a difference, however, in that in cancer the nipple, as well as retracted, is infiltrated, fixed, and immobile, whereas in benign growths there is mobility and no fixation of the nipple. Volkmann's carcinomatosis of the breast is so like inflammatory conditions that five out of the seven cases which Professor Rodman has seen had already been operated on for abscess, and this usually happens; the diagnosis is not easy. This disease is not confined to pregnant women; it is more frequent in those who are not pregnant, and it often occurs in maiden women about the menopause. It is so rapidly fatal—in a few weeks to three months—that in Professor Rodman's view it should not be operated upon at all unless for palliative purposes or for psychical effects. The differentiation of benign from malignant cysts is even more difficult than in the case of solid tumours. Thick granular discharge from the nipple is strongly suggestive of carcinoma, and so are serous or sanguinolent discharges. The latter, however, may be seen in abnormal involution, even long before carcinomatous change has supervened, for this condition is very prone to undergo malignant degeneration. Pure blood from the nipple nearly always means papillary cystadenoma, which also is often subject to malignant change. In at least 25 per cent. of cases a skilled diagnostician may fail to make the right diagnosis clinically. There is a safe way to proceed—that of exploratory incision. Benign growths are convex on section, pink or pinkish-white in colour; malignant are usually concave, creak under the knife, and practically always have more or less of a grey tinge. Though the expert may be able with fair certainty to tell the benign from the malignant growth by inspection, the less experienced cannot do so; only frozen sections, examined at the time of operation, will save the operator from mistakes. Professor Rodman has employed this method for 20 years with only one case of error, and even in that case the error was discovered in time to save the patient by a second operation. In his experience the chance of mistake in the examination of a frozen fresh section is actually less than in that of fixed tissues. The paper concluded with a lantern slide demonstration of the author's operative technique.

During the reading of Professor Rodman's paper a woman suddenly rose in the body of the hall and began to make a suffrage speech. Only the first sentence, "I am a mouse," was audible; the rest was drowned by the protests of the audience. Efforts were made to persuade the woman to retire, but in vain. Finally, still speaking, she mounted a chair, from which she was then removed by a commissionaire, who carried her out of the hall.

Mr. W. **SAMPSON HANDLEY** (London) differed on one or two small points from Professor Rodman. Cancer of the breast is not always a fixed tumour, nor does the skin always dimple over it. He agreed with Professor Rodman as to the importance of frozen sections, but said that unfortunately pathologists as good as those with whom Professor Rodman works are rare. A few years ago the embolic theory of cancerous dissemination was held. According to this supposition, the distribution of secondary foci is the result of chance. Yet the legs below the knee and the arms below the elbow are practically never affected by metastases from cancer of the breast. Secondary deposits are very rarely found at a greater distance than 24 inches from the primary growth. Mr. Handley's researches showed him that the embolic theory is true for the axillary glands, but that other metastatic deposits are due to permeation, which is the true method of growth and dissemination of cancer of the breast. The reason why permeation so long escaped observation is that it is at first a fugitive process. A lymphatic blocked by cancer cells soon becomes free again and only an almost imperceptible fibrosis remains. Permeation was then illustrated by a number of lantern slides showing microphotographs of the process.

Intestinal Stasis.

Sir BERKELEY MOYNIHAN (Leeds) opened a symposium on Intestinal Stasis. He asked, What is meant by intestinal stasis? It is asserted, first, that at definite points along the intestinal canal certain membranes, veils, or webs are frequently found; secondly, that because of these delay occurs in the passage of the intestinal contents, and that in consequence a process of intoxication takes place; thirdly, that by this intoxication some diseases are directly caused, and many others, even most others, are indirectly encouraged. Sir Berkeley Moynihan admits that these membranes are frequently present, as described. This is entirely beyond cavil. But the question of the origin and bearing of these bands can be disputed. Most of them he confidently believes are congenital. As long ago as 1899 he published an account of the dissection of a large number of fœtuses and infants in whom these membranes were found. Jackson's membrane is most commonly of congenital origin. But the bands found at the hepatic and splenic flexures of the colon are seldom congenital; about the origin of these he agrees with Sir Arbuthnot Lane. Sir Berkeley Moynihan was disposed to doubt if these bands were responsible for intestinal delay and obstruction, for the gut is generally not hypertrophied as it should be if some obstruction existed. Delay undoubtedly occurs in the typical case of intestinal intoxication, not from obstruction by the bands but from incapacity of the enfeebled intestine to empty itself. There is a type of individual recognisable at sight who can be said to be suffering from Lane's disease. After describing the type he said these are really cases for surgical treatment, though early cases can be helped very greatly by massage and paraffin. What operation should be selected? Ileosigmoidostomy results nearly always in regurgitation back along the colon to the cæcum. Anastomosis is of no use, for it is impossible to prevent this regurgitation. When these operations relieve symptoms, then intestinal stasis has not been the cause of the symptoms in those cases. In true intestinal stasis removal of part of the intestine should be practised. The lower end of the ileum, the cæcum, and the ascending colon are the parts which it is best to remove. If surgical treatment is to be adopted it is wiser not to do a short-circuiting operation, but to take out these parts only. What are the diseases which are affected by intestinal stasis? What are the relations of intestinal stasis to gastric and duodenal ulcer and cholelithiasis? Sir Berkeley Moynihan believed that the cause lies more often in the appendix, not in intestinal stasis. Therefore when surgical treatment is directed to these diseases the surgeon is exceeding his duty towards his patient if he deals with anything beyond the demonstrable lesions of the case. It is claimed that joint tuberculosis, rheumatoid arthritis, and many other diseases are often caused by intestinal stasis and cured by colectomy. Sir Berkeley Moynihan has seen cases of rheumatoid arthritis improved beyond the wildest expectation by operative abdominal measures. But it has to be remembered that drainage of an infected gall-bladder or removal of a diseased appendix will cure some cases of this disease; and it has to be remembered that most of these cases are not benefited by operative measures intended to prevent intestinal stasis. The same holds good of tuberculous joints. Some of the worst kinds of these cases show marvellous improvement after the whole of the surgical assault has been devoted to the intestinal canal. The causal relation is worthy of a wider trial and investigation, but more than that cannot yet be said. The enthusiasts, however, want us to travel with them much further than this. Almost all the diseases that afflict patients submitted to surgery, as well as many of those which are still for the present in charge of physicians, are regarded as amenable to surgery directed to the intestines. Sir Berkeley Moynihan was very strongly disinclined at present to accept the evidence so far put forward in support of these views, but was eager to examine all new evidence bearing on the subject. He believes the subject must be inquired into very carefully, for among much dross there is a nugget of pure gold.

Sir BERTRAND DAWSON (London) pointed out that the phrase "intestinal stasis" is being used in two different senses. One means the actual delay in the passage of the intestinal contents; the other as indicating the clinical picture of the results of such stasis. Now the routine use of bismuth meals shows that many persons have delayed ileal effluent without suffering from any symptoms attributable to it. The large intestines play the principal part in the production of the symptoms of intestinal stasis; and the best results of colectomy are seen when the large bowel is definitely diseased. It is important to put aside any bias against the colon, and not to get the habit of regarding it as a useless organ which is just as well removed as left. The indications must be definite before the operation is advised. Apart from the mortality of the operation of colectomy, which is not negligible, it is often followed by frequent actions of the bowels at irregular intervals. The intestines are also easily affected after colectomy by changes of temperature and by fatigue. These inconveniences are of little moment when the patient's entire outlook on life has been changed, but they are drawbacks which should not be ignored. The successes of the operation are very striking, but side by side with these there are great failures. This is not in itself a condemnation of the operation, but merely constitutes a plea for critical selection of cases, for the failures are not due to any faults of technique. If an appendix is removed, but the symptoms are not cured, at least no harm has been done to the patient. A gastro-enterostomy which is unsuccessful can be undone again. But a mistaken colectomy can never be undone, and a further reason for careful selection of cases is the fact that we do not yet know the full effects of colectomy on the future nutrition of the patient.

Professor J. C. BLOODGOOD (Baltimore) made an emphatic appeal for facts in the consideration of this subject. For example, in how many cases in which the appendix has been removed is there a failure to cure the patient's symptoms?—that is, in cases where it was doubtful whether the appendix had been the cause of those symptoms. Again, in how many cases of gall-bladder disease, acute or chronic, with or without gall-stones, is there a failure to cure symptoms by drainage of the gall-bladder, removal of the stones, or by removal of the gall-bladder? In the last 25 years 700 such cases have been treated in the Johns Hopkins Hospital, and so far only three of them have returned with symptoms referable to the colon. For the purpose of analysing their cases at the Johns Hopkins Hospital the cases of colon disease are divided into five groups. In one of these groups, in which clinically the symptoms have been those of intestinal stasis, the patients have been relieved by the proper treatment of naso-pharyngeal and sinus infections. In the second group abdominal operations have been performed. In Baltimore gastro-enterostomy is an operation which is not done if it can be avoided, but when it has been done the results have been uniformly good. The third group includes those in whom adhesions have been found, whether embryonic or acquired. The results of operations for division of the adhesions, though good, have not been so good as those in similar cases from operations of a different type. The fourth group includes the terminal cases, those now under discussion. Professor Bloodgood cannot convince himself that side-tracking is an operation of choice, though it may be one of necessity.

Sir W. ARBUTHNOT LANE (London) said that in view of the lateness of the hour he would not keep his audience more than a minute or two. He had nothing whatever to add to what he has said over and over again upon intestinal stasis. If his views were correct they must, he said, triumph; if not, they would perish. He was content to leave it to his audience to judge the result.

B.—SPECIAL SURGICAL DIVISION.

TUESDAY, JULY 28TH.

Congenital Obstruction of the Post-nasal Orifice.

Dr. **CHARLES W. RICHARDSON** (Washington, D.C.) said that the occurrence of this condition is described by many writers as a very infrequent form of nasal deformity, but that he had come to the conclusion that it was one of the most frequent types of congenital malformation in the nasal chambers. If many specialists of large experience had never seen a single case it was because so many of the infants speedily died with the condition unrecognised or wrongly classified as asphyxia neonatorum. The number of observed cases in children and adults had, he said, greatly increased during the last 20 years, but the number of cases in the newly born had not increased in the same proportion, the general practitioner and the obstetrician alike not having been sufficiently taken into the confidence of the rhinologist. He remarked that the form of deformity affected the female more frequently than the male, while the relative frequency of the bilateral to the unilateral form was in proportion of 3 to 1. Dr. Richardson continued with an elaborate description of congenital atresia, discussing the pathogenesis, the morphology, and the views of those authorities who have mentioned the subject.[1]

Dr. **DUNDAS GRANT** expressed the indebtedness of the meeting to Dr. Richardson for the interesting communication. The condition, he said, especially when bilateral, is a rare one; possibly it passes unobserved and the cases are included among those of asphyxia neonatorum as a whole. During ten years of considerable experience of midwifery he was convinced that he had never met with a case, but it is so serious when overlooked that the characteristics cannot be too well known. He read the following graphic account given by Dr. Ronaldson, an exceptionally gifted man and one of Lord Lister's earliest house surgeons in Edinburgh:—

> When the child was born I at once noticed that there was some peculiar obstruction to its breathing. On attempting to inspire the lungs were not inflated, while the under-lip and cheeks were sucked in. On slapping the buttocks to make the child cry there was no difficulty to free respiration when the mouth was opened. On keeping the mouth open by a spoon and pulling the tongue a little forward it breathed well and steadily and cried lustily. There was, therefore, no obstruction to the respiration through the mouth and larynx. I accordingly proceeded to examine the nostrils, when I found that they were filled with a substance translucent in appearance and glue-like in consistence, and which, on being taken hold of, could be pulled out *en masse*, like a piece of tough glue. It was evidently a collection of inspissated mucus. After clearing the nose of this mucus I attempted to blow air through the nares, but failed. Passing the forefinger of one hand to the back of the pharynx, with the pulp directed upwards, I tried carefully and repeatedly to pass a probe, bent at the end, along the floor of either nostril and through the posterior nares so as to touch the finger in the pharynx. I failed to do this, and came to the conclusion that there was some organic obstruction of the posterior nares. As, on watching the child, I observed that whenever it reached a point of moderate asphyxia it opened its mouth to cry, and thereby had an opportunity of inflating its lungs through the open mouth, I thought I might with safety take the case to avizandum before attempting to do anything for its relief. On returning next day I found, to my great disappointment, that the child had died an hour after my departure. I fortunately had an opportunity of making a post-mortem examination which, though imperfect, was sufficient to show that the posterior nares was completely occluded by a firm membrane. The firmness of this occluding membrane was such that an ordinary surgical probe could hardly be forced through it without bending on itself; indeed, it did so bend on itself before perforation was accomplished. After the probe perforated the membrane it passed freely into the pharynx. I did not discover any other abnormality. The nose, anterior nares, cavities of the nostrils, the hard and soft palate, were normal. The child was plump and well developed generally. (*Edinburgh Medical Journal*, 1881, p. 1035.)

"It is known," Dr. Dundas Grant continued, "that in some of the lower animals the vestibule of the larynx extends upwards in the form of a tube into the naso-pharynx, and that in the human infant the epiglottis is for some time after birth at least behind the soft palate. The late Dr. Robert Bowles relieved asphyxia by drawing up the epiglottis, and the late Dr. James Foulis invented a lever for depressing and drawing forward the base of the tongue in cases of threatened asphyxia, such as occurred in the apparently drowned or in advanced alcoholic intoxication. In unilateral cases the same dangers do not exist and the symptoms are not those of asphyxia but of nasal discharge which consists of mucus and lacrymal secretion. The appearance of this peculiar discharge has been variously described, but I have long taught my students that nasal discharge resembling 'laundress's starch' was an indication of complete posterior occlusion. In the adult it is not likely to be overlooked, but I have to confess to having once missed it in a young woman who was casually referred to me for removal of adenoids in a large out-patient department, when after such removal there was still a complete obstruction, which I found to be one of the class which we are now dealing with. In regard to treatment Dr. Richardson has indicated to us the necessity for enforcing mouth-breathing until the patient acquires it, as is usual in the course of some ten days. A small gag might be fixed between the gums, and no doubt a discreet attempt might be made to push a probe through the obstruction if happily it was purely membranous and yielded to moderate pressure, but any violent attempt with the risk of making false passages should in the new-born child be discouraged. Many of us have made use of very small post-nasal forceps, such as StClair Thomson's, for the diagnosis of adenoids in infants in whom the naso-pharynx is too small for the finger to be used, and a similarly shaped instrument might be thought of for opening the posterior nares. A perforation is readily made through whatever portion of the obstruction may be membranous, but as a rule there is a very thick layer of bone which can only be removed by judicious chiselling. The maintenance of the opening without the prolonged retention of a tube has been a problem, and the key to its solution was, I think, first given by Charters Symonds, who described that in such cases he removed a portion of the posterior part of the vomer. This principle has been further developed by Uffenorde as described by Richardson, but still further by von Eicken, whose process in the light of our familiarity with the submucous resection of the septum is likely to find favour. He performs complete submucous resection, removing the bone to its posterior margin and chiselling away the thickenings at the side of the septum and on the floor of the nose; he then replaces the muco-periosteum, punctures any fibrous septa that remain, and then cuts away with an instrument analogous to a conchotome working backwards the posterior part of the thin remaining membranous nasal septum. For those who are not familiar with intranasal surgery a perforation far back in the septum made from the sound side by means of a sharp spoon will meet many of the requirements of the case, so far at least as to enable the patient to blow the secretions out of the obstructed side. Reference has been made to the asymmetry of the face which ought to follow congenital occlusion of one choana. I can only say that when the late Mr. Cresswell Baber and I looked for the atrophy in our two cases we found that any trace of it which existed was on the wrong side. I can only hope that this work of Dr. Richardson will be carefully studied and properly appreciated by those who practise midwifery and who have the responsibility of meeting this condition when it occurs in the new-born child, the matter being then a question not merely one of nasal discharge but of the life or death of the little human being."

THURSDAY, JULY 30TH.

A symposium was held in the ballroom of the Savoy Hotel on

The Surgery of Cleft Palate,

when the subject was introduced by Dr. **GEORGE I. V. BROWN** (Milwaukee), who stated that all operations—and he enumerated the procedures in vogue—should be directed in three ways:—first, to covering the gap; secondly, to obtaining of speech; and thirdly, to improving general health. Therefore the warnings to the surgeon were: first, to do no correcting method where natural physiological development would obviate its need; secondly, to destroy nothing that might be wanted in such development; and thirdly, to do no more than was wanted at each step. He therefore condemned destruction of the premaxilla, and was critical of compression of the maxillæ. He considered that the operation should begin with closure of the lip as early as the first day, to be followed by closure of the hard palate, and lastly of the soft palate, completing the case at one and a half to two years. He approved of lateral incision to relieve tension where necessary. He showed slides of the "before" and "after" condition of the patients illustrative of remarkably good results.

Dr. **JOSEPH R. EASTMAN** (Indianapolis) followed with a paper which was published in THE LANCET of August 1st, p. 312

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[1] We hope to publish the full paper later.

Dr. TRUMAN W. BROPHY (Chicago) began by insisting that the gap at birth was only potential; "the normal amount of tissue is there," he said, "and should be used immediately to close what is in effect a wound. What surgeon waits two years to close a wound?" He laid stress on the broadness of the upper jaw in these cases, whereas the normal upper jaw is narrower than the lower jaw. If left alone the tongue increases the cleft, and the upward pressure of the lower jaw does the same. The two sides should be brought together by compression, the necessary wiring being above the tissues and between the teeth. Lateral incisions were unnecessary, produced needless and troublesome scar-tissue, while blood and nerve supply were interfered with, and deafness might be caused by cicatrices in the neighbourhood of the Eustachian tube. By lead-plate compression and tension wiring perfect speech was produced, and he showed three patients on whom he had operated for different conditions and at different ages, the perfect results being illustrated by their delivery of recitations.

Sir W. ARBUTHNOT LANE said that he could only claim for his procedure perfect simplicity. Impressed with the danger many years ago of following a teaching that was so universally accepted as that of procrastination for four years, he decided to close the cleft in the lips and hard palates of infants at the earliest possible moment. In a month or so he closed the cleft in the soft palate. His procedure was based on restoring to the infant at the earliest possible opportunity the proper chances for development of the bones of the face.

Mr. JAMES BERRY (London) said the operation by median suture was the only one which restored the palate to its natural condition. If properly performed it gave the patient the best prospect of subsequent good speech. The age at which he preferred to operate was the earliest at which the cleft could be satisfactorily closed by median suture. The exact age depended largely upon the nature of the cleft. Narrow clefts, especially if limited to the soft palate, could be operated upon with advantage by this method within the first few months of life. The common, single or double, complete cleft associated with harelip should be treated by closure of the harelip in earliest infancy, the operation on the palate being postponed until the second or sometimes the third year. He had never advocated postponement of operation to any later period. At and soon after birth the cleft was usually very wide and the palatine arch low. If any median operation were attempted at this period it would usually fail unless preceded by the wiring operation of Brophy, which he thought too dangerous to be generally employed. The reason for postponing the palate operation for a year or two was that after suture of the hare lip the cleft in the palate underwent rapid spontaneous narrowing, and the development of the alveoli made the arch higher. In proof of this he showed photographs[1] of three similar cases of complete single cleft palate. One showed the usual very wide cleft as seen at birth. Next was an exactly similar case in which after suture of the harelip and then a delay of two years, the cleft had become so much narrower that he had easily closed it by median suture with excellent result. The third case of the same kind showed a still greater degree of spontaneous closure. The patient was not seen by the speaker until she was 10 years old and had been left unnecessarily long without operation. He entirely agreed with Sir Arbuthnot Lane as to the "simplicity" of his turnover flap operation, and also with the statement that most mothers of cleft palate babies (and often their doctors) were exceedingly anxious that operation should be performed as early as possible. This was but natural and accounted largely for the frequency with which such operations were performed at the present day, especially by many who do not follow up their cases and ascertain the actual results as regards subsequent speech. Sir Arbuthnot Lane, so far as he knew, had never brought forward any proof that the ultimate results of such turnover operations were really good. At a demonstration of post-operative cleft palate cases arranged by the Royal Society of Medicine a few years ago[2] with the object of comparing the results of the various operations, Sir Arbuthnot Lane produced but one patient who unfortunately was too young to speak. He himself, Mr. R. W. Murray, and others had on the same occasion shown large numbers of patients successfully operated upon by the Langenbeck operation. He thought that exact information as to the subsequent results of their operations should be brought forward by the advocates of the turnover flap operation in early infancy. Why did they not publish long series of consecutive cases giving actual after-results, as Mr. Berry himself had done more than once with regard to his own operations? With regard to lateral incisions, he employed them much less than formerly, as he found that the wide mattress stitch in the soft palate, similar to that employed by Brophy for this part, often rendered them unnecessary. The most difficult cleft to close satisfactorily was that in which the lip and alveolus were unaffected, but in which a very wide cleft involved all the rest of the palate and had a rounded anterior end. In such cases he thought it best, as a rule, to close the soft palate at some period during the early part of the second year, and, if necessary, to postpone operation upon the hard palate for some months, at the end of which the opening would be found much narrower. In conclusion, he showed three patients after operation for the three principal varieties of cleft that he had described, and demonstrated the satisfactory nature of their speech by making them pronounce various difficult words suggested by the audience.

Mr. PERCY LEGG (London) closed an interesting debate by asking the audience to remember that while to secure good speech was the great aim of all procedures, speech could only become good by careful education.

FRIDAY, JULY 31ST.

Mr. WALTER JESSOP presided over an interesting meeting of ophthalmologists, at which Lieutenant-Colonel R. H. ELLIOT, I.M.S., Mr. F. RICHARDSON CROSS (Bristol), and Mr. J. B. STORY (Dublin) made valuable contributions. Colonel ELLIOTT'S paper on the Sclero-Corneal Trephining Operation for Glaucoma was discussed by Mr. TREACHER COLLINS; Mr. BISHOP HARMAN replied to Mr. Cross's conclusions on the Operative Procedure for Strabismus; and Mr. HOLMES SPICER answered Mr. Story, who dealt with Operations for Senile Cataract. The meeting was incommoded by the loss of the Savoy ball-room on the last evening of the Congress.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

MEETING OF COMITIA.

A COMITIA was held on July 30th, Sir THOMAS BARLOW, Bart., K.C.V.O., the President, being in the chair.

The following gentlemen were admitted Members of the College, having passed the necessary examination:—Adolphe Abrahams, M.D. Cantab., L.R.C.P.; Cuthbert Delaval Shafto Agassiz, M.D. Aberd.; Harold Wordsworth Barber, M.B. Cantab.; Frederick Charles Davies, M.B. Cantab., L.R.C.P.; Arthur Geoffrey Evans, M.B. Cantab., L.R.C.P.; Herbert Thomas Evans, M.B. Oxon.; Thomas Lionel Hardy, M.B. Cantab., L.R.C.P.; Sohrab Shapoorji Vazifdar, L.R.C.P.; and Henry Owen West, M.D. Lond.

Licences to practise physic were granted to 97 gentlemen who had passed the required examination.

Diplomas in Public Health were granted in conjunction with the Royal College of Surgeons of England to 39 gentlemen who had satisfied the examiners.

The Murchison Memorial Scholarship was awarded to Charles Jennings Marshall, M.B. Lond., of Charing Cross Hospital.

The following gentlemen were elected to the undermentioned offices:—Censors: Dr. Percy Kidd, Dr. Howard Henry Tooth, C.M.G., Dr. Theodore Dyke Acland, and Sir Wilmot Parker Herringham. Treasurer: Sir Dyce Duckworth, Bart Emeritus Registrar: Dr. Edward Liveing. Registrar: Dr. Joseph Arderne Ormerod. Harveian Librarian: Dr. Norman Moore. Library Committee: Dr. Cyril Ogle, Dr. Leonard George Guthrie, Dr. Herbert Morley Fletcher, and Dr. Thomas H. Arnold Chaplin. Curators of the Museum: Dr. John Mitchell Bruce, Dr. Seymour John Sharkey, Dr. Frederick William Andrewes, and Dr. William Hunter. Finance Committee: Dr. Donald W. C. Hood, C.V.O., Sir James Reid, Bart., G.C.V.O., K.C.B., and Dr. James Taylor.

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[1] For these see Brit. Med. Jour., Oct. 28th, 1911.
[2] THE LANCET, vol. i., 1911, pp. 1251, 1406, 1607.

The PRESIDENT reported that the Bissett-Hawkins Memorial Medal had been awarded to Sir Ronald Ross, K.C.B., for his distinguished work in connexion with malaria, and that the Gilbert Blane Medal had been awarded to Surgeon Gilbert F. Symes under the new regulations. The President also announced that he had nominated Dr. R. Percy Smith and Dr. F. W. Mott to the Board of Studies in Connexion with Mental Diseases.

The gift of a china tea-service was received from Dr. Frank Shufflebotham, Milroy Lecturer for this year, and the thanks of the College were directed to be sent to him.

A report was received from the Censors' Board upon a communication dated May 4th last, received at last College from an Interdepartmental Committee of the Foreign Office, in which an opinion was requested concerning restrictions in the sale of opium and other narcotics. This was referred to the Censors' Board for a further report.

The REGISTRAR moved for the first time the following temporary by-law:—

That Dr. Robert McCarrison, being resident in India, be admitted to the Fellowship of the College, any by-law to the contrary notwithstanding.

This was passed.

Sir WILLIAM CHURCH was re-elected a member of the executive committee of the Imperial Cancer Research Fund upon the nomination of that committee.

Reports were received from the representative of the College on the General Medical Council, from the committee of management, the College finance committee, the library committee, and the curators of the museum.

After some further formal business the PRESIDENT dissolved the Comitia.

ROYAL COMMISSION ON VENEREAL DISEASES.

GIVING evidence before the Royal Commission on Venereal Diseases, Mr. Edward Smallwood, J.P., L.C.C., chairman of the directors of the Alliance of Honour, said that this organisation was an association of men who pledged themselves to the object of purity. The alliance had been in existence about 11 years, and had now some 500 branches in different parts of the country and a membership of 42,000, which was steadily growing. He believed that by inculcating principles of purity and chivalry and by the work of moral education the alliance was attacking a great social evil with its attendant diseases at the source. Mr. Smallwood said that his experience showed that ignorance was one great cause of persons contracting venereal diseases. The alliance was endeavouring to combat this ignorance by means of lectures and public meetings and by the dissemination of literature; the two branches of instruction, moral education and instruction in the actual physical dangers, were kept side by side. Official action was, however, extremely desirable on the subject of education. Instruction should be given to the young in schools and colleges on a properly graduated plan, and it would be necessary that carefully selected teachers should receive special training, which would enable them to impart this particular kind of instruction.

Mr. P. Macleod Yearsley, senior surgeon to the Royal Ear Hospital, stated that in his opinion syphilis with its concomitants was as severe amongst children of the poor as it was when he started practice as an aural surgeon 21 years ago. He had found that amongst children there were far more cases of manifesting congenital syphilis among the poor than among the better class; this he attributed to the fact that in the latter the disease was recognised earlier and therefore treated earlier. Among the poor syphilis very often went untreated, and this was specially the case with children. As showing the number of children with congenital syphilitic deafness appearing after birth with sufficient severity to necessitate special education, he referred to records he had kept in connexion with work at special deaf schools. Of the 845 children (427 boys and 418 girls) examined during a period of seven years, 61, or 7·21 per cent., were deaf from congenital syphilis; the females affected were greatly in excess of the males, the relative percentages being, boys 4·94, girls 9·56. Mr. Yearsley stated that the treatment of acquired syphilitic deafness nearly always failed. It had been pointed out that the children who became blind and deaf were those in whom syphilis went untreated in infancy. It was therefore important that treatment should be obtained as soon after birth as possible. The widest possible routine application should be made of methods of diagnosis, and the Wassermann reaction should occupy a prominent place. Advantage should especially be taken of school inspection for the purpose of applying the reaction in all suspected cases, not only of the school children themselves, but of the parents. All cases should be thoroughly treated as early as possible. Mr. Yearsley stated that the National Bureau for Promoting the General Welfare of the Deaf, whose representative he was, in its provisions for promoting the prevention of deafness, had the notification of all cases of congenital syphilis and facilitation of treatment for mother and child.

Dr. James Galloway, senior physician to the Charing Cross Hospital, stated that recent experience gained in dealing with venereal diseases in the army and navy greatly encouraged the expectation that these diseases might, if favourable conditions were obtained, be prevented, and their evil consequences diminished in the general population. He did not think, however, that compulsory measures involving registration and treatment were likely to lead to satisfactory results. In dealing with the general community it was necessary that all efforts to cure and eradicate these diseases should be reinforced by the willing consent of the sufferers and by the sympathetic coöperation of the rest of the community. Social slur or stigma should so far as possible be removed from those under treatment. It should be strongly impressed upon the public that large numbers of persons suffered from venereal disease through no fault of their own. Facilities for efficient treatment should be provided for all classes of the community and for both sexes. It was more important from the point of view of the public health that poor and ill-educated patients should be successfully dealt with than those in better circumstances and presumably greater intelligence. In the case of the poorer patients these diseases (even when recognised) were often looked upon as matters of comparatively little importance. All hospitals willing to undertake the treatment of venereal diseases in their early or acute stages should be encouraged to do so. If this were done facilities would immediately be at hand for the greater number of patients. It was especially desirable that hospitals with medical schools should undertake the treatment of these diseases in any general scheme of dealing with these maladies throughout the community. Opportunity would thus be provided for the instruction of medical students in the recognition and treatment of veneral diseases in a way which had been impossible in the past. Dr. Galloway thought that the cost involved in the treatment of these diseases on a large scale would be considerable, and as the proper treatment and eradication of the diseases was a matter affecting the general health of the whole community it was proper that the expense should be met by local authorities or by the State.

Mr. Pugin Meldon, senior surgeon to the Westmorland Lock Hospital, Dublin, gave evidence before the Commission as the representative of a joint committee appointed by the Royal College of Physicians of Ireland, the Apothecaries Hall, Ireland, the School of Medicine at Trinity College, Dublin, and the National University of Ireland. The committee laid stress on the point that the difficulty in dealing with venereal diseases arose from the social stigma attaching to those suffering from them. This stigma was certainly a hindrance to early diagnosis and treatment, and this being so it was not desirable to establish for the treatment of the general class of venereal disease patients special dispensaries and hospitals or special laboratories for diagnosis. As regards diagnosis, it was essential that clinical methods should be supplemented by the aid of the pathological laboratory, and arrangements should be made for the free diagnosis of venereal disease at the laboratories in the pathological departments of the universities and medical schools. With regard to treatment, the committee were of opinion that one cause which operated very extensively in deterring people from obtaining proper treatment was the penalisation of venereal disease. Employers of all kinds were in the habit of either dismissing from their employment persons who were found to be suffering from these diseases or refusing them leave for the purpose of treatment. The result was that these persons either endeavoured to treat themselves or resorted to advertising quacks, and only sought a physician when the disease was so far advanced that they were unable to do their work. So long as this penalisation persisted it was impossible seriously to suggest any scheme of notification and therefore any really effective method of prevention. Similar considerations led the committee to suggest that the Insurance Act should be amended so as to make it impossible to withhold sick pay and disablement pay in cases of venereal disease. The committee referred to the fact that some general hospitals have rules precluding the admission of venereal patients, and they suggested that pressure should be put upon such hospitals to have these rules rescinded.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

MEETING OF COUNCIL.

AN ordinary meeting of the Council was held on July 30th, Sir WILLIAM WATSON CHEYNE, the President, being in the chair.

It was resolved to grant Diplomas of Membership to 95 successful candidates.

It was resolved that the Universities of Bristol and Wales and the Imperial University of Japan should be added to the list of universities whose graduates in medicine and surgery may present themselves for examination for the Fellowship without first becoming members of the College.

It was resolved to grant jointly with the Royal College of Physicians of London Diplomas in Public Health to 39 successful candidates.

Sir William S. Church, Bart., K.C.B., was re-elected a member of the executive committee of the Imperial Cancer Research Fund.

The PRESIDENT reported that in accordance with the result of the examinations for promotion to the rank of staff surgeon held in January and June of this year, the Sir Gilbert Blane Medal had been awarded to Surgeon Gilbert Francis Syms, R.N.

The PRESIDENT reported that he had been invited by the provisional committee appointed at the Conference on District Nursing in London held at the offices of the Local Government Board on June 12th, 1914, to nominate a representative to serve on a central council for London, which was now being established, and that he had accordingly nominated Sir Alfred Pearce Gould, K.C.V.O., who had consented to serve.

THE SERVICES.

TO CIVILIAN SURGEONS.

SURGEONS for temporary service in the Royal Navy are required; pay 22*s*. a day, plus allowances and equipment allowance for uniform; age not to exceed 40 years. Application should be made to the Director-General, Medical Department of the Navy, Admiralty, S.W.

The War Office notifies that civilian medical practitioners desiring to serve at home or abroad as surgeons with the army should communicate with the Secretary, War Office. Gentlemen accepted for such services will be granted the temporary rank of Lieutenant in the army, and must fulfil the following conditions: 1. They must be registered practitioners. 2. They must engage for a period of 12 calendar months or until their services are no longer required, whichever shall first happen. 3. Their pay to be 24*s*. a day, inclusive of all money allowances, except travelling allowances and expenses when travelling on duty. 4. They will be granted free passages to and from any country abroad to which they may be sent. 5. They must devote their whole time to military service. 6. They will receive a gratuity of £60 at the termination of their engagement if they have rendered satisfactory service. 7. They should not exceed 35 years of age, but in exceptional circumstances gentlemen between 35 and 40 may be accepted. 8. They must furnish: (*a*) A medical certificate showing that they are in good health, of sound constitution, and fit for hard physical work. (*b*) A statement of any previous service with the army. (*c*) A recommendation as to character from a person of position and responsibility. (*d*) A certificate as to age.

ARMY MEDICAL SERVICE.

Colonel Richard H. S. Sawyer, on completion of four years in his rank, is placed on the half-pay list (dated August 3rd, 1914).

Lieutenant-Colonel James Meek, from the Royal Army Medical Corps, to be Colonel, vice R. H. S. Sawyer (dated August 3rd, 1914).

ROYAL ARMY MEDICAL CORPS.

Major Claude B. Martin to be Lieutenant-Colonel and to be Supernumerary (dated August 3rd, 1914). Major Charles B. Lawson to be Lieutenant-Colonel (dated August 3rd, 1914.)

INDIAN MEDICAL SERVICE.

The King has approved the promotion of Captain Norman Walter Mackworth to be Major (dated Jan. 26th, 1914).

The King has also approved the retirement of the undermentioned: Lieutenant-Colonel Joseph George Hulbert (dated July 27th, 1914); Major William Elmsley Scott-Moncrieff (dated July 28th, 1914).

COLONIAL MEDICAL SERVICES.

West African Medical Staff.—The death is announced of Dr. E. J. H. Garstin, medical officer, Nigeria. Dr. J. W. S. Macfie, medical officer, Nigeria, has been transferred to the Gold Coast. Mr. A. C. Parsons, medical officer, Nigeria, has been promoted to be a Sanitary Officer, Nigeria; and Mr. W. J. D. Inness, medical officer, Nigeria, to be a Sanitary Officer, Nigeria. The following gentlemen have been selected for appointment to the staff: Dr. T. P. Fraser, Nigeria; Mr. A. S. Burgess, Gold Coast; Mr. E. Gibson, Nigeria; Mr. C. J. B. Pasley, Nigeria; Dr. T. Ryan, Gambia; Dr. C. Mackey, Nigeria; and Mr. J. M. O'Connell, Sierra Leone.

Other Colonies and Protectorates.—Dr. A. L. Fitzmaurice has been selected for appointment as a Medical Officer, Somaliland; Dr. E. H. Black has been selected for appointment as a Medical Officer in the Federated Malay States; and Dr. P. W. H. Burne has been selected for appointment as a Medical Officer in the Straits Settlements.

TERRITORIAL FORCE.

Royal Army Medical Corps.

Notts and Derby Mounted Brigade Field Ambulance: Herbert Smith Wallace to be Lieutenant (dated June 27th, 1914).

2nd Lowland Field Ambulance: Lieutenant Dugald H. MacPhail to be Captain (dated July 4th, 1914).

3rd Northumbrian Field Ambulance: Captain Stanley Fox Linton, from the List of Officers Attached to Units other than Medical Units, to be Captain (dated May 26th, 1914).

ROYAL ARMY MEDICAL CORPS EXAMINATIONS.

The following is a list of successful candidates for commissions in the Royal Army Medical Corps at the competition held in London last month, for which 22 candidates entered:—

	Marks.
*D. C. G. Ballingall, B.A., M.B. Cantab., M.R.C.S., L.R.C.P., St. Bartholomew's Hospital	560
H. G. Winter, M.R.C.S., L.R.C.P., London Hospital	552
*J. M. Evatt, B.A. Cantab., M.R.C.S., L.R.C.P., University College Hospital	546
*F. G. Thatcher, M.B., Ch.B., Edinburgh University	538
*W. P. Mulligan, M.B., Ch.B., Aberdeen University	534
*G. P. Selby, B.A., M.B., B.Ch. Oxon., M.R.C.S., L.R.C.P., St. Bartholomew's Hospital	525
J. G. Butt, B.A., M.B., B.Ch., B.A.O., Dublin University ...	507
*N. Cantlie, M.B., Ch.B. Aberd., Charing Cross Hospital ...	497
*E. A. P. Brook, M.R.C.S., L.R C.P., St. Bartholomew's Hospital	489
*P. T. Priestley, M.B., Ch.B., M.R.C.S., L.R.C.P., University of Birmingham	479
E. Phillips, M.B., B.Ch. Durh., M.R.C.S., L.R.C.P., London Hospital	476
S. D. Reid, M.B., Ch.B., University of Edinburgh	453
P. J. Ryan, B.A., M.B., Ch.B., B.A.O., National University, Ireland	441
B. J. L. Fayle, B.A. Cantab., M.R.C S., L.R.C.P., Bristol University	437
E. A. Sutton, M.R C.S., L.R.C.P., Charing Cross Hospital ...	402

* These gentlemen, being in possession of certificates obtained in the Officers Training Corps, were awarded service marks under paragraph 71 of the Regulations for the Officers Training Corps.

INDIAN MEDICAL SERVICE EXAMINATION.

The competitive examination for commissions in His Majesty's Indian Medical Service was held on July 27th, 28th, 29th, 30th, 31st, and August 1st, when 28 candidates presented themselves. Sixteen candidates qualified and one failed to qualify. The following is a list of the candidates who secured the 13 vacancies which were to be competed for, with their medical schools, qualifications, and marks obtained out of an aggregate of 5100.

	Marks.
John Walter Pigeon, B.C. Cantab., L.R.C.P., M.R.C.S., St. Bartholomew's Hospital	3304
Maurice Lawrence Treston, L.R.C.P., M.R.C.S., London Hospital	3173
Peter Vieyra, M.B., Ch.B. Edin., Edinburgh University ...	3141
Bhamini Mohon Mitra, L.R.C.P.. M.R.C.S., Middlesex Hospital	3101
Philip Savage, L.R.C.P., M.R.C.S., Guy's Hospital and Durham University	3071
Thomas Bond Paul, L.M.S.S.A., Middlesex Hospital	3049
Amir Chand, M.B., B.S. Punjab, Lahore Medical College ...	3046
Robert Lee, M.B., Ch.B. Liverp.. Liverpool University ...	3040
Nilkanth Shiram Jatar, L M.S. Bombay, L.R.C.P., M.R.C.S., Grant Medical College, Bombay, and University College Hospital	2972
Tadepally Sankara Sastry, M.B., C.M. Madras, Madras University and Middlesex Hospital	2891
Jamal-ud-din, M.B., Ch.B. Edin., Edinburgh University ...	2810
Ferozeshah Bapuji Chenoy, L.M.S. Bombay, L.R.C.P., M.R.C.S., Bombay University and London Hospital... ...	2709
Sadanala Bashiam Venugopal, L M.S. Madras, L.R.C.P., M.R.C.S., Madras University and Guy's Hospital	2697

THE BACTERIOLOGICAL DEPARTMENT OF INDIA.

The cadre of the Bacteriological Department of India has been recently increased. Amongst Indian Medical Service officers who have been confirmed in the department is Captain H. W. Acton, the director of the Pasteur Institute at Kasauli, and also amongst those who have been appointed *sub pro tem.* the name of Captain R. Knowles, assistant director of the above institute.

BOMBAY HOSPITAL STAFFS.

The Surgeon-General with the Government of Bombay has recommended that the present consulting staffs of the Bombay hospitals should continue for the next year. These staffs are:—*St. George's Hospital.*—Consulting Physicians: Lieutenant-Colonel A. Street, Dr. J. W. Field, Dr. S. A. Powell. Consulting Surgeon: Lieutenant-Colonel A. Street, I.M.S. Consulting Obstetric Physician: Lieutenant-Colonel S. C. Evans, I.M.S. Consulting Ophthalmic Surgeon: Major G. McPherson, I.M.S. Consulting Bacteriologist: Major W. Glen Liston, I.M.S. Consulting Alienist: Lieutenant-Colonel S. H. Burnett, I.M.S. *J. J. and Allied Hospitals.*—Consulting Physician: Lieutenant-Colonel T. Jackson, I.M.S. Consulting Surgeon: Lieutenant-Colonel J. G. Hojel, I.M.S. Consulting Obstetric Physician: Dr. Annette M. Benson. Consulting Bacteriologist: Major W. Glen Liston, I.M.S. Consulting Alienist: Lieutenant-Colonel S. H. Burnett, I.M.S. *Goculdas Tejpal Hospital.*—Consulting Physicians: Lieutenant-Colonel T. Jackson, I.M.S., and Dr. R. Row. Consulting Surgeon: Lieutenant-Colonel A. Street, I.M.S. Consulting Obstetric Physician: Lieutenant-Colonel S. C. Evans, I.M.S. Consulting Ophthalmic Surgeon: Major G. McPherson, I.M.S. Consulting Bacteriologists: Major W. Glen Liston, I.M.S., and Dr. N. F. Surveyor. Consulting Alienist: Lieutenant-Colonel S. H. Burnett, I.M.S. *Cama and Allbless Hospitals.*—Consulting Physician: Lieutenant-Colonel L. F. Childe, I.M.S. Consulting Surgeons: Lieutenant-Colonel A. Street, I.M.S., and Dr. H. M. Masina. Consulting Obstetric Physicians: Lieutenant-Colonel S. C. Evans, I.M.S., and Sir Temulji Bhikaji Nariman. Consulting Ophthalmic Surgeon: Major G. McPherson, I.M.S. Consulting Bacteriologist: Major W. Glen Liston, I.M.S. Consulting Alienist: Lieutenant-Colonel S. H. Burnett, I.M.S.

An Order in Council prohibits the exportation of surgical bandages and dressings from the United Kingdom.

The Royal Colleges of Physicians and Surgeons have awarded the Sir Gilbert Blane naval medal to Surgeon Gilbert Francis Syms, R.N., who obtained the highest aggregate marks at the examination for promotion to the rank of staff-surgeon at the Medical School of the Royal Naval College, Greenwich.

ST. THOMAS'S HOSPITAL MEDICAL SCHOOL.—The following scholarships have been awarded:—Science scholarship, £150, Cyril James Thomas, St. Thomas's Hospital Medical School. Science scholarship, £60, divided between Stanley Roy Tattersall and Frank Alfred Gaydon, both of St. Thomas's Hospital. Arts scholarships won by B. O. Dewes and R. N. Legge Symes (first year's tuition fees, £15 15*s.*).

Home and Foreign Notes.

(FROM OUR OWN CORRESPONDENTS.)

VIENNA.

Nervous Disturbances of Respiration.

IN a paper read before the Society of Neurology in Vienna, Dr. Hofbauer explained the results of investigations which he had made into the nature of respiratory disturbances due to nervous conditions. He said that they appeared in organic, autotoxic, or functional alterations of the nervous system. Cerebral hæmorrhage caused only a difference between the right side and the left side as regards respiratory movement of the thorax, but Cheyne-Stokes breathing rarely. Respiratory stoppages sometimes occurred as symptoms of alteration of the posterior parts of the cerebral cortex. Abscess of the brain often produced retardation of the respiration; tumour, cyst, or abscess of the cerebellum often caused Cheyne-Stokes symptoms and stoppage of respiration, whilst circulation continued to go on. Meningitis might cause irregularities of breathing, Cheyne-Stokes and Biot's type of respiration, and increase of frequency. Tabes dorsalis caused lengthening of inspiration due to paralysis of the abductors of the glottis. Paralysis of the peripheral nerves caused disturbances of the muscular movements of the chest wall, whilst inflammation of the sensory nerves produced lengthening and shallowing of the type of breathing owing to the pain. The autotoxic disturbances were seen in Graves's disease, and in uræmia, diabetes, and uncompensated heart troubles. The character of breathing approached the Cheyne-Stokes type, but acute dilatation of the lungs was also often noted. In hysterical conditions or in attacks of fear the respiration might become either very quick and shallow or very deep and noisy. Interesting experiments on the action of the depressor nerve were made by Dr. H. Hofbauer on animals whose abdominal aorta had been severed after having been previously clamped with Dr. Velden's deep clamp. The experiments showed that rapid loss of blood caused sudden stoppage of the breathing, followed by very deep single respirations, just after irritation of the depressor nerve.

A Dangerous Admixture with Commercial Digitalis Leaves.

A few days ago several druggists in this city noticed that some infusion of digitalis became turbid when mixed with alcohol of 5 per cent. strength in accordance with the official regulations. The University laboratories were at once communicated with, and a careful examination showed that the digitalis leaves were mixed with fragments of other leaves, which under the microscope were recognised as those of hyoscyamus. They were present in the proportion of about one half, and formed, of course, a most dangerous addition. The wholesale dealer from whom the retailers had obtained their supply was soon found, and all the samples sold since the time when the admixture was supposed to have taken place were seized. It is interesting to note that no reports of any harmful action of the mixed infusion in question have been received. At least mydriatic manifestations might have been noticed, apart from any cardiac effect, for in the usual dose of 1 gramme of digitalis leaves, as it is prescribed here, at least 1 milligramme (1/60th of a grain) of hyoscyamin, which is much stronger than atropin, must have been present.

Restriction of the Number of First-year Medical Students.

On account of the overcrowding in the medical faculty of the University of Vienna the Ministry of Education has issued an order regulating the matriculation of first-year students of medicine. In accordance with this order, a reference to which was made in one of my previous letters, only 400 students will be admitted to the first term of matriculation during the academical year 1914–15. Students born in Vienna or in Austrian countries not possessing a medical school have a prior claim to admission. First-year students from the other Austrian countries and foreigners will be allowed to matriculate only in the event of there being fewer than 400 applicants belonging to the first-mentioned category. Students of other faculties will no longer be allowed to work in the anatomical dissecting-rooms, as they have frequently done in the past.

July 30th.

PARIS.

The War.

THE shadow of impending war is over all things, but the temper of the people is satisfactory. The crowds rushing back from the Continent to England or America have complicated our domestic troubles.

Proposed New Hospitals for Paris.

With the constant increase of the population of Paris, notwithstanding the recent construction of hospitals, the number of sick poor that can be accommodated is entirely inadequate. Since the expulsion of the religious orders there remain for such accommodation hardly any other than the hospitals of the official administration. M. Mesureur, Director-General of the Assistance Publique at Paris, is asking the municipal council of Paris to construct in the north-west district of Paris two hospitals—one municipal, the other departmental—each to contain from 800 to 1000 beds. The expense of the first hospital would be covered by the sale of the grounds of the Hôpital Beaujon, which, in consequence of the development of the city, is now situated in a district where land has attained a very high value. The cost of the second hospital would be met by a future loan of the Department of the Seine. The Conseil de Surveillance of the Assistance Publique on Nov. 20th last gave its adhesion to this programme; the Conseil Municipal, when called on to give effect to it, will undoubtedly approve the plan. But already some municipal councillors think that these two hospitals will be insufficient, especially as one of them will only replace an already existing hospital. The departmental hospital, which is the only new creation, will not suffice for the increased needs of the huge amalgamated district, comprising the towns of Neuilly, Levallois, Clichy, St. Ouen, Asnières, Bois-Colombes, Courbevoie, and Nanterre, which are now dependent on the Hôpital Beaujon, and for those of Pantin, Aubervilliers, and St. Denis, which at present rely on the Hôpital Lariboisière. There is, in fact, a population of 500,000, mostly of the indigent sort, to be served by the new hospital with its 1000 beds. The Conseil Municipal contemplates a similar operation for the southern district. This district contains a hospital constructed 30 years ago as a provisional affair during a cholera epidemic. It was built in two and a half months and of light material. Since then the needs of the district have become so great that this hospital has continued in existence, and receives a large number of sick. It is absolutely necessary now to reconstruct and enlarge it. It is further necessary for the communes of the southern section of the Department of the Seine to do what is about to be done for the northern part, and to construct a departmental hospital for its sick, so as to unload the city hospitals, the Necker, the Boucicaut, the Cochin, the Pitié, the St. Antoine, and the Tenon, which are largely occupied by patients from these communes.

Familiarity in the Hospital Services.

M. Mesureur, Director-General of the Assistance Publique, has addressed a circular to the directors of the various hospitals calling on them to forbid the *tutoiement* too frequently practised by medical students and by nurses. He considers that this behaviour, though inspired doubtless by a fraternal and well-meaning friendliness, may grate upon certain patients who, in their unhappy condition, are entitled to have their feelings respected.

The Cerebro-spinal Fluid in General Paralysis.

M. Marinesco and M. J. Minea have made some interesting attempts at transmission to rabbits of the virulent properties of the cerebro-spinal fluid freshly taken from subjects of general paralysis. These observers have obtained positive results in a case of juvenile general paralysis, which is said to be the first example of its kind. The experiments conducted on many series of rabbits, which have shown all the characteristic accidents after inoculation with this cerebro-spinal fluid, not only demonstrate the existence of living spirilla in the cerebro-spinal fluid of paralytics and their virulence, but also prove that even juvenile general paralysis, due to hereditary lues, constitutes an active spirillosis.

The Avoidance of Premature Burial.

Dr. Icard, of Marseilles, has already devised many procedures to establish the fact of death and to obviate premature burial. The best known, which has been honoured by the Académie de Médecine, consists in the hypodermic injection of fluorescine, which induces a yellow colouration of the eyeball in a few minutes if the person is not really dead. Another and more recent method consists in pinching forcibly with a forcipressure forceps a thin piece of the skin, such as the thickness of the lips or the cheek. An absolute parchment-like effect is thus produced, which, in the case of the dead, persists indefinitely, but as long as life remains the tissues recover little by little their thickness and suppleness. This simple experiment may be made with any kind of pincers; but Professor Vincent has shown to the academy, on behalf of Dr. Lucien Graux, a special forceps called a "thanatograph," which makes the process more simple and more easily demonstrated. It might be thought desirable that a death certificate should be required to be accompanied always by one of these tests, which add but little to the trouble, while affording a very useful corroboration.

August 4th.

UNITED STATES OF AMERICA.

Bubonic Plague in New Orleans.

Two cases of bubonic plague have been reported from New Orleans. The news raised no great interest; in fact, hardly any. It is an odd paradox that people are moved so little nowadays by the things that once concerned them so deeply. Formerly a single case of plague would have touched the public imagination even to panic. At present they appear apathetic, at least indifferent, about the "black death." Certainly, as regards such a formidable disease, this lack of interest is creditable to the medical profession. The public take for granted that the disease will be controlled, and they are right. In this case the plague, which probably came from some far-distant point, has had no other outbreak. The most popularly interesting question arising from the plague's presence is the necessity of destroying its carrier, the rat. In this outcry even the State is taking a part.

Low Death-rate in New York.

Whatever be the explanation, the death-rate in New York has fallen to the lowest point ever known—an annual rate of 10·84 per 1000. During the same period last year—that is, during the week ended July 4th—the death-rate was 40·82. The cool weather this year stands out among other circumstances as the cause of the lower rate. It is true that New York is one of the healthiest cities; it is equally true that disease does not seem to leave its heaviest mark on large collections of men.

Health of Country and City Children Contrasted.

A committee of the American Medical Association has issued a report contrasting the health of country and city children. The gist of it is that city children are the healthier. The committee's point is that they found incomparably more disease—of the heart, lungs, and nervous system—among the offspring of what are called the rural population. The city as a health resort is an extreme form of putting the case, but in a general way the committee's report appeared to condemn the conditions of country life. If a judgment may be drawn from the discussion which followed, the committee won more surprise than sympathy for their ambiguous proposition. It may be true physiologically, but it seemed very disputable for that side of rural existence where clearer air and fresher food tend towards health.

The Duty of Physicians under the New Drug Law.

Experience will severely test the new legislation as to the use and possession of narcotics. There has been very little so far in the nature of effective restraint on this class of offenders. A few wretched creatures have been hunted out and punished, but the real evil continues. The law has set moralists by the ears, tactlessly submitted the physician to a great deal of embarrassment of questionable propriety, and drawn upon innocent people an explosion of virtuous wrath from touters who have a sinister interest in a certain class of hospitals and sanatoriums. It is nothing more than a trap to get clients for speculative managers of these asylums. This view is quite natural, as magistrates have the power to send to asylums people who habitually use narcotics. The habit of taking any of the forbidden drugs, such as chloral, cocaine, heroine, codeine, is made an offence. The physician who takes them may be punished by suspension or by withdrawal of his licence, and he may be sent to a prison, styled, according by a delicate euphemism, a State hospital. A widely spread circular states that these unhappy patients should be kept for a year under some form of treatment; but this treatment may be as harmful as the original habit. Belladonna has a great vogue in certain hospitals. One habit is thus superadded to, or substituted for, another. The inevitable question in these inquiries is, When is the "delator" and blackmailer going to begin? Fortunately, we have not got very far with this. In one instance a manufacturer was arrested by the Federal authorities for sending heroin by post from one State to another. The prosecution has slumbered—no new thing under American political methods. Clearly the physician must be careful, and great prudence must be exercised to leave no ground for suspicion. Doctors coming from England and the Continent to the United States should know that the law demands that prescriptions shall be written on the doctor's own prescription blanks bearing their name, address, office hours, and telephone number, and the name of the patient must be given. Above everything, the physician should not have in his keeping an unlawful quantity of morphine, cocain, heroin, or their salts; for, ridiculous as it seems, the mere possession of these drugs is an offence. When the physician wants a lawful quantity he must write the order on an official paper supplied by the State Department of Health. These papers are recorded and kept for reference. The Department of Health of New York city has arrived at a scheme, framed more or less on the sanitary code, which seems likely to be adopted, for assisting the physician. This allows the physician to get drugs that he needs on his own prescription, but it absolutely prohibits the sale to laymen. Prosecutions under the law have been few. A notorious doctor, a former gaol-bird, but employed by the city and appointed under the Civil Service, has been sent to prison for a year for selling cocain to patients in one of the city hospitals. A little girl has been arrested by detectives, who watched her buy heroin for her mother. The chemist who sold it was also arrested, and all are likely to be convicted. On the other hand, it appears from the testimony of the former Warden of Sing Sing prison and the comments of the daily newspapers that a set of rascals, backed by politicians, have organised on a gigantic scale the smuggling of whisky and drugs into the gaols for the use of criminals. From the profit there is in this traffic for politicians it seems hardly possible to clear the prisons of this element.

July 24th.

SOUTH AFRICA.

The South African Medical School.

A REPORT recently submitted to Parliament shows that the total number of students attending the medical courses at the South Africa College during 1913 was 45, and that the school has made on the whole good progress during the year. Formerly two factors militated against the second year of study. The first was that the examination of the Cape University (first B.Sc. in agriculture) which most British universities accept as exempting from further examination in chemistry, botany, zoology, and physics, was, admittedly, a more severe examination than that obtained elsewhere. Representations, however, were made to the University in regard to the standard of the examination, and certain alterations have been made since to modify the examination. During the past year intimation was received from the General Medical Council of the United Kingdom that in future the Cape matriculation would be accepted only provided 50 per cent. were obtained in English, history, Latin, mathematics, and an optional language. On representations from the College, the Cape University, and the local branch of the British Medical Association, however, the General Medical Council decided that recognition would be granted to a pass in the Cape University matriculation examination, which includes English, history, Latin, mathematics, and at option Greek or a modern language such as Dutch, French, or German. The second factor was that the medical course is not a detached course, but has to be dovetailed into other courses, reducing its effectiveness. This apparently has not as yet been remedied. The following facilities and concessions are now granted to the College by British Universities and other bodies—viz., the General Medical Council recognises the South African College as an institution approved for the study of medicine and dentistry. The first year's course in medicine, as well as the first professional examination conducted by the Cape University, is accepted by the Universities of Edinburgh, Aberdeen, Bristol, and Manchester, by the Conjoint Board of England, and by Trinity College, Dublin. The classes in the first year are accepted by the Universities of Glasgow, Aberdeen, and Durham. The second year's course is recognised by the Universities of Aberdeen and Edinburgh and by the Conjoint Board of England. The preliminary scientific course in dentistry (first year) is recognised by the Royal College of Surgeons of England, as well as by that of Edinburgh and by the Edinburgh Dental School. The course of public health, for which no students apparently have as yet entered, is recognised by the four conjoint Boards of Physicians and Surgeons of Edinburgh, Glasgow, England, and Ireland. The position may be summarised thus: The first year course and examination are now recognised at most of the important centres in Britain. Negotiations are still proceeding to place the second year course on the same footing, as well as to get recognition for a pass in anatomy and physiology in the B.A. science examination, or at a second M.B. examination which the Cape University is willing to institute. Apparently it is hoped that in the near future this will be accomplished, and with this in view the College is considering the further extension of the medical school, so as to include a third year, but this would of course involve questions of accommodation, equipment, hospital facilities, and increase of staff. This would seem to be altogether a premature step as things are in South Africa to-day, and the College authorities would be well advised for the present to concentrate on obtaining facilities for the first and second year's courses only. With a view of securing representation of medical opinion throughout the Union it was decided to extend the constitution of the Medical Committee so as to comprise the Presidents or chief officials of the Colonial Medical Council (Cape), the Cape of Good Hope (Western) Branch of the British Medical Association, the Transvaal Medical Council, the Orange Free State Medical Council, the Natal Medical Council, the Cape Dental Association, the Medical Board of the Somerset Hospital, the Senate of the South African College, with three medical members to be appointed yearly by the Senate, and the professors of medical subjects and the lecturer in hygiene, South African College. The new constitution seems to have proved satisfactory.

Nursing Bursaries.

At a recent meeting of the Colonial Medical Council (Cape) a letter was read from the provincial secretary, stating that the provincial administration had decided to grant two bursaries in connexion with each half-yearly examination for trained nurses held by the Council, to be available only for candidates from the State-aided hospitals of the province. The provincial secretary instructs that a list of the nurses successful at each half-yearly examination for trained nurses, setting forth in regard to each successful candidate the hospital at which trained and the order of merit, should be forwarded to his office soon after each examination in order that the bursaries may be awarded. The bursaries are valued at £20 and £10 respectively, and "will be granted unconditionally, but the administration hopes that the money will be applied by the holders towards furthering their professional education, more particularly for the purpose of undergoing a maternity training."

July 10th.

INDIA.

The Wells of Bombay and Malaria.

AT a recent meeting of the Bombay corporation it was moved that the present policy of having the wells in the city closed hermetically be temporarily suspended, and that a trap door be allowed in the case of such wells as are not contaminated with sewage, until such time as the city is provided with a constant supply of water and with water cisterns in the different wards of the city. Dr. Master, in supporting this proposition, said that he had carefully considered the question, not on religious but on utilitarian grounds. The wells had been closed in connexion with the antimalarial campaign. He did not think it possible to stamp out malaria even if all the wells of the city were closed. The city water-supply was intermittent, and the poor who had not sufficient storage vessels suffered great hardship. People who complained of not being able to get water on the top floors were asked to use pumps, but there were instances where water could not be obtained even with the use of pumps. Referring to a complaint by the chairman of the improvement trust, that in one of the chawls they were unable to get sufficient water, so that the chawl remained vacant a long time, he said that in the last two months there had been several stoppages in the water-supply owing to bursts in the main and fires, and he had seen people running with buckets from Dhobie Talao to the fort to get their supply of water. He therefore gave notice of the motion. Mosquitoes were allowed to breed in the city in open drains, the tanks in mosques and temples, and the storm-water reservoir, so he was opposed to hermetically closing the wells in the city. The Commissioner characterised Dr. Master's motion as a retrograde step, that would be justifiable only if wells with trap doors were found to be harmless. There was nothing more harmful than trap doors. The most eminent authority on sanitation who was present at the Madras Sanitary Conference, Dr. C. A. Bentley, strongly advocated the closing of wells. The storm-water drain and reservoirs were far from residential quarters. He pointed out that since the wells were closed the mortality from malaria had decreased. The water in almost all the wells in the city was not potable. A few years ago there might have been weight in this proposition, but now that measures to improve the supply of water were nearly complete there was no justification for it. This discussion illustrates the difficulties in carrying out antimalarial measures in India.

Mortality from Wild Animals and Snakes.

The total mortality amongst human beings in the Bombay Presidency due to wild animals was 20 during the past year, as against a total of 29 for the previous year. The mortality caused by snakebite rose from 1140 to 1406. The total human mortality from wild animals and snakes thus shows a net increase of 257 over the preceding year's figures. The renewal of rewards for the destruction of snakes in the Ratnagiri district, where the mortality from snake-bite is alarmingly high, is under consideration. According to the Government resolution just issued, the total number of cattle killed by wild animals and snakes decreased from 10,322 to 9898, whilst the number of wild animals and snakes destroyed during the year rose from 3027 to 3471 and from 27,038 to 27,336 respectively. The aggregate amount of rewards paid for the destruction of wild animals and venomous snakes rose from Rs.4914 to Rs.5157.

Toxic Properties of Cinchonine.

In the report of the Chemical Examiner of Bengal there is an interesting account of some unexpected results from an experiment with cinchonine. What appeared to be two phials of sulphate of quinine obtained from a shopkeeper at Karimganj were sent to the Chemical Examiner for analysis. Both samples proved to be cinchonine, neither containing any quinine. To test the physiological action of the drug 5 grains each were administered to two adult cats, one of which retained the drug, the other vomited it. The one that retained it developed within 15 minutes frequent severe convulsive symptoms closely resembling those of strychnine poisoning, and died in a few hours. The other cat developed marked twitching of the muscles, became utterly prostrated, and died in 12 hours. As cinchonine was not known to possess such toxic properties it was thought these samples might be contaminated with some unknown poison. A sample of known purity was therefore obtained and 3 grains were administered to a cat. This animal also developed severe convulsions, twitchings of the muscles, and extreme prostration, but ultimately recovered. The Chemical Examiner points out that in the Extra Pharmacopœia the dose for an adult human being is given as 1 to 10 grains, and it is also stated that it should be used in larger doses than quinine to produce the desired result. As cats are found to be about equally susceptible with human beings to the action of poisonous drugs this case is of interest, for cinchonine is not infrequently used as an antiperiodic and febrifuge.

Diabetes in Madras.

The Government of Madras is undertaking an investigation into diabetes, and it is understood that Dr. Patterson has been appointed to investigate the subject. Dr. Patterson holds a studentship under the Beit trustees for the study of this disease.

Hospital Nurses' Good Work.

Praise for the good work done by the nurses i an outstanding feature of the annual report of the Jamsetjee Jijibhoy Hospital Nursing Association while the devotion of the All Saints' Sisters in the work of supervising the nursing of this grea hospital is warmly acknowledged. During the past year 11 nurses passed the first examination, 17 the final examination, and 14 the midwifery examination. During the year Indian nurses were sent up for the full general course for the first time, and five out of six passed the junior examination. It is hoped that the institution will soon have its own convalescent home. Money is in hand for building purposes and a piece of land near the sea and not too far from Bombay may be given to the committee. During the year the private nursing staff nursed 415 cases, an increase of 115 cases on the previous year.

July 9th.

Obituary.

JAMES D. FARQUHARSON, M.B., C.M. GLASG.

THE death of Dr. James D. Farquharson, of Westgate-road, Newcastle-upon-Tyne, one of the best-known practitioners in the city in many spheres of activity, occurred recently. Born at Perth in 1858, he was educated at Perth Academy, and started at an early age in Glasgow by becoming attached to the Glasgow *Evening News*. In a short time he rose to be sporting editor of this paper, and during the whole period of his undergraduate days he retained that position. He graduated in medicine in 1884 at the University of Glasgow with distinction, and immediately started practice as assistant to the late Dr. Lynn, of Newcastle-on-Tyne, on whose decease soon afterwards he succeeded to the practice, which by his ability and personal qualities he rapidly increased. It was only his habits of concentration and power of doing with the minimum of rest that enabled him to carry on for nearly 30 years one of the largest practices in the city. It would be difficult to mention anything that Dr. Farquharson did not take an interest in. He was for some years a member of the council of the city of his adoption. He did not often take part in debate, but whenever he spoke his remarks convinced one that he had brought to bear upon the question under discussion careful and intelligent study. For over 20 years he was a member of the Newcastle Royal Garrison Artillery, and retired with the rank of surgeon-major, and within the last two months received a belated V.D. He enjoyed great popularity with officers and men. He was one of the founders of the Pen and Palette Club, twice President; many times president of the Burns Club; an active member of the Glasgow University Club; past-president of the West-End Medical Society; and joint secretary of the Northumberland and Durham Medical Society. He was also a member of the executive of the Newcastle division of the British Medical Association.

A successful practitioner, an energetic public man, and a good sportman, Farquharson's death leaves a great gap in the life of Newcastle.

Correspondence.

"Audi alteram partem."

ORAL SEPSIS AND THE EXTRACTION OF TEETH.

To the Editor of THE LANCET.

SIR,—May I put my finger at once on the weak spot of Sir James Goodhart's protest in THE LANCET of July 25th against "wholesale" extraction of teeth? It lies in the sentence, "I examined his mouth very carefully, and his teeth were to my eye perfect." It is exactly the failure on the part both of doctor and dentist to realise on the one hand the amount of dental sepsis, and on the other the extent to which the tissues resent its presence—i.e., the local signs of inflammation and destruction or hypertrophy of tissue—that leads to the present conflict of opinion. Sir James Goodhart asserts that "pyorrhœa" is a painful malady; pain is an uncertain symptom, often absent through the whole course of the disease. His description of "pyorrhœa" as deep-seated, pent-up suppuration in the alveoli does not apply to the great majority of cases met with in dental practice. Pent-up pus means acute abscess and pain, but the usual case of "pyorrhœa" presents at the necks of the teeth freely discharging sinuses; if a sinus become blocked, then there is the acute state Sir James Goodhart refers to. He also speaks of "trivial ulceration of the edges of the gums." The ulceration of "pyorrhœa" is not found patent on the edges of the gums; it is hidden on the tooth-ward side of the gum-flaps that help to form the pockets of "pyorrhœa." Perhaps I may be excused for suggesting that Sir James Goodhart's protest may not be so well founded as at first sight it seems.

Till lately teeth were preserved at all costs, and perhaps the swing of the pendulum has in some individual cases gone too far. I suspect we could all relate cases in which we have saved the patient's teeth after "wholesale" extraction has been advised, but my daily experience convinces me that in the gross more good is done by "wholesale" extraction of teeth that are suspect than by conservation. The more intimate knowledge that X rays give us, increasing clinical experience, and the study of large numbers of skulls stored in our museums so far from tending to contract my horizon of the evils and extent of dental sepsis tend continually to widen it. I may add that at the museum of the International Dental Congress now being held in London, August 3rd–8th, at the Imperial College of Science and Technology, South Kensington, I am exhibiting a large series of jaws showing the bone changes of "pyorrhœa."

I am, Sir, yours faithfully,
J. G. TURNER.
Wimpole-street, W., July 31st, 1914.

To the Editor of THE LANCET.

SIR,—It is very clear from Sir James Goodhart's letter that he has not devoted the special attention necessary to make himself acquainted with the methods of diagnosing periodontal disease. Had he taken the trouble to wrap a wisp of cotton-wool round a very thin bristle and gently passed this round each tooth in the case he mentions he would probably have found "pockets" round the condemned teeth. Then had he warmed the bristle after withdrawing it from these pockets and held it under his nose he might possibly have had some glimmering as to the justice of the condemnation. Further, had he had a skiagraph taken to show the condition of the alveolar processes he would probably have seen areas of rarefying osteitis and possibly even abscess cavities round some of the roots. There are many such cases where there is no pus at the gum margin and very little gingivitis present—cases where unless a proper, careful, and scientific examination is made the mouths may easily be passed as being healthy, and they are passed daily by great numbers of practitioners who have not devoted enough attention to this subject. Yet it is these same cases which so frequently give rise to grave joint lesions and many other maladies too numerous to mention here. This type of pyorrhœa, by the way, *never* gives rise to pain.

Further, if Sir James Goodhart would attend the out-patient department of one of the numerous hospitals in London where these cases are diagnosed and thoroughly treated, he would be astonished at the innumerable instances of very marked improvement in the general health of the patients who have had "perfectly sound teeth" (according to the general public) removed.

I am, Sir, yours faithfully,
FRANK ST. J. STEADMAN,
Assistant Dental Surgeon to the Royal Dental Hospital.
Queen Anne-street, W., July 27th, 1914.

To the Editor of THE LANCET.

SIR,—I desire as a dental surgeon to a London hospital to support Sir James F. Goodhart's contention in THE LANCET of July 25th, that "a harmful practice has come into vogue that needs to be held up." Extreme methods are usually wrong. I have to see a great many dirty mouths in which there is no deep-seated suppuration, and my experience confirms the view that scaling of the teeth and the use of the toothbrush twice daily with a corrected dietary yield quite marvellous results. The term pyorrhœa has been used too often loosely to cover all conditions of oral sepsis.

A condition of asepsis is impossible in any mouth, therefore the term is relative. Teeth that are firm enough to be used in mastication should be saved. It is quite easy to remove all the teeth, but not so easy to restore the function of mastication, with an abundant flow of saliva and all the values of trituration of foods in the mouth.

I shall not trespass on your space fully to argue the matter out; I quote my thirty years' experience only in support of my opinion.

I am, Sir, yours faithfully,
GEORGE THOMSON,
Honorary Dental Surgeon to the Royal Hospital for Diseases of the Chest, &c.
Harley-street, W., July 28th, 1914.

THE WORKING OF THE NATIONAL INSURANCE ACT IN GREAT YARMOUTH.

To the Editor of THE LANCET.

SIR,—Dr. R. H. Shaw, who I understand was one of your Special Correspondent's informants, has come forward to carroborate presumably his own statements. They do not agree with what other informants who are on the panel said, and as there is no hope for peace in Yarmouth medical circles until a clear understanding is arrived at I beg you to insert a full statement from me.

With regard to allocation, Dr. Shaw was present at one, and only one, meeting of the panel doctors

(Jan. 28th, 1913), held at the request of our tuberculosis officer, who wished to explain the tuberculosis regulations to the members of the panel. The doctors not on the panel were invited out of courtesy. They were our guests in the offices of the Insurance Committee. Information gained thus should not have been handed over to the press. With this violation of custom Dr. Shaw has combined gross inaccuracy. The minute to which he alludes runs thus:—

> A rough estimate of cards signed was taken, and it was resolved to point out to the Insurance Committee that steps should be taken to deal with those outstanding.

Allocation was neither mentioned nor intended. We wanted people to exercise their own choice of doctors before they were ill. As a matter of fact, this minute does not appear to have been communicated to the Insurance Committee at all.

Nothing was done about allocation by us until we had to answer a letter from the Insurance Committee two months later. Then we dealt with methods only and made no pressure. Dr. Shaw does not refer to another minute I read on Jan. 28th as follows:—

> Dr. —— is requested to write to Dr. —— suggesting that those medical men not on the panel should join the Statutory Committee,

which showed that we still desired their presence and coöperation. When in March a general meeting of all the doctors was officially called to form a Local Medical Committee, the members of the panel combined to put a non-panel doctor in the chair, again showing a kindly disposition.

With regard to the hospital, my speech complained of was made just after the receipt of a letter from the secretary of the Great Yarmouth Hospital by the Insurance Committee containing the following resolution:—

> At a meeting of the committee of the above institution (Great Yarmouth Hospital) held on Monday afternoon last, the following resolution which had been passed by the honorary medical staff was adopted by the committee: That while in no way going back on their previous resolutions your honorary medical staff will continue to take in selected cases amongst insured persons for operation which are not necessarily cases of urgent necessity until March 1st, in order that the Local Insurance Committee may have time to make the necessary arrangements for providing that attention which the Act imposes upon them.

I need not trouble you with comment. Wiser counsels prevailed, of course, and no serious alterations were made in local hospital management.

In conclusion, I must allude to the account your Special Commissioner gave of a special meeting of the Medical Benefit Subcommittee of the Insurance Committee which all the medical practitioners in Great Yarmouth were invited to attend in January, 1913. The chairman opened by expressly stating that whatever was then said should necessarily be regarded as said in committee or *in camera*. We now have a version of an important particular in the public press and a copy of THE LANCET'S article sent to one of the local papers. Who has been the informant? I cannot criticise this version, but I can say that from inquiries made since there is no doubt that if a panel had not been formed promptly we should have had an influx of an efficient medical staff for attending all insured persons and others besides. Those who joined to form the panel at the last moment contend that they saved the livelihoods of nearly all the local medical practitioners, and that the pledg was dead when they took this step.

I am, Sir, yours faithfully,

Great Yarmouth, August 4th, 1914. HENRY BLAKE.

THE TECHNIQUE OF ARTIFICIAL PNEUMOTHORAX.

To the Editor of THE LANCET.

SIR,—May I express regret for the tardy appea ance, owing to my absence on holiday, of this repl to Dr. W. Parry Morgan's letter. Dr. Morgan i generous enough to accept my assurance that I ca "pass a blunt needle through the parietal pleur so that its orifice rests in the pleural cavity withou injuring the visceral pleura," but, neverthele maintains that I "cannot obtain ample manomete oscillations without causing the lung to leak an thereby supply the necessary gas to communicat movements to the manometer." It is clear fro what follows that Dr. Morgan accepts the oscill tions of which I gave examples in my letter a "ample"; this being so he must either hold that leakage occurs from the unwounded lung, or els his polite acceptance of my ability to spare th visceral pleura was a mere figure of speech an represents in reality the exact opposite of what h thinks. I should have taken no offence if he ha said what he meant more baldly and trust tha none will be taken by him if my own criticism are and have been less veiled under a cloak politeness.

On purely theoretical grounds Dr. Morga rejects the possibility that so small a quantity gas as is contained in 6 cm. of the manomete tubing can be sufficient, after entering the pleur space, to supply a respiratory oscillation of 4 c extent in one arm of the manometer. I confess fail to see the difficulty in this, and would sti oppose theory with fact and retort that it must b sufficient, since in practice this fluctuation occu under conditions where leakage from the lung ca really not be held to occur. If a positive pressu could be obtained on coughing, as Dr. Morga suspects, then I would certainly admit that th pleural cavity contained additional air; but I a not aware that a true positive pressure is cause by cough in these cases, and all that I obtai myself is a mere momentary upward oscillation the fluid produced by the sharp momentary impuls This swing suffices to give extra assurance of th whereabouts of the needle's point, but is a muc smaller phenomenon than that caused by cough i cases where gas has been already introduced, an where, no doubt, a true positive pressure is pr duced.

The valve action of the lung, which Dr. Morga accuses me of overlooking, is not a phenomeno which concerns those who use a side opening a well as a terminal one to their needle. That i the absence of this side opening it can occur an cause symptoms of blockage of the needle I shoul be perfectly ready to admit, and also that some o Dr. Morgan's cases were very probably of thi nature if he uses a needle with a single termina opening.

That the presence of pleural adhesions necessari implies the absence of a potential pleural space, a Dr. Morgan asserts, I should certainly be incline to deny from the results of personal experience. have treated a case where small quantities of ga could be put in, at negative pressures at first, ove nany parts of the lung, but where no efficient leural space could be opened out.

Dr. Morgan remarks that experience with his pparatus would cause me to remove the objections have expressed, and I do not deny that some pparent difficulties would probably disappear after rolonged use of the method. But, unfortunately, am still in the hopeless condition of considering he single manometer an extremely satisfactory nstrument, and of differing entirely with Dr. Iorgan's condemnation of it. My attitude towards is two manometers reminds Dr. Morgan of the ne-time rejection of the single manometer by the ioneer of pneumothorax therapy, but I think a ittle consideration will soon show him how very uperficial is the resemblance between the two ases.

With regard to my fear that the oscillations ould be damped down by inertia of the fluid in he reservoirs of his manometer, I am glad to have is assurance that this is groundless, for there eem to me great points of convenience in this rrangement of movable reservoirs. He then emarks: "Curiously enough, the only advantage hich Dr. Riviere sees—that is the advantage egarding the range of working pressure—really oes not exist." I should like to ask how he econciles this with his statement in the original aper that "we may record a pressure of 35 cm. by aising, −35 cm. by lowering, the manometer reseroirs." The arrangement of the apparatus certainly eems to bear out the correctness of this, his riginal assertion.

Finally, Dr. Morgan's preference for oxygen ecause if it passes into the tissues it is more uickly absorbed and produces less surgical mphysema serves to illustrate very well the bjection, if not the danger, of the continuous flow f gas which Dr. Morgan favours. With the estabished method no such leakage of gas need occur, nd I cannot help feeling that its avoidance is a ain on the side of safety and convenience alike.

With apologies for the length of this communicaion,

I am, Sir, yours faithfully,

Inverness, August 2nd, 1914. CLIVE RIVIERE.

TUBERCULIN "ENTHUSIASTS."

To the Editor of THE LANCET.

SIR,—I think the letter in your issue of July 25th y Dr. Charles Miller a most important one. As he vrites the time for discussing this subject is passed. Chis so-called remedy has received a long and careful rial, and the consensus of opinion formed by uniassed observers is that no benefit arises from the njection of tuberculin and that even when used vith the greatest care harmful results are liable to nsue.

The insurance authorities would do a great ublic service if they officially condemned this lrug, for such action would go far to banish its ise from all paths of practice. Surely it is time he true position of tuberculin in the treatment of ulmonary tuberculosis should become a matter of ommon knowledge.

I am, Sir, yours faithfully,

London, July 28th, 1914. THOS. GLOVER LYON.

To the Editor of THE LANCET.

SIR,—I was glad to find in THE LANCET of ugust 1st that Dr. J. E. Squire is in agreement with my remarks. Dr. Squire, however, does not see how any blame can be put upon the Insurance Committee, as they do not direct the form of treatment. In the case which I quoted I do blame the Insurance Committee. If they had not instructed my patient to attend at a certain dispensary she would never have been treated with tuberculin. Official interference between doctor and patient was the initial step towards tuberculin treatment.

With regard to the treatment itself and the method of administration in this case, I prefer not to express my opinion, as I do not think it necessary to do so.—I am, Sir, yours faithfully,

Queen Anne-street, W., July 31st, 1914. CHARLES MILLER.

THE USE OF LIQUID PARAFFIN IN ENTERIC FEVER.

To the Editor of THE LANCET.

SIR,—Professor Ll. P. Phillips's advocacy in THE LANCET of paraffin in typhoid fever raises a larger question than whether we should administer it for constipation in one massive daily dose or in repeated divided doses for the sake of its lubricant and protective action—namely, what it can do for the septic diarrhœa in the worse type of cases. The "local treatment of the bowel," which must remain our first consideration until the vaccine treatment may have completely suppressed the disease, was not thought of, at any rate not practically attempted, before Sir William Jenner's indictment of milk as a factor in the septic intestinal fermentation of typhoid fever. We owe the clinical proof of the correctness of that view to Prideaux Selby's historical paper[1] on the successful substitution of whey for milk in the dietary. That paper deserves full credit for having led to the wider practical conclusion, subsequently identified under the name of the "empty bowel treatment" or "traitement à vide,"[2] that from the beginning to the end of our treatment the all-essential indication is the constant sanitation or sanitary toilet of the bowel. For the "evacuant" purpose in that treatment paraffin was used as an adjuvant in frequent fractional doses; and subsequently it was found that, as an additional security, a small daily dose of castor oil was useful and well borne. That treatment also aimed at "disinfection" by the free administration of animal charcoal (originally used in France by Bouchard in typhoid) for the sake of its remarkable absorptive and neutralising power over alkaloids, as, for instance, after massive lethal doses of strychnine or morphine. But the first and indispensable indication was to systematically and completely remove the septic culture from the lower ileum; leaving the upper bowel and the stomach in a much better condition for their all-essential alimentary function of absorbing abundant supplies of varied and nourishing foods (either purely crystalloid, such as sugar and salts; subcrystalloid and diffusible, such as the maltine group, yolk of egg, and whey itself; or leaving practically no residue, such as cream, predigested foods, meat and fruit jellies, &c., and particularly white of egg added in high dilutions to the whey to replace its coagulable casein).

That proposition has, I believe, never been fully discussed. It still faces us, on the foundation, which presumably is not disputed, that the multiple spread of the ulcerations (accounting for the clinical "relapses"), up the ileum and down into the colon, is secondary, and most probably due to direct local fæcal auto-infection (if not so, then clearly the result of a concentrated bacillæmia derived from an unchecked intestinal culture). The only safety for the patient, for his nurses, and for the community lies in systematic aseptic sanitation of the lower ileum; or, at the least, in its complete freedom from all septic fæcal retention. That practical therapeutical conclusion has acquired in recent years additional urgency from the discovery of the carrier evil. The remedy for that evil is not yet forthcoming, except conceivably from systematic individual vaccination. Ought it not really to consist in trying to forestall the carrier's ulceration, and in limiting his subsequent bacillary impregnation by assiduous intestinal cleansing from the first and throughout his period of treatment, followed, as it should be, by regulation in all cases of typhoid by "test cultures" of the blood and fæces at the termination of convalescence?

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[1] THE LANCET, Nov. 2nd, 1901, p. 1182.
[2] Brit. Med. Jour., vol. ii., p. 1507, 1905.

To these elementary principles I might venture to add a statement that no thorough scheme of treatment can afford to merely test the blood in suspected cases and watch the pulse and temperature for a week for a diagnosis. The patient we suspect claims immediate treatment, seeing that the eventual extension, possibly even the actual development, of his dreaded ulceration is in some measure a facultative quantity, according to the efficiency of the earliest treatment. That immediate treatment should be one that cannot possibly do any harm, and which will for a certainty do him good, even if he should be starting an appendicitis, or possibly a pneumonia. The latest practical addition I was able to make towards that more thorough treatment was never published because the opportunities for its further clinical study have failed me, and because the only available cases which I treated without any definite success were not in their earliest stage. It consists in a prophylactic treatment of the inflammation of the valve which precedes its ulceration by the most active means available (short of surgery in the shape of appendicostomy and of transvalvular catheterisation for antiseptic or paraffin irrigations which I suggested as possibly applicable in the earliest typhoid stage, but have practised only for colitis)—namely, by local blood depletion; by leeching the cutaneous venous system over the right iliac fossa, or, more rationally for anatomical reasons, the hæmorrhoidal venous system itself directly at the anus. That suggestion, for what it is worth, I now venture to submit to clinicians for suitable trial at the early stage for which alone it is intended.

I am, Sir, yours faithfully,

Upper Brook-street, W., August 1st, 1914. William Ewart.

THE LATE PROFESSOR HUGO KRONECKER.

To the Editor of The Lancet.

Sir,—In the sympathetic account of Professor Kronecker, appearing in your issue of July 25th, p. 270, it is stated that he died in Berne. This was not the case. He was returning from a meeting of the German Physiological Society, where he had been giving a demonstration, and died suddenly at Nauheim of syncope. I should like to add my testimony to that of your correspondent to the extraordinary kindness and consideration of Kronecker to all foreigners and strangers who came his way.

I am, Sir, yours faithfully,

Arosa, July 28th, 1914. Egbert Morland.

ISOLATION OF DIPHTHERIA CASES.

To the Editor of The Lancet.

Sir,—Dr. A. T. Nankivell's reply to my letter is obviously quite in official order, but it is just this official order which I desire to upset. There are, as he asserts, many instances of forgetfulness and neglect and ignorance in my letter, but there is no necessity to combat such assertions. The question for decision is very simple. Has our system o isolation of patients suffering from scarlet fever and diphtheria succeeded in controlling these diseases or has it really resulted in increasing the number of sufferers? It is well known to epidemiologists, we read, that in certain years or group o years such diseases may be epidemic, and I have also read of a thirty-year swell, a seasonal ripple and a five-yearly wave.

Surely, if we could arrive at the natural history of the diseases we might then have some prospec of dealing with them effectively. The very large number of annual notifications appears to demonstrate that mere isolation is insufficient and tha institutional treatment may be not such an unmixed blessing as is officially believed. Both diseases are the result of a local infection, and i appears to me that if the members of the medica profession were to look upon all forms of sor throat as essentially of the infective type a grea step forward would be made in the control of both scarlet fever and diphtheria.

At the present moment the fact remains tha 130,026 notifications of scarlet fever and 50,85 of diphtheria were made in 1913. When the capita account and the annual expenditure in connexio with isolation is considered such a result is one t be deplored, and letters such as that of D Nankivell only demonstrate official complacenc which is destructive of progress.

I am, Sir, yours faithfully,

Hatfield, August 2nd, 1914. Lovell Drage.

ELECTRICITY AND NEURASTHENIA.

To the Editor of The Lancet.

Sir,—There is a tendency once more to u static electricity for the relief of various neurose and psycho-neuroses, but very little work seems t have been done on the relation between either (1) quantity, or (2) tension of electricity and th relief of ailments of this class. What we wa to know is, how far increased size or number plates in the static machine will benefit ou patients, and how far one should rely on stron applications given at short sittings or on sma doses given over a longer time. My own exper ence in this matter has been instructive. Con mencing with a small Wimshurst machine (eigh 8-inch glass plates), for several years I obtaine excellent results in the treatment of neurastheni and psychasthenia. Recently, deciding to have larger machine, I had one constructed consistin of eight 24-inch plates and well adapted to giv much greater tension and quantity, although th latter is, of course, in all ordinary static wor extremely small. However, it has not appeare that my results have been any better with th larger machine, and on inquiry I cannot find tha others working with still larger apparatus hav obtained better results than I have always bee able to secure with the small Wimshurst. I a fully aware that it may be contended that as mo my treatment is based on a combined psycho-ectrical method, in which the principle of direct iggestion is brought to bear as strongly as ossible, I am not in a position to judge as to the ficacy of different sized static machines. But, as matter of fact, I am referring now directly to the hysical efforts produced and fairly attributable to ie electricity, having in mind cases which have een treated by both small and large machines ithout direct suggestion.

I admit that we are entirely in the dark as to the ito-suggestive effect that the use of electrical pparatus brings about in the case of many ensitive patients. Has it not indeed been said iat some 90 per cent. of electro-therapeutic ires are due to suggestion? An over-estimate o doubt.

The points that could profitably be discussed ist now are, (1) how far increased therapeutic enefit is obtained in the case of nervous patients y increasing the size of static machines above an -inch plate apparatus; (2) how far the patient ibconsciously makes use of the machinery as a eg on which to hang his self-suggestions and xpectation of cure; and (3) to what extent tension nd quantity respectively influence the results btained.

Whilst my experience has shown me that without oubt successes can be scored by a combined psycho-lectrical method that cannot be obtained with the se of either static electricity or suggestion used lone, the better definition of the part played by ie physical agent, which unquestionably has an nmediate effect on circulation and general tone, iust be of obvious assistance to all practical eurologists.—I am, Sir, yours faithfully,

London, W., July 24th, 1914. EDWIN L. ASH.

A NEW TEST FOR MORPHINE.

To the Editor of THE LANCET.

SIR,—Since the publication of the new reaction or morphine, an annotation on which appeared in HE LANCET for July 25th, I find that one of a omewhat similar character has recently been escribed by M. Denigés using copper sulphate nstead of metallic copper. It is referred to in Le Guide pour les Manipulations de Chimie iologique" (Paris, 1910), by Bertrand and Thomas. s I was unable to find any mention of it in any nglish or German works on the subject I con-luded that the whole of the reaction was new—n error I haste to correct.

I am, Sir, yours faithfully,
T. H. OLIVER.

The Cancer Research Laboratory, University of
Manchester, July 28th, 1914.

THE SURGEON'S POLE.

To the Editor of THE LANCET.

SIR,—I solicit the aid of your readers in solving a roblem which has hitherto failed to arrest the ttention of the many who have been interested in he origin and use of the barber's pole. In several ooks, Brand's "Popular Antiquities" and Hone's Every-day Book" amongst others, there is the tatement that Lord Thurlow in the House of Peers, n July 17th, 1797, said that "By a statute still in orce the barbers and surgeons were each to use a ole." The barbers were to have theirs "blue and white striped, with no other appendage; but the urgeon's, which was the same in other respects, was likewise to have a gallipot and a red rag, to denote the particular nature of their vocation."[1]

In THE LANCET of August 12th, 1905, p. 498, "Lucus" suggested that the red lamp might be a derivative of the red rag, and the same thought may have entered the heads of others who may have given any attention to the origin of old trade signs, but the point I want light upon is *this statute*, mentioned by Lord Thurlow. Where is it to be found, seen, or verified? In the "Annals of the Barbers" there is an allusion to a surgeon's sign. On Oct. 2nd, 1724, a quack named Thomas Cooke was examined; "the Court directed him to take down his surgeons sign." Was this sign the pole which Lord Thurlow's statute referred to? Perhaps some antiquarian-minded reader may afford me the information which I have failed to reach.

I am, Sir, yours faithfully,
Carlisle, July 28th, 1914. H. A. LEDIARD.

THE INTRAMEATAL TREATMENT FOR SUPPURATIVE OTITIS.

To the Editor of THE LANCET.

SIR,—It is a good many years since I was able, through your courtesy, to advocate this treatment for the first time in THE LANCET. There was at the time over-enthusiasm for the radical mastoid operation, and in my opposition to that operation as a routine treatment for otorrhœa I was in a minority of one at the Otological Congress of 1899. The one statement of my opponents that I found difficult to meet was that the good results shown by my method of treatment would be temporary. Knowing how often cases relapsed after the radical operation had been performed, I could only "wait and see."

I have recently seen four of my old cases, now perfectly well, on whom I performed otectomy more than six years ago; one of them ten years ago. These cases had all been under treatment before they came to me, and one, a lady aged 68, had been advised to have the radical operation performed. Two of them had cholesteatoma, a condition that the books say calls for the radical operation. However, by means of my antrum syringe (already described in THE LANCET) I was able to wash away the masses, and there has been no recurrence for some considerable time. One of these cases has almost perfect hearing. These cases are only selected in so far as they happen to have recalled themselves to my recollection. Irrigation with or without otectomy will rarely fail to disinfect the aural cavities if carried out as I advise. Re-infection is possible, no doubt, after any treatment, but I know that very few of my cases have had any serious return of trouble. It is some years since I have found it necessary to perform the radical mastoid operation, but I have seen a good many cases in which this operation has been performed with unsatisfactory results. I am, Sir, yours faithfully,

Harley-street, W., July 31st, 1914. F. FAULDER WHITE.

CLARET AS A BEVERAGE.

To the Editor of THE LANCET.

SIR,—I have read with pleasure the very able annotation under this heading in THE LANCET of July 25th. Such views, advanced by so competent an authority, cannot but do good in making better known the qualities of this most wholesome and palatable wine. I venture to remark, however, that although Bordeaux is the home of claret, other wine-producing countries can and do grow wines which have the same characteristics.

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[1] Hone's "Every-day Book," vol. i., p. 1269.

Italy, which last year had the largest wine production in the world, exports large quantities of excellent light red wines which can compete with the French clarets; many people prefer them. Of these wines the best known is Chianti, which is familiar, of course, to all visitors to Italy, and which in its characteristic wicker-covered flasks may be seen on the table at any good hotel or restaurant. These Italian wines are produced under the most perfect conditions, and analysis has shown them to be remarkably free from acidity, easily digested, and of low alcoholic strength. The high dietetic value of these wines and their very moderate price make them particularly suitable as an everyday beverage.

I am, Sir, yours faithfully,

London, July 28th, 1914. EGIDIO VITALI.

THE NATIONAL INSURANCE ACT.

DISTRIBUTION OF THE UNALLOTTED FUNDS IN LONDON.

THE London Insurance Committee has accepted an offer by the Insurance Commissioners to undertake responsibility for the distribution of the funds accumulated during 1913 in respect of insured persons who had not chosen a doctor. In a letter to the committee the Commissioners stated that though they still held to the opinion that the committee had no need to fear legal consequences in making a distribution in accordance with the Regulations, they sympathised with the fears of individual members of the committee. The Commissioners proposed to use for the purpose of distributing the unallotted funds moneys from the Exchequer grant voted by Parliament for the additional remuneration of the doctors, leaving the committee to pay, out of moneys credited to Approved Societies, that portion of the remuneration of practitioners which was not in dispute.

THE COST OF PRESCRIPTIONS.

Recent correspondence in the *Times* has raised points of interest with regard to the discounting rendered necessary by deficits in the drug funds of certain areas. With reference to the surcharging of medical men on the panels found after inquiry to have given prescriptions exceeding what is reasonably necessary for the adequate treatment of their patients, Mr. H. Wippell Gadd wrote: "This is not the same thing as surcharging the cost of any prescription above a certain average, and from my experience on a Joint Services Committee I can testify that the power of surcharging is only used as a last resort, and then only in a case of what may be called 'fancy prescribing,' which is generally the ordering of proprietary drugs which are sold at exorbitant rates." Another writer gave from the actual experience of an area in which the druggists' accounts had been discounted the following figures: Highest number of prescriptions per insured person, 12; highest average price per prescription, 1*s.* 2½*d.*; highest average cost per insured person, 9*s.* 10½*d.* No drug fund under present conditions could stand any considerable number of prescriptions amounting to nearly half a sovereign apiece, but it would not be impossible to provide for the extra cost in cases where a Medical Benefit Committee was satisfied that drugs of a costly character promised relief to the insured patient. It might also be possible to give the patient in all cases the option of using a costly drug if he were to be willing and able to pay for it. As one of the correspondents said, before any doctor can be surcharged it must be remembered that his professional colleagues will be a party thereto.

Medical News.

ROYAL COLLEGES OF PHYSICIANS OF LONDO AND SURGEONS OF ENGLAND.—At a meeting of the Comiti of the Royal College of Physicians and of the Council c the Royal College of Surgeons on July 30th, diplomas c L.R.C.P. and M.R.C.S. were respectively conferred upon 9 candidates who have passed the Final Examination i Medicine, Surgery, and Midwifery of the Conjoint Board and have complied with the by-laws. The following are th names and schools of the successful candidates:—

Wilfred Herbert Alderton and Christian Philip Sidney Allingham London Hospital; Carl Frederick Anthonisz, Ceylon Medica College and Middlesex Hospital; Arthur Laurence Anthony Cambridge University and Guy's Hospital; Arthur Beeny Appleton B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; William Daniel Arthur, St. Mary's Hospital; Joe Edwar Ashby, Charing Cross Hospital; Leonard Barron Baird, Mancheste University; Frederick Alexander Beattie, L.S.A. Lond., Guy' Hospital; Martin Wright Kidman Bird, B.A. Cantab., Cambridg University and St. Bartholomew's Hospital; Norman Briggs, University College Hospital; Ian Macdonald Brown, M A. Cantab. Cambridge University and London Hospital; Noel Hawley Michae Burke, King's College Hospital; Andrew John Chillingworth St. Bartholomew's Hospital; Ernest Robert Townley Clarkson M.A. Cantab., Cambridge University and St. Mary's Hospital Marcus Thomas Gonzalez Clegg, B.A. Cantab., Cambridge Universit and St. Bartholomew's Hospital; *John Robert Mitchell Collie Dalhousie University and University College Hospital; Barr Keyte Tenison Collins, M.A. Cantab., Cambridge and Birmingham Universities and Middlesex Hospital; Stephen Harold Cooke Melbourne University and London Hospital; David Lloyd Davies. Charing Cross Hospital; Duncan Constantine de Fonseka, L.M.S. Ceylon, Ceylon Medical College and London Hospital; John Baptist Gregory Dotto, St. Bartholomew's Hospital; George Ernest Elkington, M.B., Ch.B. Birmingham, Birmingham University; Humphrey Leonard George Foxell, University College Hospital; William Dawson Galloway, B.A. Cantab., Cambridge University and Guy's Hospital; Georg Arnold Gassmann, London Hospital; Egerton Gray, L.S.A. Lond., Cork and London Hospital; Evan Williams Griffith, University College, Cardiff, and University College Hospital; Bernard George Gutteridge, St. Thomas's Hospital; Alfred Risdon Hacker, Westminster Hospital; Owen Hairsine, Middlesex Hospital; Charles Stewart Parnell Hamilton, Durham University and Charing Cross Hospital; Arthur Herbert Harkness, Guy's Hospital; Arthur Henry Harty, M B., Queen's University, Kingston, Kingston and London Hospital; Horace William Hay, University College Hospital; Henry Sydney Colchester Hooper, London Hospital; George Barrowclough Horrocks, Manchester University; Alfred Morgan Hughes, L.D.S. Eng., Westminster Hospital; John Bowman Hunter, B.A. Cantab., Cambridge University and University College Hospital; Ronald Nelson Hunter, London Hospital; Byron Levick Hutchence, B.A. Cantab., Cambridge University and London Hospital; Rhys Trevor Jones, B.Sc. Wales, University College, Cardiff, and St. George's Hospital; Thomas Clatworthy Kidner, Middlesex Hospital; Straugman Davis Kilner, B.A. Cantab., Cambridge University and Middlesex Hospital; George Charles King, B.A. Cantab., Cambridge and Liverpool Universities; Constantine Lambrinudi, B.A. Cantab., Cambridge University and Guy's Hospital; Joseph Lloyd and Charles Eric Lowe, Westminster Hospital; Desmond Manns MacManus, Guy's Hospital; Frank Mahabir, M.D. New York, University of New York and London Hospital; *Refna Mallet, Royal Free Hospital; John Burnett Matthews, B.A. Cantab., Cambridge and Liverpool Universities; Joseph Leopold Meynell, L.M.S.S.A. London, London Hospital; John Daniel Milne, M.B. Toronto, Toronto University; Bhamini Mohon Mitra, Calcutta University and Middlesex Hospital; Frederick John Nattrass, M.B., B.S. Durh., Durham University; Duncan Westlake Pailthorpe, Charing Cross Hospital; Cyril Eaton Petley, Guy's Hospital; Kenneth Bernard Pinson, Birmingham University; David John Platts, King's College Hospital; D'Arcy Power, St. Bartholomew's Hospital; Arthur Bennet Preston, London Hospital; William Bentley Purchase, B.A. Cantab., Cambridge University and London Hospital; John Bromley Rawlins, St. Mary's Hospital; George Francis Rowcroft, St. Bartholomew's Hospital; Henry Christmas Samuel, Ceylon Medical College and Middlesex Hospital; Farid Henein Abdel Sayed, Cairo and St. Mary's Hospital; Frederick Gilbert Laughton Scott, B.A. Oxon., Oxford University and Guy's Hospital; Philip Dennis Scott, Guy's Hospital; Edward James Selby, Cambridge University and St. George's Hospital; Abdel Khalek Selim, Guy's Hospital; Jatindranath Sen, M.B. Calcutta, Calcutta and University College Hospital; Gerald Davenant Shann, King's College and St. George's Hospitals; William Hopper Shephard, B.A. Cantab., Cambridge University and Charing Cross Hospital; Alfred George Simmins, Guy's and Westminster Hospitals; Issachar Reuben Smith, M.B. Toronto, Toronto University and Middlesex Hospital; Kenneth Vickerman Smith, Charing Cross Hospital; George John Chase Smyth, Westminster Hospital; Leonard Colin Somervell, B.A. Cantab., Cambridge University and London Hospital; Frederick Lionel Spalding, Guy's Hospital; Clifford William Sparks, St. Thomas's Hospital; Charles John Stewart, M.D., C.M. McGill, McGill University and London Hospital; Gavin Stiell St. Thomas's Hospital; Evelyn Alexander Sutton, Charing Cross Hospital; Charles Hamblen Thomas, St. Bartholomew's Hospital; Thomas Ainsworth Townsend, B.A. Oxon., Oxford University and Guy's Hospital; David Christopher Leslie Vey, B.A. Cantab., Cambridge University and University College Hospital; Ernest Haines Walker, St. Thomas's

Hospital; John Frankland West, B.A. Oxon., Oxford University and St. Bartholomew's Hospital; Cecil Leonard Williams, St. Bartholomew's Hospital; Frederick Arnold Williamson, B.A. Cantab., Cambridge University and St. Mary's Hospital; John St. George Wilson, M.B., Ch.B. Liverp., Liverpool University; Frederick Butwell Winfield, Cambridge and Birmingham Universities; William Pridham Wippell, St. Bartholomew's Hospital; Thomas Mansergh Wood-Robinson, Middlesex Hospital; Montague Sydney Woolf, M.A., B.Sc. Birm., University College Hospital; and Ernest Jenner Wright, St. Mary's Hospital.

* The Diploma of M.R.C.S. was previously conferred on July 9th.

Diplomas in Public Health were also conferred conjointly by each College upon the following 39 candidates who have passed the requisite examinations :—

Estelle Irene Elgin Atkinson, M.B., Ch.B. Manch., Manchester University and University College; William Jacob Bannister, M.D., B.Ch., B.A.O. R.U.I., Dublin and King's College; Lalit Mohon Biswas, L.M.S. Calcutta, Calcutta and University College; Arthur Bloom, M.B., Ch.B. Edin., Edinburgh University and University College; Samuel Bradbury (Surgeon, R.N.), M.B., Ch.B. R.U.I., Royal University of Ireland, Haslar, and Greenwich; Hari Chand, L.M.S. Punjab, L.R.C.P., M.R.C.S., Punjab University and University College; Armando Dumas Child, M.B., Ch.B. Edin., and Robert Edward Collins, M.B., Ch.B. Edin., L.R.C.P., M.R.C.S., Edinburgh University and University College; Norman Edwin Dunkerton (Captain, R.A.M.C.), L.R.C.P., M.R.C.S., King's College and Royal Army Medical College; William Egan (Captain, R.A.M.C.), M.B., B.Ch., B.A.O. R.U.I., and Henry Horace Andrews Emerson (Captain, R.A.M.C.), M.B., B.Ch., B.A.O. Dubl., Dublin and Royal Army Medical College; James Erlank, M.B., Ch.B. Edin., Edinburgh University and University College; Kiranendu Ghosh, L.M.S. Calcutta, Calcutta and King's College; Saurenda Mohon Ghosh, L.M.S. Calcutta, L.R.C.P., M.R.C.S., Calcutta and University College; David Hughes Charles Given (Surgeon, R.N.), M.B., B.Ch. R.U.I., Royal University of Ireland, Haslar and Greenwich: John Griffiths, L.R.C.P., M.R.C.S., Cardiff and London Hospital; Sydney Harold Griffiths, L.R.C.P., M.R.C.S., Middlesex and University College; Frederick Duke Gwynne Howell (Captain, R.A.M.C.), L.R.C.P., M.R.C.S., St. Thomas's Hospital and Royal Army Medical College; William Wilson Jameson, M.D., B.S. Aberd., M.R.C.P., Aberdeen University and University College; Thomas Steven McIntosh, M.D., B.S. Edin., Edinburgh University and University College; William Henry McKinstry, M.B., C.M. Glasg., Glasgow University and Charing Cross Hospital; Hyacinth Bernard Wenceslaus Morgan, M.B., Ch.B. Glasg., Glasgow University and King's College; Bidhan Prosad Mozoomdar, L.M.S. Calcutta, Calcutta and King's College; Vincent Philip Norman (Captain, I.M.S.), L.M.S.S.A., Lond., London Hospital and University College; George Singleton Parkinson, (Captain, R.A.M.C.), L.R.C.P., M.R.C.S., Bristol University and Royal Army Medical College; Abraham Zadok Philips, M.D., Ch.B. Edin., Edinburgh University and King's College; Robert Bernard Price (Lieutenant, R.A.M C.), M.B., B.S. Lond., L.R.C.P., M.R.C.S., St. Bartholomew's Hospital and Royal Army Medical College; Khwaja Abdul Rahman M.B., Ch.B. Edin., Edinburgh University and University College; Rajendra Coomar Roy, L.M.S. Calcutta, Calcutta and King's College; Kaikhushroo Sorabjee Sethna, L.M.S. Bombay, and Jagannath Vishnu Shirgaokar, L.M.S. Bombay, L.R.C.P., M.R.C.S., Bombay University and University College; Frank Standish, M.B., B S. Lond., L.R.C.P., M.R.C.S., London Hospital; William David Henderson Stevenson (Captain, I.M.S), M.B., Ch.B. Glasg., Glasgow University and University College; Sachindra Nath Sur, M.B Calcutta, Calcutta and King's College; Alexander Lewis Urquhart (Lieutenant, R.A.M.C.), M.B., Ch.B. Edin., Edinburgh University and Royal Army Medical College; Francis William Waterworth, M.B., Ch B. Edin., Edinburgh and Leeds Universities; John Sutton Webster, M.B, Ch.B. Manch., Manchester University and King's College; James Ingram Pirie Wilson, M.D., B.S. Aberd., Aberdeen University and University College; and William Bamford Winston, M.B., B.S. Lond., L.R.C.P., M.R.C.S., St. Thomas's Hospital and University College.

ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW AND ROYAL COLLEGES OF PHYSICIANS AND SURGEONS OF EDINBURGH.—The recent examinations of the Royal College of Physicians of Edinburgh, Royal College of Surgeons of Edinburgh, and Royal Faculty of Physicians and Surgeons of Glasgow, held in Glasgow, were concluded on July 25th. The following candidates passed the First Professional Examination :—

William Hutcheson Duff, Glasgow; Thomas Lloyd Edwards, North Wales; Robert Leslie Goodall, Glasgow; John Hughes, North Wales; and Archibald Paterson Robb, Glasgow.

The following candidates passed the Second Professional Examination :—

William Campbell Borrie, Birnam; Norman Stewart Bruce, Glasgow; John Thomas Dier, Wexford; John Vaughan Griffith, Upholland, Lancs.; Lloyd William Hughes, North Wales; John Gray M'Kendrick Macaulay, South Uist; Joseph William Morris (with distinction), North Wales; Duncan Reid Nicol, Banchory; Reginald Joseph Patchett, Bolton; and Robert Pollok, Dumbarton.

The following candidates passed the Third Professional Examination :—

Gordon Beveridge, Glasgow; James Theodore Brady, Belfast; Andrew Gaston, County Antrim; Arthur Leslie Giblin, Tasmania; George Mclsen Harley, Glasgow; John Park Mathie, Staffs.; Charles Read (with distinction), Glasgow; Purushottam Mohaniroj Saptarshi, India; and George Thomson, Glasgow.

The following candidates passed the Final Examination and were admitted L.R.C.P.E., L.R.C.S.E., and L.R.F.P.S.G. :—

Laurence Fraser, Shetland; Richard Bridge Lilly, Tynemouth; George Loudon Neil, Lesmahagow; Rona Lockhart, Nitshill; Sengarapillai Ponniah, Ceylon; Andrew Crawford, Glasgow; John William Cowie, Tillicoultry; John Gilchrist, Glasgow; George Frederick Walker, Southport; John Rennie Corrie Gordon, Whiteinch; Andrew Wilson Cochrane, Glasgow; Abraham Isaac Clarke, Belfast; Babu Singh Thakur, India; Cyril Armand Bernard, Liverpool; Cyril Gray, County Durham; and David Winthrop Woodruff, Glasgow.

UNIVERSITY OF LONDON.—At the Second Examination for Medical Degrees, Part II., held recently, the following candidates were successful :—

Girdhar Clement Agarwala, London Hospital; Frank Macdonald Allchin, Westminster Hospital: Ruth Balfour, London (Royal Free Hospital) School of Medicine for Women; Charles Hunter Donaldson Banks, St. Bartholomew's Hospital; John Anthony Birrell, University College, Cardiff; Alethea Josephine Bolton, University of Birmingham; Guy William John Bousfield, St. Thomas's Hospital; Leslie James Forman Bull, St. Bartholomew's Hospital; Phillip Caro Leslie Carrier, King's College and Charing Cross Hospital; Hester Mary Church, London (Royal Free Hospital) School of Medicine for Women; Percy Selwyn Clarke and Philip Nield Cook, St. Bartholomew's Hospital; Cyril John Chesterfield Cooke, University College; Gunaratnam Franklin Cooke, St. Bartholomew's Hospital; Dorothy Trevor Daintree, London (Royal Free Hospital) School of Medicine for Women; Robert Cecil Davenport, St. Bartholomew's Hospital; Peter Gerald Stevenson Davis, St. Thomas's Hospital; *†¶Leonard Snowden Debenham, Guy's Hospital; James Daniel Dyson, Middlesex Hospital; Thomas Stenner Evans, University College, Cardiff; Marjorie Ellen Franklin, London (Royal Free Hospital) School of Medicine for Women; William Bashall Gabriel, Middlesex Hospital; Iris Harding, London (Royal Free Hospital) School of Medicine for Women; †Arnold Guy Harsant, London Hospital; Frank Keith Hayman, University of Bristol; Nathan Norris Haysom, St. Bartholomew's Hospital; Graham William Heckels, Guy's Hospital; †William Andrew Hewitson, University of Durham; Frederick George Edward Hill, University of Sheffield; Edward Arthur Holmes, King's College; James Wynn Hyatt, London Hospital; †Jack Joffe, Guy's Hospital; Thomas John-Thomas, King's College; Michael Harry Kirkpatrick Kane, University College; Victor John Frederick Lack, London Hospital; Naunton Morgan Lewis and Rhys Thomas Lewis, University College, Cardiff; Edward Eric Lightwood, King's College and Westminster Hospital; Marguerite Frances Jane Lowenfeld, London (Royal Free Hospital) School of Medicine for Women; Philip Sydney Marshall, University College; Maurice William Holt Miles, St. Thomas's Hospital; Marie Mathilde Alice Moralt, London (Royal Free Hospital) School of Medicine for Women; †Arthur Morford, St. Bartholomew's Hospital; John James Murphy and Sinnethamby Muttiah, London Hospital; Noel Olivier and Margaret Stuart Palmer, London (Royal Free Hospital) School of Medicine for Women; Victor J. E. C. del S. Perez y Marzan, University College; Bertram Henzell Pidcock, St. Bartholomew's Hospital; Thomas Dawson Pratt, University of Leeds; John Alexander Pridham, St. Bartholomew's Hospital; Walter Murad Abdul Rahman, Paul Rigauld Riggall, and Gabriel Francis Rodrigues, University College; William Richard Rowlands, University of Liverpool; Trevor Cecil Russell, St. Mary's Hospital; Steuart Noy Scott, King's College and Charing Cross Hospital; William Reith John Scroggie, University College; Nirendra Mohan Sen-Gupta, Mandell Shimberg, and Robert Gordon Simpson, London Hospital; William Steadman, University College; Ellen Sylk, London (Royal Free Hospital) School of Medicine for Women; Kenneth Robert Traill and Martin Baird Moore Tweed, Guy's Hospital; Rustam Navroji Vakil, University College; Samuel Vidot, Guy's Hospital; Phillis Emily Webb and Lottie Weihermann, London (Royal Free Hospital) School of Medicine for Women; †Oscar Williams, University College, Cardiff; †Graham Selby Wilson, Charing Cross Hospital; and Campbell Young, University College.

* Distinguished in Anatomy. † Distinguished in Physiology.
¶ Distinguished in Pharmacology,

The Academic Council have approved the following scheme of advanced lectures and advanced practical work in physiology for the session 1914–15 :—University of London. (1) 1st term : Mr. J. A. Gardner, eight lectures, the Respiratory Exchange and Metabolism of Fresh Water Fish. (2) 2nd term : Dr. H. MacLean, eight lectures, the Lipoids, their Chemical Nature, Isolation, Distribution, and Physiological Significance. (3) 3rd term : Dr. F. L. Golla, eight lectures, Reflex Action. University College. (4) 1st term : Dr. A. J. Page, eight lectures, Fridays, 5 P.M., Chlorophyll and Hæmoglobin. (5) 2nd term : Page May Memorial Lectures, Fridays, 5 P.M. King's College. (6) 2nd term : Dr. O. Rosenheim, four lectures, Mondays, 4.30 P.M., starting Feb. 1st, 1915, Glucosides and Galactosides from the Biochemical Point of View. (7) 3rd term : Professor T. G. Brodie, F.R.S., four lectures, June, 1915, on Mondays and Wednesdays, at 4.30 P.M., Sensory Innervation of the Viscera. Guy's Hospital. (8) 2nd term : Dr. Pembrey and Dr. Ryffel, eight lectures, Thursdays, 4.30 P.M., Metabolism in Infancy. (9) 3rd term : Dr. C. J. Douglas, four lectures, the Blood as an Internal Medium. London (Royal Free Hospital) School of Medicine for Women. (10) 1st term : Dr. Winifred Cullis, four lectures, Thursdays, 5 P.M., Physiology of the Heart. Advanced practical work for B.Sc. honours examination :—University College. (11) 2nd term : Professor Bayliss, Physical Chemistry in Relation to Physiology. St. Bartholomew's Hospital. (12) 2nd term : Dr. Edkins, Electro-Physiology. Guy's Hospital. (13) 1st term : Dr. Pembrey, Respiratory Exchange ; Dr. Hertz, Investigation of Movement of Alimentary Canal by the X Rays. King's College. (14) 3rd term : Professor Halliburton and Dr. Rosenheim, Chemistry of Urine. Bedford College. (15) 3rd term : Dr. Edkins, Advanced Practical Histology. Courses numbered (1), (2), (3), (4), and (8) are recognised as advanced lectures which a candidate at the B.Sc. honours examination may name for part of his practical examination.

London School of Tropical Medicine.—The following were the successful candidates at the examination held at the end of the forty-fifth session (May–July, 1914) :—

A. C. Munro (Captain I.M.S.), M.B. Glasg. (Duncan and Lalcaca medals), C. Bonne, M.B. Amsterdam, J. M. Stenhouse, M.B., B.C. Cantab., J. S. Webster, M.B., Ch.B. Vict. (Colonial Service) (all with distinction); G. W. Maconachie (Captain I.M.S.), M.B. Aberd., W. M. Shepherd (Colonial Service), M.B., Ch.B. Edin., W. M. Strong, M.B., B.C. Cantab., M.R.C.S. Eng., L.R.C.P. Lond., J. C. Watt (Colonial Service), M.B., Ch.B. Glasg., B. H. Wedd, M.D. Lond., D.P.H., H G. Waters, M.R.C.S. Eng., L.R.C.P. Lond., Miss O. N. Walker, M.B., B.S. Durh., J. Baeza, M.B., Ch.B. Edin (Colonial Service), A. C. Anderson (Captain I.M.S.), M.R.C.S. Eng., L.R.C.P. Lond., N. S. Deane (Colonial Service), L.R.C.P. & S. Irel., L. S. Holmes, State Diploma, Bengal, A. G McPhedran, M.B., B.H. Toronto, J. V. Shirgaokar, M.R.C.S. Eng., L.R.C.P., L.M. & S., C. Sivasithamparam (Colonial Service), L.R.C.P. & S. Edin., L.F.P. & S. Glasg., R. K. Mitter (Lieutenant-Colonel I.M.S.), L.R.C.P. & S. Edin., M.B. Calcutta, C. H. Barlow, M.D. Chicago, R. B. Jackson, M.B. Dub., I. A. Rahman, M.R.C.S. Eng., L.R.C.P., W. J. Dixon, M.R.C.S. Eng., L.R.C.P., M.B. Madras, C. K. Attlee (Colonial Service) M.R.C.S. Eng., L.R.C.P., S. Elias (Cairo Medical School), K. B. Dastur, L.M.S. Bombay, D.P.H. Dub., and A. G. Fletcher, M.D. Chicago.

Society of Apothecaries of London.—At examinations held recently the following candidates were successful :—

Surgery.—J. C. P. Bayley (Sections I. and II.), Manchester ; C. D. Day (Section II.), St. Bartholomew's Hospital ; and G. B. Holroyde (Sections I. and II.), London Hospital.

Medicine.—L. B. Clarke (Section II.), Cambridge and St. Mary's Hospital ; and G. W. Maw (Section II.), University College Hospital.

Forensic Medicine.—C. D. Day, St. Bartholomew's Hospital ; and A. Glen, Glasgow and Sheffield.

Midwifery.—A. Glen, Glasgow and Sheffield ; S. B. King, St. Mary's Hospital ; N. W. Rawlings, Manchester ; and E. M. Townsend, Middlesex Hospital.

The diploma of the Society was granted to the following candidate, entitling him to practise medicine, surgery, and midwifery : G. B. Holroyde.

West End Hospital for Diseases of the Nervous System, Paralysis and Epilepsy. — Lord Hindlip has been appointed chairman of the hospital in succession to Mr. Leonard Brassey, M.P., who has resigned. Mr. Brassey will retain a seat on the hospital committee and has made a most generous proposal in respect of the rebuilding of the hospital.

Tuberculosis Hospital Opened at Eastbourne.—The last link in the chain of sanatoria advance was completed at Eastbourne on July 28th, when Dr. Arthur Newsholme, chief medical officer to the Local Government Board, opened the new tuberculosis hospital at the Sussex seaside resort. The hospital occupies a good position on the Southdowns, but under the shelter of the hills. It has 24 beds, but only 20 can be received—10 of each sex—as four wards have to be kept with single beds. In the course of a speech Dr. Newsholme said he was entirely in accord with those who attached importance to housing as a means of diminishing tuberculosis. It was, however, too often forgotten that an essential point in housing was to arrange for separating the sick from the healthy. In the homes of the wage-earning classes this usually could not be secured to the extent needed, and it was important, not only in the interest of the acute and advanced consumptive, but also in that of his wife and children, that greatly increased accommodation should be provided for his skilled attendance under satisfactory conditions. Happily, this need was being increasingly realised, and in securing this end for a large proportion of its consumptive sick Eastbourne was showing the way to other towns. As a memento of the occasion Dr. Newsholme was presented with a duplicate key to that with which he opened the institution. In further speech-making the Mayor of Eastbourne (Councillor C. W. Bolton) paid a tribute to the work of Dr. W. G. Willoughby, medical officer of health, who, his worship said, had enabled Eastbourne to attain such a high position among the healthiest towns in the kingdom.

University College, London.—The Worshipful Company of Drapers have made a grant of £500 a year for three years in aid of the work of the Department of Applied Statistics, including the Galton Laboratory of Eugenics and the Drapers' Biometric Laboratory.

Literary Intelligence.—Messrs. Crosby Lockwood and Son are announcing for publication in the autumn a new book on the "Chemistry of Petroleum and its Substitutes," by Dr. C. K. Tinkler and Dr. F. Challenger, of the University of Birmingham. In recognition of the increasing importance of petroleum, the University of Birmingham has instituted a three years' course in petroleum mining.

Extension of Yardley-road Sanatorium, Birmingham.—The new buildings at the City Sanatorium, Yardley-road, were formally opened by the Lady Mayoress (Mrs. E. Martineau) on July 24th. Councillor W. A. Cadbury, the chairman of the health committee, presided, and was supported by the Lord Mayor, Lieutenant-Colonel E. Martineau, Mr. Neville Chamberlain, Mr. Gilbert Barling, Sir Robert Simon, and members of the health committee. There was present a considerable number of medical men and others interested in the work. Sir Robert Philip gave an eloquent address on the advantages of sanatoriums, the keynote of which was contained in the concluding sentences, "Prosecute your great campaign; watch the child as a potential tuberculous seedling; correct faulty compulsory environment; and there will be a practical disappearance of the disease within a generation and a half." By the opening of these buildings the scheme for the provision of sanatoriums for pulmonary tuberculosis is now complete. It is anticipated that there will now be ample accommodation for pulmonary tuberculosis and that in years to come, as the cases suitable for sanatorium treatment diminish, it may be found possible to utilise some of the existing accommodation for other types of disease or possibly for hospital cases. Much yet remains to be done in the direction of making adequate provision for the other forms of tuberculosis, and until such provision is adequate it is probable that the best results will not be obtained from the large expenditure now undertaken in connexion with pulmonary cases. The new buildings consist of (1) a women's block, 72 beds, capable of being used for women only or of being divided for use on one side for women and on the other for men; (2) a children's block of 44 beds divided for boys and girls; (3) an observation block of ten cubicles; (4) a laundry sufficient for the whole institution; and (5) an administrative block for the medical officers and nursing staff. The women's block departs in general design from that adopted in the majority of sanatoriums in that there is no protection whatever in front from wind. The block is deep enough to enable the beds to be wheeled back to avoid rain even during windy weather. This design is based upon previous experience in the older buildings where patients were kept upon a verandah throughout the winter. The patients will be kept out on the terrace night and day when the weather is settled. In unsettled weather the beds during the night will be under the glass verandah. During stormy weather the beds can be wheeled back to the wall There are dressing-rooms in the proportion of one for four or five patients and bathrooms for every ten patients. These are situated immediately behind the beds. Under each bed is a rack to hold a dressing-gown and slippers. There will be very complete control, for 36 beds can be seen at one time. No heating whatever is provided, but there is provision for a liberal supply of hot-water bottles. There is a terrace at the back of the buildings for use during hot weather. The children's block is on the same plan but will contain two rows of beds. The cubicles in the observation block will be used by children during the first fortnight after admission to diminish the chance of importing other infections. The total beds now available are 355 for adults and 54 for children. These are situated as follows:—Salterley Grange, 68; Yardley-road, 199; West Heath, 52; Romsley Hill (Cook Memorial), 90. The estimated expenditure by the city council on buildings, land, and furnishing is £80,000. This does not include the Hospital Saturday Sanatorium at Romsley Hill nor the cost of the old buildings at West Heath taken over under the Greater Birmingham scheme. Towards the cost of the more recent buildings the Government grant will be £16,500, in addition to £8100 paid towards the erection of Romsley Hill Sanatorium. The estimated expenditure during 1914 on the whole of the sanatorium work is about £26,000 and on the dispensary £4500. The income for this will be derived roughly as follows: from Local Insurance Committee, £10,200; from national exchequer, £10,150; from local rates, £10,150.

International Dental Congress.—The Sixth International Dental Congress opened its proceedings in London on Tuesday, August 4th, in circumstances of a very depressing character. Owing to the outbreak of the war many representatives of the countries now engaged in what promises to be a Titanic struggle, who had arrived in this country for the Congress, were hurriedly recalled and left immediately. At a meeting of the International Dental Federation at the University of London, on the day previous to the opening meeting of Congress, Mr. W. B. Paterson, the President, made reference to the great work of preparation which had been done by the Federation and its committee of organisation in connexion with the Congress. The Vice-Chancellor of the University of London, Sir Wilmot Herringham, who attended to welcome the Federation, complimented the committee on its labours, which a tour of inspection through the University building will show to have been very thorough. Mr. Herbert Samuel, the President of the Board of Trade, was unable to be present to open the Congress officially, but a gracious message was read by the President from His Majesty the King. Mr. Paterson then welcomed the delegates, and brief speeches were delivered by many representatives of foreign countries and of the British colonies.

Royal Medical Benevolent Fund.—At the last meeting of the committee 20 cases were considered and grants amounting to £208 voted to the applicants. The following is a summary of the cases relieved:—

Widow, aged 65, of M.D. Dub. who practised in India, Ireland, and London. Has endeavoured for 24 years to earn a living by keeping a boarding house, but has never really made a profit and been able to save. One daughter who helps at home. Voted £10.—Daughter, aged 44 years, of M.D. Heidel. and F.R.C.S. Eng. who practised in London. Impossible to do any regular work in consequence of ill-health. Earns a little occasionally by painting. Voted £12 in 12 instalments.—Widow, aged 62 years, of M.R.C.S. Eng. who practised at Burnley and Caister. Since husband's death has acted as housekeeper to her brother, a clergyman, who has just died, and is now without home or means. Voted £10 in two instalments.—Daughters, aged 49 and 52, of M.R.C.S. Eng. who practised at Kingscliffe. Only income about £25 each and until recently this had been supplemented by occasional work as governesses, but for the last few months unable to obtain employment. Voted £5 each.—Daughter, aged 51 years, of M.R.C.S. Eng. who practised in London. Only a very small annuity and health very indifferent. Voted £5.—Daughter, aged 57, of M.R.C.S. Eng. who practised in Norfolk. Guardian spent all capital, and only income £13 per annum given by relative. Health bad. Relieved six times, £30. Voted £5.—Widow, aged 52, of L.R.C.P. Lond. who practised in London. Endeavours to earn living by letting rooms, but has not been very successful recently. Wants a little help for repairs to house. Relieved once, £12. Voted £10.—Daughter, aged 33, of M.D. Dub. who practised at British Guiana and in Middlesex. Is suffering from her glands and her teeth require attention, consequently too ill to work. Relieved eight times, £80. Voted £10.—Daughter, aged 75, of M.R.C.S. Eng. who practised at Doncaster. Too old to work, and only income Old Age Pension. Relieved twice, £30. Voted £18 in 12 instalments.—Daughter, aged 67, of M.R.C.S. Eng. who practised at Rendcomb. Health very indifferent and quite unable to work. Relieved 12 times, £178. Voted £18 in 12 instalments.—Widow, aged 48, of M.R.C.S. Eng. who practised at Hexham and London. Endeavours along with her daughter to earn a living by taking in boarders, but not successfully. Stepson helps a little. Relieved five times, £60. Voted £12 in 12 instalments.—Widow, aged 65 years, of M.D. Glasg. who practised at Dennistoun. Has a small pension from the Elder Fund, and son pays rent of house. Takes in boarders in the summer, but does not get sufficient to make it pay. Relieved six times, £54. Voted £12 in 12 instalments.—Daughter, aged 58, of L.R.C.P. Edin. who practised in North London. Health very bad and unable to work. Recently received a pension of £40 from the Mercers' Company. Relieved eight times, £83. Voted £5.—Daughters, aged 42 and 50, of L.S.A. Lond. who practised at Sydenham and Plumstead. The elder suffers from migraine and the younger is an epileptic, both unable to work. Recently lost mother, who had a small pension. Joint income only £45 per annum. Relieved eight times, £83. Voted jointly £18 in 12 instalments.—Widow, aged 64, of M.D. Edin. who belonged to the R.A.M.C. Suffering from cancer, and has been operated upon. Small army pension, but not sufficient to provide necessary nourishment. Relieved once, £6. Voted £10.—Widow, aged 69, of M.R.C.S. Eng. who practised at East London and who died last year. Left her quite unprovided for. Health very bad, Five children, but none able to assist. Has a pension from the Fishmongers' Company of £30, and total income about £45. Relieved once. £12. Voted £12 in 12 instalments.—Widow, aged 64, of M.D. St. And. and M.R.C.S. Eng. who was engaged by the Stepney Union. Tries t earn a living by taking in lodgers, but cannot make enough to live on. Four children, none able to help. Relieved 11 times. £132. Voted £12 in 12 instalments.—Widow, aged 48, of L.R.C.P. & S. Edin. who practised at Stamford Hill. Suffering from cancer, and has been operated upon and quite unable to work. Has one daughter, aged 17 years, who earns a few shillings weekly. Has no income. Has been helped by the Guild. Relieved twice, £38. Voted £18 in 12 instalments.—A special emergency grant of £1 was also made to an urgent case.

Contributions may be sent to the honorary treasurer, Dr. Samuel West, 11, Chandos-street, Cavendish-square, London, W.

University of Manchester.—The medical session at the University of Manchester will be inaugurated by an address delivered in the medical school on Oct. 8th, at 4 P.M., by Professor E. S. Reynolds, M.D. Lond., F.R.C.P. Lond., on "The Industrial Diseases of Greater Manchester."

Alexandra Day and the Hospitals.—At a meeting of the distribution committee of the Alexandra Day collection, held under the presidency of the Lord Mayor at the Mansion House on July 27th, it was announced that after payment of all expenses, including the making of the roses, the most expensive item, there remained some £22,000 for distribution, £6000 more than last year. Among certain institutions selected by Queen Alexandra £6645 were divided, and £14,335 were allocated to various London hospitals and institutions.

The Metropolitan Hospital Sunday Fund.—At a meeting at the Mansion House held under the presidency of Sir William Church on July 31st the council of the Metropolitan Hospital Sunday Fund allocated £59,403 to 253 hospitals, dispensaries, and nursing associations. Sir Ernest Tritton was chosen to fill the vacancy caused by the resignation of Sir John Bell as vice-chairman of the Fund, pending a permanent appointment. Sir William Church was elected to represent the Fund on the committee which is dealing with the coördination of district nursing institutions.

The Workmen's Compensation Act and Workers' Cramp.—The Secretary of State for the Home Department has appointed the following gentlemen to be Medical Referees under the Workmen's Compensation Act, 1906, with a view to their being employed in all cases of telegraphists' cramp and writers' cramp arising in the Circuits (indicated in brackets) in which the services of a medical referee are required:—Dr. Arthur Stanley Barnes (21, 22, 25, 26), Dr. John Michell Clarke (54), Dr. T. Wardrop Griffith (11, 12, 13, 14), Dr. Astley Vavasour Clarke (20), Dr. Theodore Thompson (38 to 48 and 51, and the Court for the City of London), Dr. George Hall (1, 2), Dr. Joseph Wilkie Scott (18, 19), Dr. Judson Sykes Bury and Dr. Harold Alfred Schölberg (4 to 9 and 24 and 30), Dr. Edwin Bramwell (Sheriffdoms of Fife and Kinross and the Lothians and Peebles), and Dr. Alexander Scott (Sheriffdoms of Ayr, Dumbarton, and Clackmannan).

Donations and Bequests.—By the will of the late Mr. Frederick Marshall Kenderdine, of Old Trafford, near Manchester, the testator left £500 each to the Manchester Royal Infirmary, the Manchester and Salford Lock Hospital, St. Mary's Hospital, Manchester, and Owens College, Manchester.—The late Mr. Robert Jackson Kent has left by will £500 each to the Free Cancer Hospital and the Middlesex Hospital, in each case to be applied towards the discovery of the cause of cancer, the means of prevention of its development, and of a cure therefor.—By his will Mr. John James Richardson, of Whitehaven, left £1000 each to the Whitehaven and West Cumberland Infirmary, the Royal Albert Asylum, Lancaster, and Dr. Barnardo's Homes.—The late Mr. William Calvert, of Stockport, has in his will requested his executors to give £500 to the Stockport Infirmary.—The governors of the Ashton and Stalybridge District Infirmary have received a cheque for £1000 from Mrs. Elizabeth Barker, of Ashton, the money to be applied for the endowment of a cot in the children's hospital at the infirmary.—A donation of £1000 has been made by the executors of the late Sir William Dunn to the building fund of the Hospital for Diseases of the Skin, Blackfriars.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The War.

THE declaration of war between Britain and Germany became known late on Tuesday night, but it could not be announced to the House of Commons until Wednesday. Mr. ASQUITH informed the House of the final phases of the diplomatic communications which ended in the declaration. It is abundantly recognised that great national sacrifices will be required, but the Government will have behind it a united Parliament in taking all necessary measures to pursue the war.

Since the situation in Europe became threatening the attention of Parliament has been given to it exclusively. The anxiety as to the outcome of events has dominated the whole situation, and nothing has been more remarkable than the extraordinary rapidity with which the ordinary lines of party demarcation have disappeared in the face of impending danger and calamity. In these circumstances the topics of domestic controversy have for the time being been relegated to the background in the desire to present to the States of Europe a united Parliament and nation. It is unnecessary to recapitulate the stages in the development of the situation as it has been seen from Westminster. That has been done with regularity and fullness by the daily newspapers, and indeed before the ink is dry in chronicling one step in the great and momentous drama now absorbing the anxious interest and energy of Europe another step has been taken. However terrible may be the calamity that is impending over Europe, the situation has been faced at Westminster with calm.

The Budget Health Grants.

Supplementary Estimates published on Wednesday, July 29th, give details of the proposed additional grants under the National Insurance Act. The additional vote amounts to £943,100, and is made up as follows: Administration of medical benefit, £35,100; arrears of contributions, £80,000; sickness benefit (women), £500,000; medical referees, consultants, &c., £50,000; supplementary medical services (Great Britain), £50,000; nursing grants, £100,000; sanatorium benefit, £100,000; and medical attendance, &c., of aged and disabled members of societies, £28,000.

Some interesting points are dealt with in notes attached to the Estimates. It is explained in reference to the additional grant of £35,100 for the administration of medical benefit that the special grants in aid of the administration of medical benefit for the year 1914 were subject to the condition that the grants therefrom to Insurance Committees should not exceed the rate of 1½*d.* for each insured person. Experience has shown that the cost of administration of Insurance Committees per head of insured population varies with the number of insured persons in the area, and that a flat rate of grant is inappropriate. It is proposed, therefore, to apply a sum not exceeding £21,000 out of this vote in payments to certain Insurance Committees for the year 1914 in excess of the rate of 1½*d.* per insured person. As, however, there will be balances in the special accounts estimated at £20,900, which will be available towards the grants to be made for the year 1915, the net additional sum required to bring up the amount available in respect of the latter year to a sum equal to 1½*d.* per insured person is £100. Provision is also made for grants to Insurance Committees, in addition to those above mentioned, but not exceeding £15,000 in all, in respect of the special initial expenses in connexion with the administration of medical benefit in the year 1914, so far as those expenses have created a deficiency in the administration account of any committee. It is also proposed to apply a sum not exceeding £20,000 in grants to Insurance Committees in the United Kingdom towards the cost of health lectures and the publication of information on questions of health.

Then the grant in aid of £500,000 for sickness benefit (women) is to be applied towards the cost of sickness benefit, including loss of contributions, incurred since the commencement of the Act by Approved Societies having women members on a basis calculated with reference to the relative incidence of incapacity during pregnancy among such members.

Another grant is to go for the remuneration and expenses of medical referees and consultants, travelling expenses of insured persons presenting themselves for examination, and other expenses for the purpose of referee and consultant services. Any payments made by Approved Societies in respect of the services of medical referees will be paid into the Exchequer.

The grant for supplementary services (Great Britain) is to be given as grants to Insurance Committees in respect of the provision of specialist consultations in connexion with the treatment of insured persons and in aid of the equipm and maintenance of clinics for the use of panel practition

As regards the nursing grants, they are to go to Insura Committees towards the provision of nursing.

The £100,000 for sanatorium benefit is to be devoted grants to Insurance Committees for the purpose of sup menting the funds available for sanatorium benefit under National Insurance Act, 1911, on a basis calculated w reference, *inter alia*, to the relative incidence of tubercul in various areas.

Pathological Laboratories.

In the Supplementary Estimates there is a vote of £50, for grants to assist in the provision of laboratory facili with a view to the prevention, diagnosis, and treatment disease. It is explained that the money will be allocated the Treasury to the English, Scottish, and Irish Local Gove ment Boards for the purpose of distribution, with approval of the Treasury, as grants to local authorities w are willing to provide or arrange for the provision of labo tory facilities with a view to the prevention, diagnosis, a treatment of disease, and who submit schemes for t purpose not later than Dec. 31st, 1914. If in any area local authority is unwilling to provide or arrange acco ingly, a share of the grants will be allocated to the Natio Insurance Joint Committee for distribution to the Insura Committee of that area towards the provision of su facilities and aids. The accounts of the local authorities a Insurance Committees will be audited in the usual mann Balances remaining in the hands of those bodies at the cl of the financial year will not be subject to surrender to Exchequer.

Milk and Dairies Bill.

Early in the morning of Wednesday, July 29th, the Ho of Commons considered the first three clauses of the M and Dairies Bill on report. Not much change was made the text. The House decided to adhere to the decision of committee that milk in which a high standard of purity w reached might be sold as "certified milk."

The Milk and Dairies Bill has passed through its rep stage in the House of Commons without much alterati and has been read a third time. An amendment w adopted to enable the medical officer of health, wh ever he was so minded, to make a medical insp tion of the persons employed in a dairy and also of labourers employed on the farm. Another amendment w agreed to whereby milk at municipal depôts should not sold at less than cost price. Although the Bill has recei very thorough discussion in its committee and report sta it has now been carried through the House of Comm more or less with that measure of agreement which HERBERT SAMUEL, the President of the Local Governme Board, aimed at attaining when he introduced it.

Indian Medical Service.

Official correspondence relating to the Indian Medi Service and the medical profession in India has been laid the table of the House of Commons.

Nurses Registration.

A deputation including medical men and nurses last we asked Mr. McKENNA to give facilities for the second readi of the Nurses Registration Bill. The Home Secreta declined, and although this occasion was before the f gravity of the European situation had developed, he point out that it was impossible at this period of the session grant the time. An additional difficulty, he stated, was t opposition which was offered to the Bill by a section medical men and nurses.

Patent Medicines.

It is understood that the select committee which has bee considering various aspects of the use and sale of pate medicines has now completed its report. The document now in the hands of the printers and will shortly be issued.

Voluntary Mental Treatment Bill.

Earl RUSSELL introduced the Voluntary Mental Treatme Bill in the House of Lords a short time ago. It is n intended to proceed further with it this session.

HOUSE OF COMMONS.

THURSDAY, JULY 30TH.

State Medical Service.

Mr. CHARLES BATHURST asked the honourable Membe for St. George's-in-the-East whether the Government ha definitely decided to establish a State Medical Service i connexion with the National Health Insurance scheme.—Mr. WEDGWOOD BENN said: The answer is in the negative.

Medical Officers of Health in Wales.

Replying to Mr. JOHN WILLIAMS, Mr. HERBERT SAMUE said that the Local Government Board in December, 1910

a general memorandum to local authorities other
county councils in which they pointed out the advan-
of appointing medical officers of health who were not
gage in private practice, and urged the authorities of
districts to combine with their neighbours to secure
an officer. It was their practice to bring this view to
tice of local authorities when a new appointment was
made. Under the Housing, Town Planning, &c., Act,
a medical officer of health appointed by a county
il, after the passing of that Act, might not engage in
e practice. The right honourable gentleman then gave
of the medical officers of health employed by local
rities in Wales with the salaries attached to their

oman Medical Inspector under Mental Deficiency Act.

HUDSON asked the Home Secretary (1) whether the
of Control for the administration of the Mental
ency Act were now taking steps to have a medical
n inspector appointed; and whether medical inspec-
for the male section of the community had been in
ion for practically four months under the Act;
2) why the appointment of a medical woman
tor under administration of the Mental Deficiency
ad not been made, seeing it was on April 1st
the Board of Control considered the matter
t.—Mr. McKENNA replied: The matter is receiving
tention of the Board, whose views as to the need
ch an appointment have undergone no change, but
have not yet secured the services of a suitable
. The matter is not urgent, as few new institu-
ave yet been opened, and the services of the medical
who have been appointed inspectors at various dates
the commencement of the Act are of course available
benefit of defectives of both sexes.

The Administration of the Lunacy Act.

W. GUINNESS asked the Home Secretary whether he
give for the last available year the number of cases
medical officers or attendants had sent in certificates
Clause 8 of the Lunacy Act, 1890, stating that it would
judicial for a patient to exercise his right to go before
visited by a judicial authority.—Mr. McKENNA
red: The number of cases in the year 1913 where
al officers have sent in such certificates from institu-
was 367. The figures for private patients in single care
ot been tabulated.

GUINNESS asked the right honourable gentleman
er he would give for the last available year the
er of reception orders made under the Lunacy Act,
distinguishing those made after consideration under
n 6, those made without a judicial authority personally
the alleged lunatic, those where the alleged lunatic
xercised the right to go before a judicial authority
Section 8, and orders after inquisition under
n 12.—Mr. McKENNA replied: The number of
ion orders into institutions made under Section 6 of
unacy Act, 1890, was in the year 1913 2144. The orders
after consideration cannot be distinguished from those
forthwith. Those made without the patient being
by the judicial authority before the order was made
1414. In 77 cases the patient exercised the right to go
a judicial authority given by Section 8. The above
s do not include private patients in single care. The
er of persons found of unsound mind after inquisition
in 1912, the last year for which statistics are available.

TUESDAY, AUGUST 4TH.

Seamen and Panel Medical Men.

FRED HALL (Dulwich) asked the honourable Member
t. George's-in-the-East whether, according to the
nal Insurance Act, a seaman could only obtain the
es of a panel doctor at the port at which he signed on;
f so, whether he would take in the next amending Bill
e facilities for seamen to receive medical benefits
reatment at any port in the United Kingdom.—Mr.
WOOD BENN replied: In the case of seamen who are
ers of the Seamen's National Society medical attend-
is available in every port of Great Britain under the
l arrangements made by that society. As regards
seamen, it is open to them to avail themselves of the
l "travellers" arrangements under which medical
it may be obtained anywhere in Great Britain.

Medical and Surgical Appliances.

lying to Mr. WILES, Mr. WEDGWOOD BENN wrote: The
al and surgical appliances which may be supplied as
of medical benefit are those prescribed in the Second
lule to the Regulations. Neither the Commissioners
e Insurance Committees have any power to sanction
rovision of any appliances not included in the schedule.

BOOKS, ETC., RECEIVED.

APPLETON D., AND Co., London.
Diseases of the Stomach and their Relations to Other Diseases. By Charles G. Stockton, M.D., Professor of Medicine, University of Buffalo. Price 25*s*. net.
Anemia and Resuscitation: An Experimental and Clinical Research. By George W. Crile, Professor of Surgery, Western Reserve University Medical College. Price 21*s*. net.
The Occupational Diseases: their Causation, Symptoms, Treatment, and Prevention. By W. Gilman Thompson, M.D., Professor of Medicine, Cornell University Medical College in New York City. Price 25*s*. net.

BAILLIÈRE, J. B., ET FILS, Paris.
Les Sécrétions Internes: Principes Physiologiques Applications à la Pathologie. Par le Dr. E. Gley. Price Fr.1.50.
L'Appareil Thymo-Thyroïdien: Thyroïdes, Parathyroïdes, Thymus, Anatomie, Physiologie, Pathologie, Deductions Thérapeutiques. Par L. Launoy, Docteur Ès-Sciences Naturelles. Price Fr.14.

BALE, JOHN, SONS AND DANIELSSON London.
Dental Microscopy. By A. Hopewell-Smith, L.R.C.P. Lond., M.R.C.S. Eng., L.D.S., Professor of Dental Histology at the University of Pennsylvania. Third edition, revised and enlarged. Price 15*s*. net.
On Means for the Prolongation of Life. Fourth enlarged edition. By Sir Hermann Weber, M.D., F.R.C.P. Price 4*s*. 6*d*. net.
Effects of Volcanic Action in the Production of Diseases and Atmospheric Vicissitudes. By H. J. Johnston-Lavis, M.D., D.Ch., M.R.C.S. Eng., L.S.A., F.G.S. Price 3*s*. net.

HIRSCHWALD, AUGUST, Berlin.
Die Verletzungen der Wirbelsäule durch Unfall. Ein Beitrag zur Versicherungsmedizin. Auf Grund von ca. 200 Eigenbeobachtungen. Von Dr. med. Franz Otto Quetsch. Price M.4.50.

KEGAN PAUL, TRENCH, TRÜBNER, AND CO., LIMITED, London.
General Nursing. By Eva C. E. Lückes, Matron to the London Hospital. New and revised (ninth) edition. Price 5*s*. net.

KIMPTON, HENRY, London.
Diagnosis and Treatment of Digestive Diseases: A Practical Treatise for Students and Practitioners of Medicine. By George M. Niles, M.D. Price 21*s*. net.
Practical Therapeutics, including Materia Medica and Prescription Writing. With a description of the most important new and non-official remedies passed upon by the Council of Pharmacy and Chemistry of the American Medical Association. By Daniel M. Hoyt, M.D. Second edition, revised and rewritten. Price 21*s*. net.
Nutrition: A Guide to Food and Dieting. By Charles E. Sohn, F.I.C., F.C.S. Price 3*s*. 6*d*. net.

LIVINGSTONE, E. AND S., Edinburgh.
Gas Poisoning in Mining and other Industries. By John Glaister, M.D. Glasg., D.P.H. Camb., F.R.S.E., Professor of Forensic Medicine and Public Health in the University of Glasgow; and David Dale Logan, M.D. Glasg., D.P.H., Surgeon to the Coltness Ironworks. Price 10*s*. 6*d*. net.
Examination of the Urine and other Clinical Side-Room Methods (late Husband's). By A. F. Hewat, M.B., Ch.B., M.R.C.P. Edin. Fifth edition. Price 1*s*. 6*d*. net.

LONGMANS, GREEN, AND CO., London.
The Annual Charities Register and Digest, 1914. By C. S. Loch. Price 5*s*. net.

STANLEY PAUL AND CO., Essex-street, W.C.
Thomas Short (Principal Medical Officer in St. Helena). With Biographies of some other Medical Men associated with the Case of Napoleon from 1815 to 1821. By Arnold Chaplin, M.D. Price 2*s*. net.

URBAN UND SCHWARZENBERG, Berlin und Vienna.
Spezielle Pathologie und Therapie innerer Krankheiten. In 10 Bänden. Herausgegeben von Friedrich Kraus und Theodor Brugsch in Berlin. Lieferung 17–20 (II. Band, 2 Hälfte. Seite 261–492). Lieferung 21–24 (II. Band, 2 Hälfte, Seite 493–714). Lieferung 25–29 (V. Band, Seite 1–304). Lieferung 30–31 (I. Band, 7 Hälfte, Seite 239–350). Lieferung 32–34 (II. Band, 2 Hälfte, Seite 715–874). Lieferung 35–36 (V. Band, Seite 305–434). Lieferung 37–39 (II. Band, 1 Hälfte, Seite 431–598). Price M.2 each Lieferung.

YALE UNIVERSITY PRESS, New Haven. HUMPHREY MILFORD, London.
The Life and Letters of Nathan Smith, M.B., M.D. By Emily A. Smith. With an Introduction by William H. Welch, M.D., LL.D. Price 10*s*. net.

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BALLANCE, A. C., M.B., B.Ch. Oxon., has been appointed Senior Obstetric House Physician at St. Thomas's Hospital.

BIRD G. A., M.B., B.S., B.Sc. Lond., has been appointed Resident House Surgeon at St. Thomas's Hospital.

BOSWELL, N. A., M.B., Ch.B. Birm., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Runcorn District of the county of Chester

BOURDILLON, L. G., M.R.C.S., L.R.C.P. Lond., has been appointed Casualty Officer and Resident Anæsthetist at St. Thomas's Hospital.

CASSIDI, F. L., M.R.C.S., L.R.C.P. Lond., has been appointed Casualty Assistant at St. Thomas's Hospital.

CHADWICK, ETHEL, M.B., Ch.B., has been appointed House Surgeon at the Stanley Hospital, Liverpool.

Chaplin, H. G., M.R.C.S., L.R.C.P. Lond., has been appointed Resident House Surgeon at St. Thomas's Hospital.

Davies, J. C., M.B., B.Ch. Oxon., has been appointed Resident House Physician at St. Thomas's Hospital.

Dawson, H. P., M.B., B.C. Cantab., has been appointed Junior Obstetric House Physician at St. Thomas's Hospital.

De Mowbray, R. M., M.R.C.S., L.R.C.P. Lond., has been appointed Casualty Officer and Resident Anæsthetist at St. Thomas's Hospital.

Dennis, A. W., M.B., B.Ch. Oxon., has been appointed Clinical Assistant in the Children's Medical Department at St. Thomas's Hospital.

Doorly, A. R. C., M.R.C.S., L.R.C.P. Lond., has been appointed Casualty Officer and Resident Anæsthetist at St. Thomas's Hospital.

Doyne, P. G., M.B., B.Ch. Oxon., has been appointed Junior Ophthalmic House Surgeon at St. Thomas's Hospital.

Dudley, Francis, L.R.C.P., L.R.C.S., L.M. Irel., has been appointed Medical Superintendent at the Cornwall County Asylum, Bodmin.

Gandy, E. Worsley, M.R.C.S., L.R.C.P. Lond., has been appointed Assistant Anæsthetist to the Royal Ear Hospital, Soho, and Administrator of Anæsthetics to Westminster Hospital.

Gibson, J. A., M.D., C.M. Edin., has been appointed Medical Officer of Health of East Cowes.

Gimlette, C. H. M., M.R.C.S., L.R.C.P. Lond., has been appointed Clinical Assistant in the Skin Department at St. Thomas's Hospital.

Gimblett, C. L., M.R.C.S., L.R.C.P., has been appointed Senior Ophthalmic House Surgeon at St. Thomas's Hospital.

Hebert, G. T., M.B., B.Ch. Oxon., has been appointed Resident House Physician at St. Thomas's Hospital.

Hirsch, Charles T. W., M.R.C.S., L.R.C.P. Lond., has been appointed House Anæsthetist to the Royal Dental Hospital.

Hobhouse, E. W. N., M.B., B.Ch. Oxon., has been appointed Casualty Officer and Resident Anæsthetist at St. Thomas's Hospital.

Leigh, J. D., M.B., C.M. Edin., has been appointed Tuberculosis Medical Officer of Durham

Lumb, N. P. L., M.R.C.S., L.R.C.P. Lond., has been appointed Casualty Officer and Resident Anæsthetist at St. Thomas's Hospital.

McMillan, K. H., M.R.C.S., L.R.C.P. Lond., has been appointed Casualty Officer and Resident Anæsthetist at St. Thomas's Hospital.

Marshall, W. H., M.R.C.S., L.R.C.P. Lond., has been appointed Casualty Assistant at St. Thomas's Hospital.

Pennell, V. C., M.R.C.S., L.R.C.P. Lond., has been appointed Casualty Officer and Resident Anæsthetist at St. Thomas's Hospital.

Petty, M. J., M.B., B.C. Cantab., F.R.C.S. Eng., has been appointed House Surgeon to Block 8 at St. Thomas's Hospital.

Potter, A. F., M.R.C.S., L.R.C.P. Lond., has been appointed Clinical Assistant in the Children's Medical Department at St. Thomas's Hospital.

Sargent, E. L. K., M.B., B.C. Cantab., has been appointed Casualty Officer and Resident Anæsthetist at St. Thomas's Hospital.

Sharp, J. E., M.R.C.S., L.R.C.P. Lond., has been appointed Clinical Assistant in the Ear Department and in the Throat Department at St. Thomas's Hospital.

Shelley, L. W., M.R.C.S., L.R.C.P. Lond., has been appointed Resident House Physician at St. Thomas's Hospital.

Sloper, J. S., M.B., B.S. Lond., has been appointed Resident House Surgeon at St. Thomas's Hospital.

Sparks, C. W., M.R.C.S., L.R.C.P. Lond., has been appointed Clinical Assistant in the Children's Surgical Department at St. Thomas's Hospital.

Sparrow, J. A. G., M.B., B.Ch. Oxon., has been appointed Resident House Physician at St. Thomas's Hospital.

Stack, Edward Hugh Edwards, M.B., B.C. Cantab., F.R.C.S. Eng., L.R.C.P. Lond., has been appointed Honorary Ophthalmic Surgeon to the Bristol Royal Infirmary.

Thomas, William Rees, M.D. Lond., has been appointed Medical Superintendent of the State Institution for Mental Defectives at Moss Side, Liverpool.

Wheeler-Bennett, C. W., M.B., B.Ch. Oxon., has been appointed Resident House Surgeon at St. Thomas's Hospital.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (*see Index*).

Ashton-under-Lyne District Infirmary and Children's Hospital.—Assistant House Surgeon. Salary £100 per annum, with board, residence, and laundry.

Banbury, Horton Infirmary.—House Surgeon. Salary £120 per annum, with board and residence.

Barrow-in-Furness, North Lonsdale Hospital.—House Surgeon. Salary £150 per annum, with residence, board, and laundry.

Bedford County Hospital.—Assistant House Surgeon. Salary £100 per annum, with board, lodging, and laundry.

Benenden National Sanatorium, Kent.—Assistant Medical Officer. Salary £120 per annum, with board, residence, and laundry.

Bethnal Green Infirmary, Cambridge Heath, E.—Second and Third Assistant Medical Officers. Salary at rate of £180 and £160 per annum respectively, with apartments, board, and washing.

Birkenhead Borough Hospital.—Senior House Surgeon. Salary £120 per annum, with board and laundry.

Bodmin, Cornwall County Asylum.—Junior Assistant Medical Officer. Salary £225 per annum, with quarters, board, laundry, and attendance.

Bootle Borough Hospital.—Senior and Junior House Surgeons. Salaries £120 and £100 respectively, with residence; board, and laundry.

Bootle County Borough.—Clinical Tuberculosis Officer and Deputy Medical Officer of Health. Salary £400 per annum.

Bradford City Education Committee.—Chief School Dentist. Salary £350 per annum.

Bradford City Hospital for Consumptives.—Resident Medical Officer. Salary £200 per annum, with board and residence.

Bradford Royal Infirmary.—House Physician and House Surgeon, unmarried. Salary £100 per annum each, with board, residence, and washing.

Brentford Union Infirmary, Warkworth House, and Schoo Isleworth, W.—Second Assistant Medical Superintendent, married. Salary £200 per annum, with usual residential emo ments.

Brighton Throat and Ear Hospital, Church-street, Queen's-ro —Non-Resident House Surgeon for six months. Salary at rate £150 per annum.

Bristol City Asylum, Fishponds.—Second Assistant Medical Offic unmarried. Salary £250 per annum, with apartments, boa washing, and attendance.

Bristol Royal Hospital for Sick Children and Women.—Ho Physician. Salary £100 per annum, with board, rooms, attendan and laundry.

British Guiana.—Bacteriologist. Salary £350 per annum, wi furnished bachelor quarters.

Bury St. Edmunds, West Suffolk General Hospital.—Reside Medical Officer, unmarried. Salary £120 per annum, with boar lodging, and laundry.

Buxton, Derbyshire, Devonshire Hospital.—Assistant Hou Physician for six months. Salary £100 per annum, with apa ments, board, and laundry.

Calcutta Corporation.—Assistant Health Officer. Salary Rs.700 p mensem.

Cambridge, Addenbrooke's Hospital.—Second House Surgeo Salary £80 per annum, with board, residence, and laundry.

Cancer Hospital, Fulham-road, S.W.—House Surgeon for six mont Salary £70 per annum.

Carnarvonshire Education Committee.—School Dentist. Sala £250 per annum.

Colchester, Essex County Hospital.—House Surgeon. Salary £1 per annum, with board, residence, and washing.

Croydon Borough Hospital for Infectious Diseases.—Assista Resident Medical Officer. Salary £150 per annum, with boa residence, and laundry.

Derby, Derbyshire Hospital for Sick Children.—Female Reside Medical Officer. Salary £80 per annum.

Devonport, Royal Albert Hospital.—House Surgeon, unmarri Salary £150 per annum, with board and laundry.

Downpatrick, Down District Lunatic Asylum.—Second Assista Medical Officer, unmarried. Salary £170 per annum, with apa ments, board, washing, attendance, &c.

Glamorgan County Council Committee for the Care of t Mentally Defective.—Medical Officer. Salary £300 per annu

Glasgow School Board.—Female Assistant Medical Officer. Sala £250 per annum.

Hellingly, East Sussex County Asylum.—Third Assistant Medi Officer. Salary £250 per annum, with board, lodging, washi and attendance.

Hospital for Consumption and Diseases of the Chest, Brompt —House Physician for five months. Salary 25 guineas.

Hull Royal Infirmary.—Senior House Surgeon, unmarried. Sal £150 per annum, with board and apartments. Also Assist House Surgeon. Salary at rate of £100 per annum, with bo and lodging.

Lancashire County Council.—Two Junior Assistant Tubercul Officers. Salary £300 per annum.

Leamington Spa, Warneford, Leamington, and South Warwi shire General Hospital.—House Physician. Salary £85 annum, with board, residence, and laundry.

Leicester Royal Infirmary.—Assistant House Surgeon for months. Salary at rate of £100 per annum, with board, ap ments, and washing.

Liverpool Education Committee.—Two Assistant School Med Officers. Salary at rate of £250 per annum.

London Lock Hospital.—House Surgeon to Female Hosp Harrow-road, W. Salary £100 per annum, with board, reside and washing.

Maidstone, Kent County Ophthalmic Hospital.—House Surg unmarried. Salary £100 per annum, with board, residence, laundry.

Maidstone, West Kent General Hospital.—Assistant House S geon, unmarried. Salary £100 per annum, wth board, lodging,

Manchester Children's Hospital, Pendlebury.—Resident Med Officer, unmarried, for six months. Salary at rate of £100 annum.

Manchester, Hulme Dispensary, Dale-street, Stretford-road.—Ho Surgeon. Salary £180 per annum, with apartments, atte ance, coal, and gas.

Manchester Northern Hospital for Women and Children, Pa place, Cheetham Hill-road.—House Surgeon. Salary £120 annum, with apartments and board.

Manchester, Poor-law Institution, Crumpsall.—Junior Resid Assistant Medical Officer, unmarried. Salary £120 per ann with rations, apartments, washing, and attendance.

Manchester Royal Eye Hospital.—Junior House Surgeon. Sal £80 per annum, with residence, board, and washing.

Manchester Royal Infirmary.—Medical Officer for Out-Patie and Accidents for six months. Salary at rate of £100 per ann with board and residence. Also House Physicians and Ho Surgeons, unmarried, for six months. Board and reside provided.

Mansfield and District Hospital.—Resident House Surgeon, married. Salary £200 per annum, with board, residence, washing.

Metropolitan Hospital, Kingsland-road, N.E.—House Surgeon Assistant House Surgeon for six months. Salary at rate of £60 £40 per annum respectively, with board and washing.

Newport (Mon.), Royal Gwent Hospital.—Resident Medical Offi Salary for first six months at rate of £100 per annum, second months £125, and third six months £150, with board, residence, laundry.

Norwich City Asylum, Hellesdon, near Norwich.—Assistant Med Officer, unmarried. Salary £250 per annum, with board, ap ments, attendance, and laundry.

Nottingham General Dispensary.—Assistant Resident Surg unmarried. Salary £180 per annum, with apartments (not boa attendance, light, and fuel.

Peterborough Infirmary and Dispensary.—House Surgeon, married. Salary at rate of £200 per annum, with residence, bo and laundry.

ar Hospital for Accidents, Poplar, E.—Assistant House urgeon for six months. Salary at rate of £80 per annum, with oard and residence.

on, County Asylum. Whittingham, Lancs.—Assistant Medical fficer, unmarried. Salary £250 per annum, with board, apart-ents, &c.

on Royal Infirmary.—House Physician. Salary £120 per nnum, with board, residence, and laundry.

ey Hospital, Putney Common, S.W.—Resident Medical Officer. alary £100 per annum, with rooms, board, and laundry.

ord, State Criminal Lunatic Asylum.—Medical Locum Tenens. alary £5 5s. per week, with quarters, coals, light, and attendance.

ay and Egilshay, Parish of.—Resident Medical Officer. Salary 61 sterling per annum, with house (partly furnished) and garden. rom Medical Association £30.

l Edinburgh Asylum, Morningside.—Assistant Physician. alary £175 per annum.

l Naval Medical Service.—Twenty-five Appointments.

l Waterloo Hospital for Children and Women, S.E.— unior Resident Medical Officer. Salary at rate of £70 per annum, ith board and washing. Also Senior Resident Medical Officer. alary at rate of £90 per annum, with board and washing.

arylebone.—District Medical Officer for poor in St. John's istrict of the parish. Salary £100 per annum.

ary's Hospital for Women and Children, Plaistow, E.— ssistant Resident Medical Officer. Salary at rate of £100 per nnum, with board, residence, and laundry.

ary's Hospital, Paddington, W.—Resident Assistant Anæs-etist for six months. Salary at rate of £100 per annum, with oard and residence.

ord Royal Hospital.—Casualty House Surgeon. Salary at ate of £100 per annum, with board and residence.

ord Union Infirmary.—Resident Assistant Medical Officer, nmarried. Salary £150 per annum, with apartments, attend-ce, and rations.

borough Hospital and Dispensary.—Senior and Junior House urgeons. Salaries £100 and £80 per annum respectively, with oard, residence, &c.

field, East End Branch of the Children's Hospital (Out-atient Department).—House Surgeon. Salary £120 per annum, ith board and residence.

h Shields, Ingham Infirmary and South Shields and estoe Dispensary.—Junior House Surgeon. Salary £115 per nnum, with residence, board, and washing

erland Royal Infirmary.—House Physician and Junior House urgeon. Salaries £120 and £100 per annum respectively, with oard, residence, and laundry.

sea General and Eye Hospital.—House Surgeon. Salary 125 per annum, with board, washing, and attendance. Also ouse Physician. Salary £125 per annum, with board, apartments, nd laundry.

o, Royal Cornwall Infirmary.—House Surgeon, unmarried. alary £100 per annum, with rooms, board, and washing.

sall and District Hospital.—Junior House Surgeon and Anæs-hetist. Salary £110 per annum, with board, residence, and aundry.

Bromwich and District Hospital.—Assistant Resident ouse Surgeon and Anæsthetist, unmarried. Salary £100 per nnum, with board, residence, and washing.

Riding of the County of York, Storthes Hall Asylum, irkburton, near Huddersfield.—Assistant Medical Officer. Salary 230 per annum, with rooms, board, attendance, and washing.

ton-super-Mare Hospital.—House Surgeon, unmarried. Salary 120 per annum, with residence, board, and laundry.

hester, Royal Hampshire County Hospital.—House Physician. alary £80 per annum.

Chief Inspector of Factories, Home Office, London, S.W., gives otice of vacancies for Certifying Surgeons under the Factory nd Workshop Acts at Dunstable, in the county of Beds; and at rillick, in the county of Tyrone.

Home Secretary gives notice of vacancies for Medical Referees nder the Workmen's Compensation Act, 1906, for the Shetland istrict in the Sheriffdom of Caithness, Orkney, and Shetland; and or Cardiff and Barry County Courts in Circuit No. 24.

Births, Marriages, and Deaths.

BIRTHS.

ingridge.—On July 31st, at Goldwell, Goudhurst, Kent, the wife f W. R. Collingridge, M.R.C.S., of a son.

ies.—On July 24th, at Kindar House, New Abbey, Dumfries, the wife of Hugh Gillies, M.R.C.P., of a daughter.

on.—On August 1st, at George-street, Portman-square, W., the wife of G. A. Mason, M.A., M.B., B.C. Cantab., of a son.

ner.—On August 4th, at St. Philip's-place, Birmingham, Olive Elgood Turner, M.S.Lond., wife of Alfred Charles Turner, of a aughter.

MARRIAGES.

afield—Gelardi.—On July 28th, at Holy Trinity, Brompton, Joseph Dudley Benjafield, M.D., to Elvera Helen, elder daughter f Gustave C. E. Gelardi, Folkestone.

byshire—Briggs.—On July 30th, at St. Martin's-in-the-Fields, Trafalgar-square, Stewart C. Darbyshire, M.R.C.S., L.R.C.P., to Alice, second daughter of the late Colonel John Briggs.

DEATHS.

ley.—On July 31st (suddenly), at Christchurch, Hants, Albert Brook Batley, M.R.C.S., M.R.C.P., fifth son of the late Joseph Batley, of Huddersfield.

.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

STUDENTS' NUMBER OF THE LANCET.

Information intended for the Students' Number of The Lancet must be sent without delay, addressed to the Sub-Editor, and marked on the envelope "Students' Number Only."

PUBLIC HEALTH IN JERUSALEM.

The British Consul reports that in Jerusalem in 1913 there were no serious epidemics of the nature of the dengue epidemic of 1912, but an unusual number of typhoid fever cases were treated in the hospitals in October and November, and measles prevailed towards the end of the year and was responsible, with attendant pneumonia, for a large number of deaths among infants and young children. Sporadic cases of typhus fever, meningitis, and diphtheria also occurred during the year. Of the diseases which are endemic in Jerusalem and its surroundings malaria is far the most important from its disastrous effects upon the public health, and all types of this mosquito-borne fever were abundantly present throughout the year, especially in the autumn months. Trachoma is another omnipresent scourge, and its destructive results were quite as demonstrable as in previous years, whilst ophthalmia gave rise to an epidemic period in the summer and was responsible for a good deal of permanent suffering, especially in children. Efforts to grapple with the problems of public health were made by the International Health Bureau, and useful work was done in combating malaria by the supply of prophylactic treatment in 28 Jerusalem schools; a Pasteur department has been instituted and more than 100 suspected cases from animal bites were treated; the bacteriological section was also of great use to local practitioners in helping to differentiate various diseases. This praiseworthy effort, however, lacks municipal authority and is therefore limited in scope and power, but it provides an object-lesson which the local government might well make use of in the establishment of a well-organised public health department. The population of Jerusalem is variously estimated at from 95,000 to 110,000, including 70,000 Jews, 13,000 Christians, and 12,000 Mahommedans. In spite of the emigration of many Jews to escape military service there has still been a marked increase in this section of the population on account of the continuous influx of aged Jews who come with the intention of ending their days in Palestine. The British community numbers about 350 souls, most of whom are missionaries. About 3000 tourists and pilgrims of the better class visited Jerusalem during the year ended May 31st, 1913.

THREE KINDS OF SURGEONS.

To the Editor of The Lancet.

Sir,—In the Address in Surgery before the British Medical Association at Aberdeen Sir John Bland-Sutton stated that there are two kinds of surgeons—viz., craftsmen and biologists.

But there is also a third kind, the clinical surgeon, after the manner of the late Sir John Erichsen. Technique is all very well in its place, but the simpler the better for the patient. I may here be pardoned for mentioning in this connexion that the Box tunnel, near Bath, was engineered by the pick and shovel. I am, Sir, yours faithfully,

G. P.

August 4th, 1914.

THE DISINFECTION OF SEASIDE SHELTERS.

To the Editor of The Lancet.

Sir,—It would be interesting to many people at this season of the year to learn what is the rule in the various seaside places of this country in disinfecting the shelters placed for the general accommodation of the public near the beach or on the promenades. I have just returned from one well-known resort where there are shelters used by all sorts and conditions of people, and I am informed that the shelters used to be disinfected every morning, but that they are not so treated now. Considering the use or misuse that some visitors make of these shelters it would be interesting to learn if disinfection has been found to be of advantage and if it is generally practised, and, if not, why not? For all I know it may have been abandoned for sound reasons. The year before last I was very much struck by a small shelter near a bandstand in another well known resort being constantly used by an extremely dirty and verminous-looking man with evil-smelling clothes who persisted in mingling with the well-clad visitors, much to their disgust, and on inquiry was informed that this individual was really well off and owned a house in a good road in the town and could not be turned out or made to clothe himself properly, the explanation being that he had been crossed in love in his early days and had either never troubled about his garb afterwards or else enjoyed his eccentricity or the consternation he caused to visitors.—I am, Sir, yours faithfully,

London, July 21st, 1914. PATERFAMILIAS.

CENTIGRADE AND FAHRENHEIT.

To the Editor of THE LANCET.

SIR,—Every effort is now being made to spread the use of the metric system and any little aid to the memory for this purpose is not to be despised. One simple aid in converting degrees Centigrade into Fahrenheit will be seen by looking at the face of a watch, where the X also equals 50 minutes, and remembering that likewise X degrees Centigrade equal 50 degrees Fahrenheit. Then for every extra degree Centigrade add 1·8 to the Fahrenheit. The number of extra degrees Centigrade to be multiplied by 1·8 and added to the Fahrenheit may be discovered in a simple manner. For example, it is desired to learn the equivalent in Fahrenheit of 37° C. Put down as follows :—

10° C. equal 50° F.

Difference between 10° C. and 37° C. equals 27° C., which has to be multiplied by 1·8 and added to 50° F. 27 × 1 equals 27, which add to 50, giving 77, and 27 × ·8 equals 21·6, which add, giving a total of 98·6, the number of degrees Fahrenheit. Simply :—

10° C. equals 50° F.
37° – 10° ,, 27°
27° × ·8 ,, 21·6°
Total 98·6°

I am, Sir, yours faithfully,

London, July 24th, 1914. F.

*** Our correspondent's method is ingenious, but surely not very simple.—ED. L.

HEALTH OF BARBADOS.

THE Barbados General Hospital, situated in Bridgetown, is maintained by a legislative grant and governed by a court of directors of 18 members, of whom two are life members, whereas the remainder, selected pursuant to statute, must either be Government officers or members of the legislature. With a daily average of 200 in the hospital, there were during the year 4565 admissions, 374 deaths, and 27,813 out-patients. The prescriptions prepared numbered 46,453—all these figures being in excess of those for the previous year. Considerable extensions to the buildings have been carried out, greatly increasing the accommodation hitherto provided. The new premises were formally opened by Princess Marie Louise of Schleswig-Holstein on April 28th, 1913, and her Highness graciously accepted, as a memento of the occasion, a cup bearing the following inscription :—

Ego
misericordiae dolorem levantis signo
delectus illustrissimae regiae domus
alumnae Mariae Louisae ipsi eiusdem
misericordiae exemplari hospitii
infirmis curandis in insula Barbadoe
publico sumpto sustenti et nuper aucti
nova aedificia faustis auspiciis coram
populo inauguranti ante diem iv. kal. mai.
anno salutis nostrae MCMXIII.
donatus sum.

At the lazaretto there were 15 admissions and 11 deaths, leaving 120 inmates at the end of the year. The average daily number was 118·4. The average stay of those who died was 11·1 years, and of those remaining 9·8 years. Compulsory segregation is not in force in the colony.

At the lunatic asylum the daily average number of patients fell from 420 in 1911 to 400 in 1912. Forty-four patients were discharged as cured and two as relieved. An Act entitled "The Registration of Births, Baptisms, Marriages, and Burials Amendment Act" has been passed by the legislature. It provides for the recopying of dilapidated registers, and prescribes a new form of burial certificate which will disclose whether the person buried is or is not illegitimate, thus affording evidence as to the correctness of the allegation that the percentage of deaths of illegitimate children is greater than the percentage of deaths of legitimate children.

Owing to its freedom from malaria and its excellent winter climate the island continues to be largely visited by tourists and persons in search of health. The number of tourists in 1912 was 2741, as compared with 2164 in 1911 and 644 in 1910. In addition, 3929 first-class passengers arrived in the colony. Hotel and house accommodation for the visitors is increasing.

A NOVEL PAPER ENTERTAINMENT.

AT the hospital fête held at "Riverdale," Lewisham recently in aid of the local hospitals one of the attractio was the lifting of visitors on single sheets of paper. Thi was superintended by Mr. Theo. May, whose firm, Messrs Theo. May, Limited, wholesale stationers, &c., Lewisham had given a quantity of their "Bank-Note" brown wrappin paper, an exceedingly strong paper, for the purpose. Th lifting was easily effected by placing a sheet of "D. D Imperial" paper on the ground, getting the person to b lifted to sit upon it and then passing the ends over couple of thick cornice poles. In some cases two person were lifted at the same time on one sheet, in one case n less than 361 lb. being lifted at once.

PLAGUE AND CHOLERA IN THE PHILIPPINES.

Mr. W. M. Royds, British Vice-Consul at Manila, states in hi annual report that the slight outbreak of plague whic began there in June, 1912, after complete absence fo upwards of five years, continued in a spasmodic way unt May, 1913. It then appeared to have completely died ou but in September a fatal case again occurred, this tim contracted by an American in the business district. Agai active sanitary measures and rat catching were energet cally pursued, and although one or two native case occurred subsequently before the end of the year nothin like a severe outbreak ever threatened. New house-buil ing regulations, providing rat-proofing for all new house are shortly to be put into force, and it is expected th plague will soon disappear again entirely. A few cases cholera, no case of which had been recorded since 191 occurred in August, 1913. Thereafter a few cases we notified weekly up to the end of the year, the to recorded at that time from the beginning of the outbrea being about 100.

◆

C. T.—The following books will be found useful :—"Lang German-English Dictionary of Terms Used in Medici and the Allied Sciences." Second edition. Edit and revised by Milton K. Meyers, M.D. Londo J. and A. Churchill. 1913. Price 18*s*. net. "Medic Vade-Mecum in German and English." By B. Lew London: J. and A. Churchill. 1910. Price 15*s*. ne "Dictionary of Medical Terms; English, French, a German." London: J. and A. Churchill. 1907. Pri 8*s*. net. "Pocket Medical Dictionary in Eight Languag (English, German, French, Italian, Japanese, Russia Spanish, Hungarian)." Edited by Dr. J. Meyer, Berli in collaboration with Dr. D. O'C. Finigan. 19 London : W. Lockwood and Co., 56, Charing Cross-ro and Urban and Schwarzenberg, Berlin and Vienna. 2 "'First-Aid' Vocabulary in English, French, and Germa By S. Osborn, F.R.C.S., and Albert M. Oppenheim 1908. Polyglot Printing Company, Limited, 13, Garlic hill, Queen Victoria-street, London, E.C. (Booklet issu on the occasion of the First International "First-Ai Congress.) "Terminologia Medica Polyglotta." Compil by the late Theodore Maxwell, M.D. Camb. 1890. London: J. and A. Churchill. "Dictionary of Medi Terms." Part I., English-French, 5*s*. net; Part I French-English, 4*s*. net; or two volumes in one, clo 7*s*. 6*d*. net. By H. De Meric. London: Baillière, Tind and Cox.

L.R.C.P.—We should advise anyone preparing for M.R.C.P. Lond. to take a good general text-book of me cine, such as Osler's "Principles and Practice," Taylo "Practice of Medicine," or any other text-book of simi range, and to work steadily through it, at the same ti referring to monographs on special subjects: for examp Powell and Hartley's "Diseases of the Lungs," Rollesto "Diseases of the Liver, Gall-bladder, and Bile-ducts," a so on. As an alternative, he might refer to the articles special subjects in which he found the text-book insu cient (for example, on nervous diseases) in some large w of reference such as "Allbutt and Rolleston" or "Osler a McCrae." He should also read a small text-book on pub health, keep an eye on current medical literature, and r some simple medical Latin, such as Celsus or Sydenha He is also expected to translate a small passage from eit Greek, German, or French, as well as Latin.

COMMUNICATIONS not noticed in our present issue receive attention in our next.

The following magazines, journals, &c., have been received
Edinburgh Medical Journal, St. Bartholomew's Hospital Med Journal, Medical Review, Journal of the Royal Sanitary Instit Ophthalmoscope, Birmingham Medical Review, Tempera Chronicle, St. Thomas's Hospital Gazette, Guy's Hospital Gaze Hospital Assistant, Review of Neurology and Psychiatry, Trop Diseases Bulletin, Archives Générales de Médecine, Practitio Annali dell' Istituto Maragliano, Philippine Journal of Scie Public Health.

Medical Diary for the ensuing Week.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Dr. Pritchard: Bacterial Therapy Department. Mr. B. Harman and Mr. Gibb: Eye Department.

TUESDAY.—10 A.M., Dr. Simson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Addison: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Souttar: Operations. Dr. Simson: Diseases of Women. Mr. Gibb: Diseases of the Eye.

THURSDAY.—9 A.M., Dr. Bernstein: Bacterial Therapy Department. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Mr. B. Harman: Diseases of the Eye.

FRIDAY.—10 A.M., Dr. Simson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Addison: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Eye Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Souttar: Operations.

LONDON HOSPITAL MEDICAL COLLEGE (UNIVERSITY OF LONDON), London Hospital, Mile End-road. E

Demonstrations in Clinical Medicine:—

MONDAY.—2.15 P.M., Dr. Wall: Pulmonary Tuberculosis. (Clinical Theatre.)

TUESDAY.—2.15 P.M., Dr. Grünbaum: Diseases of the Blood. (Clinical Theatre.)

WEDNESDAY.—2.15 P.M., Dr. Miller: Abdominal Diseases. (Out-patient Department.)

THURSDAY.—2.15 P.M., Dr. Thompson: Diseases of the Nervous System. (Clinical Theatre.)

FRIDAY.—2.15 P.M., Dr. L. Smith: Common Cardiac Conditions. (Clinical Theatre.)

SATURDAY.—10.15 A.M., Dr. Hutchison): Demonstrations on Selected Cases. (Wards or Clinical Theatre.)

Demonstrations on Selected Surgical Cases and on Cases of Interest in the Wards of the Hospital:—

MONDAY.—2 P.M., Mr. Milne.
TUESDAY.—2 P.M., Mr. Lett.
WEDNESDAY.—2 P.M., Mr. Howard.
THURSDAY.—2 P.M., Mr. Warren.
FRIDAY.—2 P.M., Mr. Walton.

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THE THROAT HOSPITAL, Golden-square, W.

MONDAY.—5.15 P.M., Special Demonstration of Selected Cases.
THURSDAY.—5.15 P.M., Clinical Lecture.

For further particulars of the above Lectures, &c., see Advertisement Pages.

A DIARY OF CONGRESSES.

THE following Congresses, Conferences, and Exhibitions are announced. In 1914:—

May 1st–Nov. 1st (Lyons).—International Town Hygiene Exhibition.
,, 15th–Oct. 15th (Berne).—Swiss National Exhibition.
May-October (London, Shepherd's Bush).—Anglo-American Exposition.
July-September (Australia).—Eighty-fourth Annual Meeting of the British Association for the Advancement of Science. (August 8th to 12th at Adelaide, August 13th to 19th at Melbourne, August 20th to 26th at Sydney, August 27th to Sept. 1st at Brisbane).
Aug. 2nd–10th (Paris).—Tenth Congress of Esperantists.
,, 3rd–8th (London).—Sixth International Dental Congress.
,, 29th–Sept. 14th (Toronto).—Canadian National Exhibition.
Sept. 7th–12th (Berne).—International Congress for Neurology, Psychiatry, and Psychology.

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IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. I. of 1914, which was completed with the issue of June 27th, were given in THE LANCET of July 4th.

VOLUMES AND CASES.

VOLUMES for the first half of the year 1914 are now ready. Bound in cloth, gilt lettered, price 16*s.* carriage extra.

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(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, August 5th, 1914.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
July 30	30 04	N.	...	112	69	53	51	56	Fine
,, 31	30 07	S.		103	70	56	59	62	Fine
Aug. 1	29 19	S.W.	0·27	122	78	62	62	67	Cloudy
,, 2	29 63	S.W.	0·13	115	72	60	61	64	Cloudy
,, 3	29 76	S.W.	..	109	70	57	59	60	Cloudy
,, 4	29 72	S.W.	0·03	119	70	56	58	61	Cloudy
,, 5	29·66	S.W.	...	116	68	58	53	60	Overcast

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ABSTRACT OF

A Presidential Address

ON

HEREDITY.

Delivered in Melbourne on August 14th, 1914, before the Meeting of the British Association for the Advancement of Science,

By WILLIAM BATESON, M.A., F.R.S.,
PRESIDENT OF THE ASSOCIATION.

GENTLEMEN,—I shall attempt to give the essence of the discoveries made by Mendelian or analytical methods of study and ask you to contemplate the deductions which these physiological facts suggest in application both to evolutionary theory at large and to the special case of the natural history of human society. Recognition of the significance of heredity is modern. The term itself in its scientific sense is no older than Herbert Spencer. Animals and plants are formed as pieces of living material split from the body of the parent organisms. Their powers and faculties are fixed in their physiological origin. They are the consequence of a genetic process, and yet it is only lately that this genetic process has become the subject of systematic research and experiment. The curiosity of naturalists has of course always been attracted to such problems; but that accurate knowledge of genetics is of paramount importance in any attempt to understand the nature of living things has only been realised quite lately even by naturalists, and with casual exceptions the laity still know nothing of the matter. Historians debate the past of the human species, and statesmen order its present or profess to guide its future as if the animal man, the unit of their calculations, with his vast diversity of powers, were a homogeneous material which can be multiplied like shot.

The reason for this neglect lies in ignorance and misunderstanding of the nature of variation; for not until the fact of congenital diversity is grasped, with all that it imports, does knowledge of the system of hereditary transmission stand out as a primary necessity in the construction of any theory of evolution, or any scheme of human polity.

The first full perception of the significance of variation we owe to Darwin. The present generation of evolutionists realises perhaps more fully than did the scientific world in the last century that the theory of evolution had occupied the thoughts of many and found acceptance with not a few before ever the "Origin" appeared. We have come also to the conviction that the principle of natural selection cannot have been the chief factor in delimiting the species of animals and plants, such as we now with fuller knowledge see them actually to be. We are even more sceptical as to the validity of that appeal to changes in the conditions of life as direct causes of modification, upon which latterly at all events Darwin laid much emphasis. But that he was the first to provide a body of fact demonstrating the variability of living things, whatever be its causation, can never be questioned.

[Professor Bateson, having premised that formerly it was hoped that by the simple inspection of embryological processes the modes of heredity might be ascertained and the actual mechanism by which the offspring is formed from the body of the parent be arrived at, then said that so long as no one can show consistent distinctions between the cytological characters of somatic tissues in the same individual, distinctions between the chromosomes of the various types cannot be perceived. Hence, for the old methods of attack, he said, there has been substituted the breaking up of the main problem into its parts, such analytical study being called Mendelian because Mendel was the first to apply it. He pointed out that misconception was especially brought in by describing descent in terms of blood, truer notions of genetic physiology being given by the Hebrew expression "seed."]

THE FACTORS IN THE TRANSMISSION OF CHARACTERISTICS.

The allotment of characteristics among offspring is not accomplished by the exudation of drops of a tincture representing the sum of the characteristics of the parent organism, but by a process of *cell-division*, in which numbers of these characters, or rather the elements upon which they depend, are sorted out among the resulting germ cells in an orderly fashion. What these elements, or *factors* as we call them, are we do not know. That they are in some way directly transmitted by the material of the ovum and of the spermatozoon is obvious, but it seems to me unlikely that they are in any simple or literal sense material particles. I suspect rather that their properties depend on some phenomenon of arrangement. However that may be, analytical breeding proves that it is according to the distribution of these genetic factors, to use a non-committal term, that the characters of the offspring are decided. The first business of experimental genetics is to determine their number and interactions, and then to make an analysis of the various types of life. The ordinary genealogical trees, such as those which the stud-books provide in the case of the domestic animals, or the Heralds' College provides in the case of man, tell nothing of all this. Such methods of depicting descent cannot even show the one thing they are devised to show—purity of "blood." For at last we know the physiological meaning of that expression. An organism is pure-bred when it has been formed by the union in fertilisation of two germ cells which are alike in the factors they bear; and since the factors for the several characteristics are independent of each other, this question of purity must be separately considered for each of them. A man, for example, may be pure-bred in respect of his musical ability and cross-bred in respect of the colour of his eyes or the shape of his mouth. Though we know nothing of the essential nature of these factors, we know a good deal of their powers. They may confer height, colour, shape, instincts, powers both of mind and body; indeed, so many of the attributes which animals and plants possess that we feel justified in the expectation that with continued analysis they will be proved to be responsible for most if not all of the differences by which the varying individuals of any species are distinguished from each other.

[Professor Bateson then summarised the main features of the work that has been done to show that the great differences which characterise distinct species are due generally to such independent factors, the essential principle being that an organism cannot pass on to its offspring a factor which it has not itself received in fertilisation. He proceeded:]

Parents which are both destitute of a given factor can only produce offspring equally destitute of it, and parents both pure-bred for the presence of a factor produce offspring equally pure-bred for its presence. Whereas the germ cells of the pure-bred are all alike, those of the cross-bred, owing to the union of dissimilar germ cells, are mixed in character. Each positive factor segregates from its negative opposite, so that some germ cells carry the factor and some do not. Once the factors have been identified by their effects the average composition of the several kinds of families formed from the various matings can be predicted. The body of evidence accumulated by this method of analysis is indeed very large, and progress is beginning along many novel and curious lines.

THE DOCTRINE OF SURVIVAL OF THE FITTEST.

In face of what we now know of the distribution of variability in nature the scope claimed for natural selection in determining the fixity of species must be greatly reduced. The doctrine of the survival of the fittest is undeniable so long as it is applied to the organism as a whole, but to attempt by this principle to find value in all definiteness of parts and functions, and in the name of science to see fitness everywhere is mere eighteenth century optimism. Yet it was in application to the parts, to the details of specific difference, to the spots on the peacock's tail, to the colouring of an orchid flower, and hosts of such examples, that the potency of natural selection was urged with the strongest emphasis. Shorn of these pretensions the doctrine of the survival of favoured races is a truism, helping scarcely at all to account for the diversity of species. Tolerance plays almost as considerable a part. By these admissions almost the last shred of that teleological fustian with which Victorian philosophy loved to clothe the theory of evolution is destroyed. Those who would proclaim that whatever is is right will be wise henceforth to base this faith frankly on the impregnable rock of superstition and to abstain from direct appeals to natural fact.

My predecessor said last year that in physics the age is one of rapid progress and profound scepticism. In at least as high a degree this is true of biology, and as a chief characteristic of modern evolutionary thought we must confess also to a deep but irksome humility in presence of great vital problems. Every theory of evolution must be such as to accord with the facts of physics and chemistry, a primary necessity to which our predecessors paid small heed. For them the unknown was a rich mine of possibilities on which they could freely draw. For us it is rather an impenetrable mountain out of which the truth can be chipped in rare and isolated fragments. Of the physics and chemistry of life we know next to nothing. Somehow the characters of living things are bound up in properties of colloids, and are largely determined by the chemical powers of enzymes, but the study of these classes of matter has only just begun. Living things are found by a simple experiment to have powers undreamt of, and who knows what may be behind?

THE PROBLEM OF VARIATION.

Naturally we turn aside from generalities. It is no time to discuss the origin of the mollusca or of dicotyledons, while we are not even sure how it came to pass that Primula obconica has in 25 years produced its abundant new forms almost under our eyes. Knowledge of heredity has so reacted on our conceptions of variation that very competent men are even denying that variation in the old sense is a genuine occurrence at all. Variation is postulated as the basis of all evolutionary change. Do we then as a matter of fact find in the world about us variations occurring of such a kind as to warrant faith in a contemporary progressive evolution? Till lately most of us would have said "Yes" without misgiving. We should have pointed, as Darwin did, to the immense range of diversity seen in many wild species, so commonly that the difficulty is to define the types themselves. Still more conclusive seemed the profusion of forms in the various domesticated animals and plants, most of them incapable of existing even for a generation in the wild state, and therefore fixed unquestionably by human selection. These, at least, for certain, are new forms, often distinct enough to pass for species, which have arisen by variation. But when analysis is applied to this mass of variation the matter wears a different aspect. Closely examined, what is the "variability" of wild species? What is the natural fact which is denoted by the statement that a given species exhibits much variation? Generally one of two things: either that the individuals collected in one locality differ among themselves; or perhaps more often that samples from separate localities differ from each other. As direct evidence of variation it is clearly to the first of these phenomena that we must have recourse—the heterogeneity of a population breeding together in one area. This heterogeneity may be in any degree, ranging from slight differences that systematists would disregard to a complex variability such as we find in some moths, where there is an abundance of varieties so distinct that many would be classified as specific forms but for the fact that all are freely breeding together. Naturalists formerly supposed that any of these varieties might be bred from any of the others. Just as the reader of novels is prepared to find that any kind of parents might have any kind of children in the course of the story, so was the evolutionist ready to believe that any pair of moths might produce any of the varieties included in the species. Genetic analysis has disposed of all these mistakes. We have no longer the smallest doubt that in all these examples the varieties stand in a regular descending order, and that they are simply terms in a series of combinations of factors separately transmitted, of which each may be present or absent.

The appearance of contemporary variability proves to be an illusion. Variation from step to step in the series must occur either by the addition or by the loss of a factor. Now, of the origin of new forms *by loss* there seems to me to be fairly clear evidence, but of the *contemporary acquisition* of any new factor I see no satisfactory proof, though I admit there are rare examples which may be so interpreted. We are left with a picture of variation utterly different from that which we saw at first. Variation now stands out as a definite physiological event. We have done with the notion that Darwin came latterly to favour, that large differences can arise by accumulation of small differences. Such small differences are often mere ephemeral effects of conditions of life, and as such are not transmissible; but even small differences, when truly genetic, are factorial like the larger ones, and there is not the slightest reason for supposing that they are capable of summation. As to the origin or source of these positive separable factors, we are without any indication or surmise. By their effects we know them to be definite, as definite, say, as the organisms which produce diseases; but how they arise and how they come to take part in the composition of the living creature so that when present they are treated in cell-division as constituents of the germs we cannot conjecture.

THE PART PLAYED BY CROSS-BREEDING.

[Professor Bateson then reviewed the evidence for disbelieving in the common theory that domestic animals have been developed from a few wild types. He showed that it was hopeless to reconstruct the steps in evolution of various forms of fowls from the Indian jungle fowl, while most of the new varieties of cultivated plants are, he said, the outcome of deliberate crossing, for we have full histories of these crosses in gladiolus, orchids, cineraria, begonia, calceolaria, and pelargonium. The single origins presumed for dogs, horses, cattle, sheep, poultry, wheat, oats, rice, plums, and cherries have in turn failed to stand investigation, the distinctions between the chief varieties being traceable as far back as evidence reaches.] Once it is known, he said, that the supposed intergrades are merely mongrels between the two species, the transition from one to the other is practically beyond our powers of imagination. If both these can survive, why has their common parent perished? Why when they cross do not they reconstruct it instead of producing partially sterile hybrids? When once the idea of a true-breeding—or, as we say, homozygous—type is grasped, the problem of variation becomes an insistent oppression. What can make such a type vary? We know, of course, one way by which novelty can be introduced—by crossing. Cross two well-marked varieties—for instance, of Chinese primula—each breeding true, and in the second generation by mere recombination of the various factors which the two parental types severally introduced, there will be a profusion of forms, utterly unlike each other, distinct also from the original parents. Many of these can be bred true, and if found wild would certainly be described as good species. Confronted by the difficulty I have put before you, and contemplating such amazing polymorphism in the second generation from a cross in antirrhinum, Lotsy has lately with great courage suggested to us that all variation may be due to such crossing. I do not disguise my sympathy with this effort. After the blind complacency of conventional evolutionists it is refreshing to meet so frank an acknowledgment of the hardness of the problem. Lotsy's utterance will at least do something to expose the artificiality of systematic zoology and botany. Whatever might or might not be revealed by experimental breeding, it is certain that without such tests we are merely guessing when we profess to distinguish specific limits and to declare that this is a species and that a variety. The only definable unit in classification is the homozygous form which breeds true. When we presume to say that such and such differences are trivial and such others valid, we are commonly embarking on a course for which there is no physiological warrant. Who could have foreseen that the apple and the pear—so like each other that their botanical differences are evasive—could not be crossed together, though species of antirrhinum so totally unlike each other as *majus* and *molle* can be hybridised, as Baur has shown, without a sign of impaired fertility? Jordan was perfectly right. The true-breeding forms which he distinguished in such multitudes are real entities, though the great systematists, dispensing with such laborious analysis, have pooled them into arbitrary Linnæan species, for the convenience of collectors and for the simplification of catalogues. Such pragmatical considerations may mean much in the museum, but with them the student of the physiology of variation has nothing to do. These "little species," finely cut, true-breeding, and innumerable mongrels between them, are what he finds when he examines any so-called variable type. On analysis the semblance of variability disappears, and the illusion is shown to be due to segregation and recombination of series of factors on pre-determined lines. As soon as the "little species" are separated out they are found to be fixed. In face of such a result we may well ask with Lotsy, Is there such a thing as spontaneous variation anywhere? His answer is that there is not.

VARIATION BY LOSS OF FACTOR.

Abandoning the attempt to show that positive factors can be added to the original stock, we have further to confess that we cannot often actually prove variation by loss of factor to be a real phenomenon. Lotsy doubts whether even this phenomenon occurs. The sole source of variation, in his view, is crossing. But here I think he is on unsafe ground. When a well-established variety like "Crimson King" primula, bred by Messrs. Sutton in thousands of individuals, gives off, as it did a few years since, a salmon-coloured variety, "Coral King," we might claim this as a genuine example of variation by loss. The new variety is a simple recessive. It differs from "Crimson King" only in one respect, the loss of a single colour-factor, and, of course, breeds true from its origin. To account for the appearance of such a new form by any process of crossing is exceedingly difficult. From the nature of the case there can have been no cross since "Crimson King" was established, and hence the salmon must have been concealed as a recessive from the first origin of that variety, even when it was represented by very few individuals, probably only by a single one. Surely, if any of these had been heterozygous for salmon this recessive could hardly have failed to appear during the process of self-fertilisation by which the stock would be multiplied, even though that selfing may not have been strictly carried out. Examples like this seem to me practically conclusive. They can be challenged, but not, I think, successfully. Then, again, in regard to those variations in number and division of parts which we call meristic, the reference of these to original cross-breeding is surely barred by the circumstances in which they often occur. There remain also the rare examples mentioned already in which a single wild origin may with much confidence be assumed. In spite of repeated trials, no one has yet succeeded in crossing the sweet pea with any other leguminous species. We know that early in its cultivated history it produced at least two marked varieties which I can only conceive of as spontaneously arising, though, no doubt, the profusion of forms we now have was made by the crossing of those original varieties. I mention the sweet pea thus prominently for another reason—that it introduces us to another though subsidiary form of variation, which may be described as a *fractionation* of factors. Some of my Mendelian colleagues have spoken of genetic factors as permanent and indestructible. Relative permanence in a sense they have, for they commonly come out unchanged after segregation. But I am satisfied that they may occasionally undergo a quantitative disintegration, with the consequence that varieties are produced intermediate between the integral varieties from which they were derived. These disintegrated conditions I have spoken of as subtraction—or reduction—stages. For example, the picotee sweet pea, with its purple edges, can surely be nothing but a condition produced by the factor which ordinarily makes the fully purple flower, quantitatively diminished. The pied animal, such as the Dutch rabbit, must similarly be regarded as the result of partial defect of the chromogen from which the pigment is formed, or conceivably of the factor which effects its oxidation. On such lines I think we may with great confidence interpret all these intergrading forms which breed true and are not produced by factorial interference.

THE COURSE OF EVOLUTION.

[Professor Bateson then inferred that these fractional degradations are the consequence of irregularities in segregation, and gave evidence of departures from normal regularity in the rhythms of repetition or waves of differentiation by which qualities are sorted out among parts of the body. He said that he felt no reasonable doubt that though we may have to forego a plan of variations by addition of factors, variation both by loss of factors and fractionation of factors is a genuine phenomenon of contemporary nature. If we have to dispense, as seems likely, with any addition from without, we must begin seriously to consider whether the course of evolution can at all reasonably be represented as an unpacking of an original complex which contains within itself the whole range of diversity which living things present." He propounded no theory of evolution, but pointed out that, as we have got to recognise that there has been an evolution and that somehow or other the forms of life have arisen from fewer forms, we may as well see whether we are limited to the old view that evolutionary progress is from the simple to the complex, and whether after all it is conceivable that the process was the other way about.]

We have to reverse our habitual modes of thought. At first it may seem rank absurdity to suppose that the primordial form or forms of protoplasm could have contained complexity enough to produce the divers types of life. But is it easier to imagine that these powers could have been conveyed by extrinsic additions? Of what nature could these additions be? Additions of material cannot surely be in question. We are told that salts of iron in the soil may turn a pink hydrangea blue. The iron cannot be passed on to the next generation. How can the iron multiply itself? The power to assimilate the iron is all that can be transmitted. A disease-producing organism like the pebrine of silkworms can in a very few cases be passed on through the germ cells. Such an organism can multiply and can produce its characteristic effects in the next generation. But it does not become part of the invaded host, and we cannot conceive it taking part in the geometrically ordered processes of segregation. These illustrations may seem too gross; but what refinement will meet the requirements of the problem, that the thing introduced must be, as the living organism itself is, capable of multiplication and of subordinating itself in a definite system of segregation? That which is conferred in variation must rather itself be a change, not of material, but of arrangement, or of motion. The invocation of additions extrinsic to the organism does not seriously help us to imagine how the power to change can be conferred, and if it proves that hope in that direction must be abandoned I think we lose very little. By the re-arrangement of a very moderate number of things we soon reach a number of possibilities practically infinite.

"RELEASES" OF POWERS NORMALLY SUPPRESSED.

That primordial life may have been of small dimensions need not disturb us. Quantity is of no account in these considerations. Shakespeare once existed as a speck of protoplasm not so big as a small pin's head. To this nothing was added that would not equally well have served to build up a baboon or a rat. Let us consider how far we can get by the process of removal of what we call "epistatic" factors—in other words, those that control, mask, or suppress underlying powers and faculties. I have spoken of the vast range of colours exhibited by modern sweet peas. There is no question that these have been derived from the one wild bi-colour form by a process of successive removals. When the vast range of form, size, and flavour to be found among the cultivated apples is considered, it seems difficult to suppose that all this variety is hidden in the wild crab-apple. I cannot positively assert that this is so, but I think all familiar with Mendelian analysis would agree with me that it is probable, and that the wild crab contains presumably inhibiting elements which the cultivated kinds have lost. The legend that the seedlings of cultivated apples become crabs is often repeated. After many inquiries among the raisers of apple seedlings I have never found an authentic case—once only even an alleged case—and this on inquiry proved to be unfounded. I have confidence that the artistic gifts of mankind will prove to be due, not to something added to the make-up of an ordinary man, but to the absence of factors which in the normal person inhibit the development of these gifts. They are almost beyond doubt to be looked upon as *releases* of powers normally suppressed. The instrument is there, but it is "stopped down." The scents of flowers or fruits, the finely repeated divisions that give its quality to the wool of the merino, or in an analogous case the multiplicity of quills to the tail of the fantail pigeon, are in all probability other examples of such releases. You may ask what guides us in the discrimination of the positive factors and how we can satisfy ourselves that the appearance of a quality is due to loss. It must be conceded that in these determinations we have as yet recourse only to the effects of dominance. When the tall pea is crossed with the dwarf, since the offspring is tall we say that the tall parent passed a factor into the cross-bred which makes it tall. The pure tall parent had two doses of this factor, the dwarf had none; and since the cross-bred is tall we say that one dose of the dominant tallness is enough to give the full height. The reasoning seems unanswerable. But the commoner result of crossing is the production of a form intermediate between the two pure parental types. In such examples we see clearly enough that the full parental characteristics can only appear when they are homozygous—formed from similar germ-cells, and that one dose is insufficient to produce either effect fully. When this is so we can never be sure which side is positive and which negative. Since, then, when dominance is incomplete we find ourselves in this difficulty, we perceive that the amount of the effect is our only criterion in distinguishing the positive from the negative, and when we return even to the example of the tall and lwarf peas the matter is not so certain as it seemed.

[Professor Bateson here quoted Cockerill's experinents with sunflowers, where among thousands of yellow flowers one occurred partly red, by breeding from which a form wholly red was raised, and asked if we could not interpret other apparent new dominants in the same way. The white dominant in the fowl or in the Chinese primula can inhibit colour. He asked, May it not be that the original fowl or primula had two doses of a factor which inhibited this inhibitor? In 1840 the pepper moth produced a black variety now common in certain areas and behaving as a full dominant. The pure blacks are no blacker than the cross-bred. Though at first sight it seems that the black must have been something added, we can without absurdity suggest that the normal is the term in which two doses of inhibitor are present, and that in the absence of one of them the black appears.]

SUMMARY OF DEDUCTIONS.

In spite of seeming perversity, therefore, we have to admit that there is no evolutionary change which in the present state of our knowledge we can positively declare to be not due to loss. When this has been conceded it is natural to ask whether the removal of inhibiting factors may not be invoked in alleviation of the necessity which has driven students of the domestic breeds to refer their diversities to multiple origins. Something, no doubt, is to be hoped for in that direction, but not until much better and more extensive knowledge of what variation by loss may effect in the living body can we have any real assurance that this difficulty has been obviated. We should be greatly helped by some indication as to whether the origin of life has been single or multiple. As the evidence stands at present, all that can be safely added in amplification of the evolutionary creed may be summed up in the statement that variation occurs as a definite event often producing a sensibly discontinuous result; that the succession of varieties comes to pass by the elevation and establishment of sporadic groups of individuals owing their origin to such isolated events; and that the change which we see as a nascent variation is often, perhaps always, one of loss. Modern research lends not the smallest encouragement or sanction to the view that gradual evolution occurs by the transformation of masses of individuals, though that fancy has fixed itself on popular imagination. The isolated events to which variation is due are evidently changes in the germinal tissues, probably in the manner in which they divide. It is likely that the occurrence of these variations is wholly irregular, and as to their causation we are absolutely without surmise or even plausible speculation. Distinct types once arisen, no doubt a profusion of the forms called species have been derived from them by simple crossing and subsequent recombination. New species may be now in course of creation by this means, but the limits of the process are obviously narrow. On the other hand, we see no changes in progress around us in the contemporary world which we can imagine likely to culminate in the evolution of forms distinct in the larger sense. By intercrossing dogs, jackals, and wolves new forms of these types can be made, some of which may be species, but I see no reason to think that from such material a fox could be bred in indefinite time, or that dogs could be bred from foxes.

Whether science will hereafter discover that certain groups can by peculiarities in their genetic physiology be declared to have a prerogative quality justifying their recognition as species in the old sense, and that the differences of others are of such a subordinate degree that they may in contrast be termed varieties, further genetic research alone can show. I myself anticipate that such a discovery will be made, but I cannot defend the opinion with positive conviction.

Somewhat reluctantly and rather from a sense of duty, I have devoted most of this address to the evolutionary aspects of genetic research. We cannot keep these things out of our heads, though sometimes we wish we could. The outcome, as you will have seen, is negative, destroying much that till lately passed for gospel. Destruction may be useful, but it is a low kind of work. We are just about where Boyle was in the seventeenth century. We can dispose of alchemy, but we cannot make more than a quasi-chemistry. We are awaiting our Priestley and our Mendeléeff. In truth, it is not these wider aspects of genetics that are at present our chief concern. They will come in their time. The great advances of science are made like those of evolution, not by imperceptible mass-improvement, but by the sporadic birth of penetrative genius. The journeymen follow after him, widening and clearing up, as we are doing along the track that Mendel found.

CONGENITAL ATRESIA OF THE POST-NASAL ORIFICE.[1]

BY CHARLES W. RICHARDSON, M.D.

THE occurrence of congenital obstruction to the post-nasal orifice is described by many writers as a very infrequent form of nasal deformity, but when we consider the number of cases reported one cannot but be impressed with the relative frequency of this type of nasal obstruction. Indeed, it seems to me to be one of the most frequent types of congenital malformation in the nasal chambers. To be sure, seldom does it become the fortune of a rhinologist to see more than one example of this type of malformation, and many with large experience have never seen a single case. One must also consider the possibility that many cases of this kind of deformity have been in the past, and even at the present time are unrecognised at birth as such, and when speedily dying, as a result of the obstruction to respiration, are placed under the general class of asphyxia neonatorum. If all cases of asphyxia neonatorum were properly differentiated, as they probably will be in the future, we will probably find that this form of deformity is responsible for no small proportion of these cases. As many observers have noted, the number of observed cases in children and adults has increased greatly during the past 20 years, largely due to the increased number of intelligent workers in rhinology, the more exact and thorough examination of patients, and from the knowledge more widely diffused that such a deformity may occur. The number of cases observed in the newly born has not increased in the same proportion as the cases observed later in life. I believe that this is due to the fact that the general practitioner and the obstetrician under whose observation the infants are first brought have not been sufficiently led into our confidence and taught to be on the look out for choanal obstruction when the new-born infant manifests evidences of impaired or difficult respiration. Indeed, it behoves us to be teachers as well as observers. One specialty becomes so intent upon its own line of work that it only now and then feels the touch of other specialties and the frequent interdependence of one upon the others. It is interesting to observe that this form of deformity apparently affects the female sex more frequently than the male. The relative frequency of the bilateral to the unilateral is in the proportion of 3 to 1.

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[1] A paper read before the Clinical Congress of Surgeons of North America, London, July 28th, 1914.

Congenital atresia is that form of obstruction of the post-nasal orifice that takes place in utero, the result of a misplacement or other malformation in the embryo, not in any way due to inflammatory reaction or pressure, and usually characterised by a more or less complete partition, obstructing one or both post-nasal orifices. This obstructing partition is usually complete in the choana affected, although occasionally there may be one or more minute openings by which a communication is found through the nose to the post-nasal cavity. Several cases are mentioned wherein the obstructing partition was incomplete, only the upper portion of the choanæ being closed, the obstructing partition's lower border being concaved downward, as noted in cases reported by Hopmann and Kahler. The partition is usually formed by a thin plate of bone; occasionally mixed, largely formed of bone and being completed by membrane; and infrequently being entirely membranous. In only one case, that reported by Onodi, does cartilage seem to have entered partially in the formation of the partition. The partition, when formed by an osseous plate, is usually lined on its nasal facies by the characteristic mucous membrane of the nasal cavity, and on its pharyngeal surface by the mucous membrane which is common to this cavity. The histological examination, as made by Hochheim, is as follows: "In structure it [the bone] corresponded to the hard palate. It consisted as the hard palate of a centrally placed plate of bone, which on the one surface was lined with muco-periosteum corresponding to that of the nasal cavity, and on the other of the muco-periosteum corresponding to the post-nasal cavity modified in the respect that in this are found mucous glands, and the epithelia are columnar instead of flat epithelia." The plate, when osseous, is more or less vertically placed, with a concavity looking towards the pharyngeal cavity; thicker in its outer portion, and presenting a more or less slight groove on its pharyngeal surface, which is internal to the middle line and near unto its attachment to the vomerian border. The osseous partitions are usually contiguous with the line of the posterior borders of the horizontal and vertical plate of the palate bone, and attached internally to the vomer and above to the body of the sphenoid so as to be placed a millimetre or more within the free border of the vomer. The membranous partitions proceed from the upper surface of the soft palate upward and slightly backward to the roof of the pharynx.

It hardly seems necessary at this day when so many undoubted cases of congenital choanal obstruction have been reported to defend the possibility of such a condition existing or defending the position that the greater majority of cases, discovered many years after birth, are of congenital origin. There is no possibility of doubt. In the first place we have the observation made on fœtuses, both in the human and animals. To Otto (1830) belongs the honour of having first described the occurrence of an osseous post-nasal obstruction in a human fœtus. We have also the interesting case reported by Luschka (1858) in a stillborn female child; the 7-months-old fœtus reported by Bitot (1876); and the miscarriage reported by Gross (1875) of a membranous closure of the choana. We have also the undoubted cases observed at birth in living normal children—Ronaldson (1881), Solis-Cohen (1879), Texier (1906), Malcolm Mackey (1908), and Richardson (1913). Added to these, we have three cases observed shortly after birth: Eduard Richter (1901), 6-weeks-old child, unilateral; Brunk (1909), 11 weeks old; and Göz (1913), 3 months old when brought under observation.

In considering the pathogenesis of the congenital occlusion of the posterior nares we have several views to consider, no one of which can we unconditionally accept. Not until we have sufficient post-mortem material upon which thorough and painstaking dissections are made can this question be thoroughly and scientifically adjusted. From a theoretical point of view one would be inclined to accept each one as probably explaining a certain proportion of the various types of deformity which are manifested.

1. Luschka considers the obstructing plate to be a projection upward and backward of the horizontal plate of the palate bone. He states: "In this case the bony framework was formed by the palate bones on both sides. The posterior, free, and concave border of the horizontal plate was continued in a somewhat oblique direction upward and backward to the lower surface of the body of the sphenoid bone, being attached to the latter by a serrated edge. Latterly, the bony plate reached the under side of the lamina interna of the pterygoid process. In the median line the lamella joined its fellow of the other side at the point where the posterior nasal spine usually rises, while the two, in their further progress upwards, were separated by a narrow slit, into which the lower extremity of the rudimentary vomer had penetrated."

2. The Kundrat theory that the obstruction is due to an extension inward of the vertical plates of the palate bones. According to this view, the vertical plates of the palate extend inward until they reach the inner wall of the choanal orifice, and, when occurring bilaterally, they unite with their fellow of the opposite side, the vomer being received between the two plates.

3. According to Hopmann, the choanal obstruction is an extreme degree of the occasionally observed choanal asymmetry. The narrow groove which is often seen on the posterior surface of the diaphragm is the remaining evidence of the originally existing post-nasal orifice. The infant which I had under observation, and upon whom I operated with complete relief when it was 15 months old, seemed, through post-nasal examination, as well as from the showing at operation, to have this pathogenesis. On digital exploration of the post-nasal cavity, its anterior surface, the nasal, seemed perfectly plain. There was not the slightest indentation to indicate the existence of the choanal orifices, nor was there the slightest elevation in the middle line to indicate the posterior free border of the vomer. In using the chisel in opening up the cavity we found the chisel penetrated along the

septum nearly half a centimetre before it entered into the pharyngeal cavity.

4. The opinion advanced by Bitot that the plate forming the partition is a separate, independent bone, as indicated by the separate sutures evidenced therein.

When we consider the embryology of the nose we note certain factors that may aid us in the probable conclusion as to the method of the occurrence of this form of deformity. Before the end of the third week of intra-uterine life the olfactory plates appear as localised thickenings of the ectoderm. With the rapid outgrowth of the surrounding tissue the nasal pits are formed by the depression of the olfactory plates. Projecting downward and forward from the ventral wall of the primary forebrain vesicle we have the naso-frontal process, a localised thickening of mesodermic tissue, which subsequently enters into the formation of the septum narium. During the fifth week the lateral margins of the naso-frontal process thicken greatly and thus form the globular processes. At the same time we have budding out upon the naso-frontal processes the lateral nasal processes, one on each side, which, growing downward, form the external boundary of each nasal pit. Thus each nasal pit is bounded on its inner border by the globular process and its outer wall by the lateral nasal process. We find at this period that the nasal pit has a well-defined border, except below, where it is directly continuous with the buccal cavity. About the sixth week the coalescing of the naso-frontal process, the united maxillary, and lateral nasal process results in the division between the oral fossa and the nasal pits, thus forming, though yet crudely, the external nose and upper lip. The orifices of the nasal pits form the anterior nares, the nasal pits themselves forming a narrow canal which opens into the primitive mouth cavity above the palatal shelves. The naso-frontal process, which is still very broad, subsequently becomes narrow, and that portion which separates the nares enters into the formation of the septum. Extending from the inner surface of the maxillary process, two new processes, the palatine shelves, extend inward toward each other and, coalescing, form the palate. At the time of the development of the nose the primitive oral cavity is separated from the gut-tract by the "pharyngeal membrane," the *rachen-haut*. At some time during the fourth week this membrane is absorbed, thus bringing the oral cavity into communication with the upper end of the gut-tract. It is difficult to determine the exact location of the pharyngeal membrane with the adult pharynx; it is certain, however, that the primitive mouth includes, besides the adult buccal cavity, the anterior part of the adult pharynx. Such being the case, how possible it is that the absorption of the pharyngeal membrane may be so delayed in a certain proportion of cases until the separation of the nasal from the primitive oral cavity has transpired, when thereafter only that portion of the pharyngeal membrane is absorbed which corresponds to the oral cavity, while that which corresponds to the anterior pharyngeal wall remains unabsorbed. It is also possible that embryonal activity at the juncture of the various processes that enter into the formation of the nasal chambers may result in over-production of tissue, which results in the closure of the choanal orifice.

There are only two classifications to congenital choanal obstruction which seem worthy of consideration, one made by E. Kayser and the other by Schwendt. That given by Kayser seems to be more scientific than the one made by Schwendt. Kayser divides the deformity into three groups. 1. Intranasal atresia of the choanæ. In this group are included all those cases which are formed of a thin plate of bone, bone and membrane, or membrane which lie within the nasal cavity within a millimetre or so from the free border of the choanæ, either unilateral or bilateral, and which from a post-rhinoscopic view show the free border of the choanæ and the vomer. 2. Marginal atresia of the choanæ. In this form we have those cases in which there is a union of the choanal border or the union of the palate bone with the vomer. 3. Extranasal or retronasal atresia of the choanæ. This includes all of those cases without the nasal cavities, practically in the naso-pharynx, although immediately behind the choanæ. This class takes care of the purely membranous type, first described by O. Chiari, and whence Schwendt maintains its congenital origin from the fact that they contain, besides connective tissue, muscular fibres. Schwendt divides post-nasal obstructions into two classes: (1) The typical, under which are grouped practically all those cases which are described by Kayser as intranasal; and (2) the atypical, which includes all other manifestations of choanal obstruction of congenital nature. The Schwendt classifications seem to be most acceptable to the Germans, and are adhered to by Kahler, Haag, and others.

Symptoms of congenital choanal obstruction may be divided into those as manifested in the new-born child and those existing in patients observed first at later periods in life.

In the new-born child with bilateral obstruction the all-pervading symptom is the abolition of nasal breathing, with the train of symptoms produced thereby. Mouth breathing is an acquired habit. The infant at birth will suffocate unless it voluntarily acquires or is taught the function of breathing through the mouth when the nasal cavities are rigidly and continuously obstructed. The infant, not being able to breathe through the nose, becomes rapidly cyanosed until the discomfort is so great as to cause it to cry when the air hunger is relieved through the momentarily-established mouth-breathing, and the thus threatening asphyxia is relieved. As the relief comes through mouth-breathing the child ceases to cry, and there are a few seconds of quietude, when the desire for air again becomes rapidly great, the lips are drawn tight and cheeks drawn in, and then a struggle results, as is usually manifested by one who is suffering greatly for the want of air, the face becoming more and more cyanosed, when the child again breaks out with a lusty cry, which relieves again the threatening asphyxia through mouth-inhaling of air. There is a constant repetition of this cycle, unless constant relief through mouth-breathing is brought about by slightly depressing the lower jaw and maintaining an opening between the lips for continuous mouth-breathing. The struggle for breath is so great as to make it impossible for the infant to take the breast or bottle, which makes the nourishing of the infant a serious problem. The nasal cavities are filled by a thick, gelatinous, clear mucus. The normal status of the lower air tract is demonstrated by the speedy relief of symptoms through mouth-breathing. Kayser states that the infant is more comfortable when not in a recumbent position, but such was not the case with the infant which was under my observation. Post-digital exploration in a new-born infant is practically impossible. Irrigation of the nasal cavity with an eye dropper will demonstrate that no fluid passes into the pharynx, but returns through the anterior nares as the chamber becomes filled with the fluid. Sounding with the probe will demonstrate the existence of the obstruction, its position and nature.

In older children and adults with congenital choanal obstruction the absence of nasal respiration is the pronounced symptom. In bilateral obstruction this is complete; in unilateral obstruction incomplete and limited to the side affected. In bilateral obstruction a history is given of infantile difficulty in breathing, difficulty in respiration, and the great difficulty in maintaining nutrition in infancy on account of the inability to take the breast or suck from a bottle, the infant usually being brought up through the medium of the spoon.

The obstructed nasal chamber is always filled with a thick albuminous mucus. This condition is so generally remarked by all observers that it might be stated as a constant evidence of choanal obstruction. Kahler states that this form of secretion he has never seen in any other form of nasal disease. Indeed, when the obstruction is unilateral the patient is hardly conscious of the condition, especially when young, but the parents are greatly annoyed by this outflow of nasal secretion. Eczema of the alæ and upper lip is often caused thereby. On account of the inability of the tears to pass into the pharynx they also flow out of the anterior nares during crying. The secretion within the nasal chamber must either be mopped out or removed through syringing. From obstruction to the expiration through the nose the effort at sneezing is impossible. Where complete obstruction exists there is absolute loss of the sense of smell; when unilateral, this function is only impaired in the side obstructed. It is interesting to note that many operators refer to the restoration of the sense of smell immediately after the opening of the nasal chamber. The correlated sense of taste is not always in complete abeyance; many observers state that the sense of taste is fairly maintained in bilateral and frequently not altered in unilateral obstruction. More or less involvement of the middle ear is noted, although a number of cases have been observed in which there was no involvement of the auditory apparatus. The moderately separated lips are quite as characteristic of this condition as of the other condition with obstruction to nasal respiration. The alteration of the voice is another very characteristic symptom. The voice is nasal in character and presents the usual peculiarity common to nasal obstructions, however produced. Like unto other forms of nasal obstruction, it is more marked in its alteration in some patients than in others.

The facial appearance does not show the changes which are usually manifested so markedly in other forms of nasal obstruction. The naso-labial folds are not pronouncedly drawn, nor is the mouth widely agap. Several observers have noted asymmetry of the face, but this is not a constant factor in unilateral choanal obstruction. Thirteen observations of want of symmetry have been noted in 100 cases. Haag contends that the unilateral nasal breathing does not produce asymmetry of the face, and avers that as such an asymmetry occurred in only a few cases of unilateral nasal obstruction, and as there occurred unilateral asymmetry in one of his cases with bilateral obstruction, the asymmetry does not ensue as a result of the unilateral obstruction, but as a result of the same fœtal condition that produced the choanal deformity.

The alteration of the plane of the hard palate is so infrequently indicated by writers as to render it impossible for us to give any definite conclusion with regard to this deformity's influence upon the normal plane of the hard palate. Haag was the first to make accurate measurements to show the relative position of the hard palate in cases of congenital post-nasal obstruction to the normal standard. Since his observation attention has been more definitely drawn to the influence of this deformity on the arching of the hard palate, and it is to be hoped that through this means some definite idea with regard to the influence of mouth-breathing upon the abnormal high arching of the palate may be obtained. According to Haag, in the 68 cases which he gathered from the literature, in only 21 was there any mention of the form of the hard palate. In 15 cases the arching of the palate was high; in the other six it was normal. All three of Haag's cases show abnormally high, or V-shaped, hard palates. Kahler and Johann Lang have also made accurate measurements, but few others of the observers since Haag's able exposition of the form of the hard palate in connexion with this deformity have more than mentioned the fact as to its form. In all of Kahler's nine cases was there noted an abnormally high-arched palate, one of which was bilateral and the others unilateral. Johann Lang's six cases presented high-arched palates, three of which appeared in Professor Kaufman's clinic and three under his own observation. The consideration of this subject naturally brings up the controversy of the influence of the mouth-breathing on the formation of the hard palate. It is unnecessary to enter nearer into the discussion than to state that, so far as can be seen, there is nothing further developed in this rather academic dispute than a demonstration that, up to the present writing, there is apparently insufficient proof to support either the views of Waldow-Koerner, Ziem, Siebenman, or Hopmann. We have all noted high-arched palates with broad faces in nasal obstruction (chamæprosop) and high-arched palates without nasal obstruction in long-faced individuals (leptoprosop), and the reverse of this condition. There is no doubt that nasal obstruction and the formation of the face have both an influence on the development of the hard palate. In all the cases of congenital bilateral obstruction seen at birth, wherein the form of the hard palate is mentioned, Ronaldson and Texier, it was noted to be normal, and such was the condition in the case which was under my observation. These cases would seem to lend weight to the contention that any alteration in the form of the hard palate, if such were to take place, must occur after birth and be influenced to a certain degree by the method of breathing.

Examination reveals usually a widening of the nasal chambers. In unilateral cases the septum is frequently, not always, deflected towards the obstructed side. The nasal mucous membrane is sodden, paler than normal, and moderately atrophic. As would be expected in a mucosa constantly bathed in secretions, so do we observe frequently a polypoid formation, and more particularly sessilated and pedunculated hypertrophies of the inferior turbinates. As Kayser states, a true atrophic rhinitis has never been noted as occurring in this condition, excepting, possibly, the case mentioned by Kahler as occurring in a partial unilateral obstruction.

In infants the tendency to develop marasmus through deficiency, or inability to maintain nutrition, is very great. In older children and adults there are practically no general symptoms of moment that can be directly traceable to the deformity. It is singular how asthma is practically an unmentioned symptom. Difficult respiration is always manifested, more marked in the bilateral than in the unilateral cases, under stress of physical effort. Unilateral sweating has been noted by several observers. This condition must be differentiated from adenoids, syphilitic rhinitis with adhesion, simple inflammatory adhesion, foreign bodies, retropharyngeal tumours, retropharyngeal abscess, and intranasal tumours.

It is interesting to note that Johann Lang attempts to prove the hereditary nature of this disturbance without any facts to substantiate his contention. Most writers refer to the absence of heredity directly, and others in an indirect way. Lang saw several cases in the one family, and went so far as to include a deceased child, whom he had never seen, and, from this one occurrence, deduced the hereditary nature of the deformity.

The diagnosis of this condition is not attended with any difficulty if one only had the thought of the disturbance in mind. In infants we have the difficult breathing, the cyanosis with threatened asphyxia, the characteristic struggling child with tightly drawn lips and indrawn cheeks, relieved, at last, from its impending suffocation by a crying spell; the constant repetition of this cycle. The older child and adult give the history of not breathing through the nose, unilateral or bilateral, since birth; the extreme difficulty of rearing the child on account of the problem of feeding. The excessive and annoying thick, clear, albuminous-like mucus secretion is almost pathognomonic of congenital post-nasal obstruction. In infants and adults the impermeability of the post-nasal cavities from the nasal chambers can be readily demonstrated by gently douching through the anterior nares. Then by palpating with a probe through the anterior nares do we not only localise the seat of the obstruction, but also its probable character.

The hard, firm resistancy of bone can readily be differentiated from the soft, less resistant sensation imparted by the soft tissue. Indeed, through even the mucous membrane covered bone can, by palpation, a distinct click be heard, even recognised by the patient. Through anterior and posterior rhinoscopy, post-nasal digital exploration and trans-illumination, we obtain additional information as to the condition of the nasal chambers; the location of the obstruction; the character and presence of secretion; the appearance of both surface of the obstruction and its probable thickness; its relation to the post-nasal orifice and the vomer edge; the appearance of the post-nasal cavity; and the sensation imparted by the location, position, attachment, and touch of the obstruction. It is to be advisedly borne in mind that digital exploration in new-born infants can not be resorted to with the expectation of obtaining any information from the procedure.

The prognosis in the older child, who has passed through the suckling period, is extremely favourable as to the probable result of operative intervention.

The prognosis of the new-born child is distinctly a problem of life or death. The important problem which presents itself here is as to whether it is better to attempt expectant treatment or resort to an immediate operation. Through the expectant treatment we aim for the establishment of artificial mouth-breathing and the proper nutrition of the infant who is unable to take nourishment in the normal manner. Expectant treatment should never be attempted unless the parents are intelligent, willing to make the sacrifice of time, effort, and want of rest, and have a sufficient number of intelligent, painstaking assistants. The infant must also be a well-nourished, strong, and healthy child From its birth, or as soon thereafter as its condition is properly diagnosed, the infant should not be allowed to have any attacks of asphyxiation, nor even the slightest want of air, except when feeding, and even then with care this may be avoided. This is accomplished by constantly holding the lower jaw slightly depressed by pressing slightly on the chin. This procedure requires some one quite alert to be constantly with the infant.

The feeding must be resorted to through the medium of a spoon. It is remarkable how quickly the child learns voluntarily to establish mouth-breathing within ten days, and also learns to suck from a bottle within three weeks. Should rapid loss of weight or other evidences of inanition be manifested the operative procedure should immediately be instituted. In favour of the expectant treatment is the possibility of establishing artificial mouth-breathing and nutrition with intelligent care, as was so perfectly demonstrated in my case. The number of cases of bilateral obstruction first discovered in childhood or adult life also demonstrated the fact that a number pass through the suckling period even without the intelligent attention which could only come through appreciation of the condition that exists. Also as favourable to the expectant treatment must we consider the danger of operation through shock and fever to a new-born infant and the possible complications. Also one must take into consideration the small size of the naso-pharynx; the softness of the post-nasal tissue; the difference between their conformation as we are most accustomed to find them later in life; the inability to use the index finger in the post-nasal cavity as a guide; the danger of injuring adjacent important structures in the actual operation; and the possible great difficulty in maintaining the good result of the operation on account of the smallness of the cavities and the tender age of the patient. The factors in favour of the operation, should it be successful, are the immediate relief to the sufferer, its ability to breathe and take nourishment normally almost immediately thereafter, and the great pleasure to the parents. Indeed, it is impossible to judge, in a general way, the best course to pursue with regard to the little ones; much discretion and good judgment in considering the individual case are essential in coming to a conclusion as to the best course to pursue. Should operative intervention be delayed and the progress of the infant satisfactory, the period of election for the operation is to be considered. Other things being equal, that period should be selected when the pharynx is sufficiently well developed to permit of easy manipulation with the guiding finger in the naso-pharynx. The naso-pharynx is usually sufficiently well developed to permit of easy finger manipulation about the ninth month of life; the operation, therefore, should be done as soon after this period as practicable.

In the older child and adults, as in the infant, the only procedure that offers any relief is operative intervention. To Emmert belongs the honour of first operating on a case of congenital nasal obstruction (1854). Various operative procedures have been suggested and done for the relief of this deformity. In a general way that procedure is best which is accompanied by the least injury and accomplishes the result most thoroughly. Borders should be given as widely separated and as smooth as possible so as to offer the least tendency to the development of excessive granulation. It is far better to conduct the operation under general anæsthesia. The use of reflected light is also advisable. Voltoline, Schroeter, and others have used the galvano-cautery. Emmert and others have resorted to the use of the curved trocar. T. B. Wilkinson invented an ingenious revolving trocar, worked by hand, with which he bored through the obstruction. Trephines and various types of drills driven by electro-motors have also been used for this purpose. The chisel to penetrate the plate along the line of attachment of the vomer and the various forms of conchotomes to remove the remaining portion of the obstructing plate seem to me the ideal methods of dealing with the condition under consideration. This procedure should be done with the finger in the naso-pharynx as a protector and guide. The method of operative procedure suggested by Uffenorde seems to be ideal. In this operation the muco-periosteum is raised on the septum down to the obstructing plate, from whose anterior surface it is gradually separated until its outer border of attachment is reached. The flap is then thrown well outward and the bone plate is removed by chisels and conchotomes. After the bone partition is thoroughly removed, the flap is replaced, and an incision is made vertically through the middle of the muco-periosteal flap which covered the nasal surface of the obstructing plate. Expanding forceps are now introduced and the redundant muco-periosteal flap is made to co-apt and cover the whole margin of the bone wound. A light packing maintained for 24 hours is sufficient to insure complete union. The danger of hæmorrhage is not very great if due care be exercised in performing the operation. Most operators refer to the moderate hæmorrhage which occurred in doing the operation. The after-treatment may or may not be tedious, according to whether there is sufficient space gained to prevent the tendency to closure of the artificial opening made and whether there is an active tendency to the development of exuberant granulations. Moderate packing has to be maintained for a few days and thereafter the careful watching of the case and the resorting to those methods necessary to prevent the recurrence of the closure and repress excessive granulation.

Washington, D.C., U.S.A.

METROPOLITAN ASYLUMS BOARD: INSTRUCTION IN HOSPITAL ADMINISTRATION.—A three months' course of lectures and demonstrations in hospital administration will be given at the North-Western Hospital by Dr. J. MacCombie, and at Grove Hospital by Dr. J. E. Beggs on Mondays and Thursdays at 5 P.M., beginning Monday, Oct. 5th. Medical men desiring to attend should apply to the clerk to the Metropolitan Asylums Board, Embankment, E.C.

PREGNANCY COMPLICATED BY SEVERE MORBUS CORDIS:

TWO CASES TREATED BY HYSTEROTOMY UNDER SPINAL ANÆSTHESIA.

BY J. BRIGHT BANISTER, M.A., M.D. CANTAB., F.R.C.S.E., M.R.C.P. LOND.,
PHYSICIAN TO OUT-PATIENTS, QUEEN CHARLOTTE'S HOSPITAL; SURGEON TO OUT-PATIENTS, CHELSEA HOSPITAL FOR WOMEN; ASSISTANT GYNÆCOLOGIST, TOTTENHAM HOSPITAL.

THESE two cases are recorded in order to supplement the cases published by Dr. J. D. Barris in the Proceedings of the Royal Society of Medicine, April, 1914. The histories are as follows:—

CASE 1.—The patient, a primigravida, aged 21, was seen in consultation on March 10th, 1911. She was four months pregnant, and had two years previously had a severe attack of rheumatic fever, subsequent to which she developed a mitral stenosis. She had been very unwell since the sixth week of pregnancy. There had been very severe vomiting, coupled with dyspnœa and œdema. She had been kept at rest and treated by the usual cardiac tonics, but reaction had been unsatisfactory. When I saw her she was very cyanosed and dyspnœic, her pulse was 124 and irregular, with the galloping rhythm characteristic of marked failure of compensation. Her temperature was 101·6° F. Examination revealed a normal four months pregnant uterus. The heart was markedly dilated, weak irregular sounds with no definite murmur to be heard, but a very definite thrill over the whole præcordium. There were moist sounds over both lungs, and the base on either side was dull as far as the angle of the scapula. There was no sign of free fluid in the abdomen, but the back and the legs as far as the knees were œdematous. As the patient was in a desperate state, had not responded to medical treatment, and was further handicapped in her fight for life by the continued vomiting, it was at once decided to empty the uterus, and as her general condition precluded any inhalation anæsthesia it was thought that the spinal method should be adopted. Accordingly, using Barker's heavy solution of stovaine, I produced anæsthesia in this way and emptied the uterus by vaginal hysterotomy. The operation was easy of accomplishment and was carried out fairly rapidly without the patient showing any sign of shock. The bleeding was but trifling; indeed, having regard to the condition of the patient's right heart I could have wished for more. Unfortunately, the œdema of the lungs progressed and she died the next day. No necropsy was obtained.

CASE 2.—The patient, a 5-gravida, was sent by Mr. A. E. Tughan to me at the Tottenham Hospital. She had had attacks of failure of compensation with the last three pregnancies, and extremely trying confinements, and came up in the fifth month of the present pregnancy in a condition of marked severity. The face was cyanosed, breathing was only comfortable when she was sitting up, and she had a distressing cough. The pulse was 118, weak and irregular; temperature 97·6° F. The apex beat was in the seventh space four and a half inches from the mid-sternum, and the heart's sounds were weak and flapping in character. There was no murmur. She was transferred to Queen Charlotte's Hospital, where she improved rapidly under the care of Dr. R. D. Maxwell. During the next three and a half months she was three times admitted in the same condition but improved under treatment. A week before term she came to see me again in a very distressing condition. The symptoms of cardiac failure were all very marked, and she was again sent to Queen Charlotte's, where, by the kindness of my colleague Dr. T. G. Stevens I was allowed to continue the management of the case. The question of treatment was not very easy to settle, but I decided upon Cæsarean section under spinal anæsthesia for the following reasons: (1) Cæsarean section was the quickest method of delivery and the one which would throw least strain upon her already enfeebled heart; (2) sterilisation could be carried out and further risks of child-bearing avoided; and (3) as her cardiac condition seemed to be one of general myocardial degeneration a general anæsthetic was to my mind absolutely contra-indicated. This was carried out on March 10th, 1914, Mr. Kenneth Lees very kindly carrying out the anæsthesia for me. A preliminary injection of morphia gr. 1/4, atropine gr. 1/150, and hyoscine gr. 1/150 seemed to have removed all apprehension from the patient's mind, and she stood the operation extremely well. Sterilisation was to have been effected by excising an inch of the tubes and turning in the ends between the layers of the broad ligament, but this caused very profuse hæmorrhage on the right side, so that the tube and ovary were removed. The left side was treated as intended. The patient got up on the fourteenth day, and left hospital on the twentieth with her baby, both in good health.

In this latter case the decision was difficult, the alternative procedure being the induction of labour and the instrumental delivery as soon as practicable. This method would still have left her liable to future pregnancies with their attendant risks, and had sterilisation been carried out at a later date another operation would have been necessary. Personally, I feel strongly that these patients with marked cardiac lesions should not be allowed to incur the risks of repeated pregnancies, as increasing experience has convinced me that though the immediate danger is not excessive their expectation of life is materially shortened by the strain of repeated pregnancies. In the combination of spinal anæsthesia and hysterotomy, vaginal up to the twenty-fourth week, abdominal at a later date, I feel we have a method of treatment for these cases which is both rapid and efficient, and at least worthy of consideration.

Wimpole-street, W.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A NOTE ON ADRENALIN CHLORIDE IN THE TREATMENT OF SPASMODIC ASTHMA.

BY HAROLD W. L. WALLER, M.B., CH.B. LIVERP.

THE following notes may be useful as supplementing Dr. W. Miller's experiences with adrenalin, as related in THE LANCET of July 18th (p. 158). I have employed hypodermic injections of adrenalin chloride in cases of spasmodic asthma for the last five years, having been led to adopt the treatment by the perusal of an article in an American medical journal. The preparation used has been Parke, Davis, and Co.'s solution of 1 in 1000, with 0·5 per cent. chloretone, in doses of 5 or 6 minims to begin with, never more, and these doses have never been followed by any untoward consequences; on the contrary, the relief to the patient has invariably been prompt, grateful, and in many instances lasting. The American writer of the above-mentioned article put forward as an additional recommendation the fact that in using adrenalin in this complaint smaller and smaller doses would be found efficacious, instead of increasingly larger administrations as might be expected. This statement has been fully supported in my experience, and even such a minute dose as 1 minim diluted with water has been successful in promptly cutting short an attack in a chronic case.

During the last five years I have had the opportunity of closely observing the effect of the drug hypodermically administered to a chronic asthmatic, a professional gentleman 40 years of age. Until adrenalin was tried in the spasm nothing gave him relief, even morphia itself proving unsatisfactory. The benefit obtained by him is invariably immediate, although I can confirm Dr. Miller's observations as to the patient's pallor and the smallness, rapidity, and slight irregularity of the pulse for a few minutes immediately after the injection. The patient's own description of his sensations is that he feels "a little cold and inclined to shiver, somewhat shaky in the knees, and a peculiar empty feeling in the chest." These soon pass off, and the dominant sensations then are a delightful sense of relief from the dyspnœa and a desire for sleep. The sleep is always light, refreshing, and dreamless, and I have never known it followed by undesirable or unpleasant consequences. This patient has been free of his ailment for weeks and months at a time. Occasionally during a bout I have had to give him two injections in the 24 hours, but I have always been able to decrease the dose, and have never given him more than 6 minims or less than 2. It is now more than six months since he has had the slightest return of his trouble, or has received or required an injection.

I am aware that the continuous administration of large doses of suprarenal extract is followed in animals by arterio-sclerotic changes; but the amount of the gland extract injected in the above doses being so infinitesimal this objection cannot, I think, be urged against its employment in asthma. I have always injected the preparation subcutaneously, never intravenously, and I have never found that any benefit was to be obtained by even quite large doses given by the mouth.

Bakewell.

A CASE OF SURGICAL EMPHYSEMA COMPLICATING LABOUR.

BY EDWARD SMEED, M.R.C.S. ENG., L.R.C.P. LOND.,
RESIDENT MEDICAL OFFICER, QUEEN CHARLOTTE'S HOSPITAL.

THE following case is of some interest owing to its rarity.

The patient, a primipara, aged 22, was admitted in the first stage of labour to this hospital on June 17th, 1914, under the care of Dr. A. F. Stabb. The position of the child was left occipito-anterior and the measurements of the pelvis were normal. Two hours after the commencement of the second stage of labour, during which the pains had been strong and frequent, it was noticed that there was an increasing œdema of the right side of the neck and face; this was so marked around the eye that the patient was unable to see; there was also commencing œdema on the opposite side of the face. The œdema on palpation gave the typical eggshell crackling. Chloroform was at once administered, and the head being on the perineum the patient was delivered by means of pressure on the fundus. Till the patient was fully anæsthetised the œdema continued to increase on both sides. After delivery the œdema was found to extend over the entire length of the sternum and to pass upwards over both clavicles to the tissues of the neck and face. During convalescence in the hospital the œdema rapidly diminished, and on departure 12 days later nothing abnormal could be detected. There was no history of tubercle in the patient's family or past history, and there was never any evidence of pneumothorax.

Sir Francis H. Champneys[1] states that the emphysema in these cases is due to rupture of an air vesicle on the anterior surface of the root of the lung, the air escaping under the pleura into the anterior mediastinum, and then up beneath the cervical fascia to the neck and chest. In this case the rupture of the vesicle must have been due to the vigorous straining efforts of the patient during the second stage of labour, although the baby was of average size, weighing 7¼ lb. I am indebted to the courtesy of Dr. Stabb for permission to publish this case.

Reviews and Notices of Books.

Manuel Pratique de Diagnostic Bactériologique et de Technique Appliqués à la Détermination des Bactéries.

Par R. LE BLAYE, Ancien Interne des Hôpitaux de Paris, Professeur Suppléant et Chef des Travaux de Bactériologie à l'Ecole de Médecine de Poitiers, et H. GUGGENHEIM, Ancien Interne des Hôpitaux de Paris. Paris: Vigot Frères. 1914. Pp. 444. Price 8 francs.

THIRTY years ago (1885) Eisenberg's "Bakteriologische Diagnostik" made its appearance. This was the first attempt to tabulate the then described bacteria according to their morphology and chief cultural characters, in such a manner that by a process of elimination a newly isolated bacterium could be tracked down, and if not absolutely identified, at least referred to a group of obviously closely related species. Seventeen years later Matzuschita published under a similar title a detailed catalogue of more than 1300 known species of bacteria (reviewed in THE LANCET, 1902, vol. ii., p. 936), to which was appended a synoptical key, which served a similar purpose. From both these works, though the details they supplied were scanty, past generations of students of bacteriology have obtained much assistance. But in the last decade vast strides have been made, new methods of investigation have been introduced, and a large number of facts, particularly those relating to the biochemistry of bacteria, have accumulated, by the help of which closely allied micro-organisms have been differentiated and the processes of identification of bacteria, though perhaps rendered more laborious, have certainly become more exact and reliable.

The present authors, premising that the recognition and identification of an organism, when isolated, may present difficulties, even to the expert bacteriologist—a self-evident truth that none will gainsay—and may be next to impossible to the tyro, have endeavoured to fill the gap in bacteriological literature left vacant by the superannuation of the two volumes previously mentioned, and have compiled a series of analytical tables, which cannot fail to be of service to the working bacteriologist, and which we trust will go far to prevent the multiplication of synonyms by the rediscovery of previously described bacteria.

The general plan of the book is simple and logical. In the introductory section the authors discuss the scheme of study upon which bacteriological differentiation should be based, and here they rightly emphasise the pleomorphism of bacteria under varying conditions of environment, and dictate those observations calculated to yield the data essential for identification. In the second part, they detail the technique to be followed in accumulating such data, the media to be employed, and the method of their preparation, the methods of isolation and of staining, the study of the metabolic products formed during the growth of bacteria in artificial culture, the methods of animal inoculation and the diagnostic value of the results obtained, and the study of specific antibodies.

In the third part, which forms the *raison d'être* of the work, is set out a series of eight tables (A–H) similar to those employed in analytical chemistry for the identification of an unknown salt, in which bacteria are grouped under the broad general heading of facultative and obligate anaerobes, and under such suitable sub-divisions as are rendered possible by the existence or absence of liquefying ferments for agar and gelatine, and the possession or otherwise of chromogenetic powers. Following on this preliminary sorting out the student is referred to one or more of the further 67 tables in which the groups are minutely analysed until individual bacteria are arrived at. The fourth part forms a caustic comment on careless or imperfect descriptions, as it consists of the names of no less than 400 bacteria "incompletely described," arranged in ten lists or groups, of which it is safe to say not one of the cocci or bacilli could be recognised, when next encountered, from the few attributes that were considered sufficient by those who originally isolated and recorded them. Last of all comes an exhaustive bibliographical index of some 60 odd pages, giving the names of all the species included in the tables and the original reference for each—a most valuable piece of compilation.

There is little fault to be found with the book as a whole. The precise critic may complain that the directions for making media are too meagre and do not permit of that accurate standardisation which is the aim of every modern bacteriologist, and occasionally we find ourselves disagreeing with some diagnostic character of minor importance, as, for example, when M. catarrhalis and M. melitensis are stated in the final table to grow feebly, or not at all, on gelatine at 20°–22° C. But we feel sure that these diagnostic tables will receive a warm welcome from workers, particularly those whose facilities for access to bacteriological literature are limited.

Historical Sketches of Old Charing.

By JAMES GALLOWAY, A.M., M.D. Aberd. London: John Bale, Sons, and Danielsson, Limited. 1914. Pp. 82. Price 10*s.* 6*d.* net.

Historical Account of Charing Cross Hospital and Medical School.

By WILLIAM HUNTER, M.D. Edin., F.R.S. Edin. London: John Murray. 1914. Pp. 309. Price 21*s.*

THE two volumes before us are both written by physicians to Charing Cross Hospital, and cover a period of time extending over some 700 years. From about the year 1229, when Henry III. confirmed the gift of William, Earl of Pembroke, of

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[1] THE LANCET, Nov. 15th, 1884, p. 871.

"all his houses at Cherring" to the Brethren of Roncesvalles, until 1544, when the greed of Henry VIII. despoiled the house and ravished the poor, there existed a body of men at Charing who cared for the said poor and gave them such medical treatment as the knowledge of the times permitted. In 1821 arose the present Charing Cross Hospital, carrying on the long and honourable mediæval tradition.

Dr. Galloway has reprinted his interesting account of the chapel and hospital of St. Mary Roncesvalles, which was originally published in 1907. The chapel and hospital were a cell of the great mother house of St. Mary Roncesvalles in Navarre, of which Charlemagne was the practical founder. The house served many interests, for not only were there military brethren who kept the pass from Pamplona to Bordeaux against the Moors, but there were also non-military *confrères*, who ministered with prayers and alms; and in addition there was a hospital for the sick and for weary wayfarers, with a staff including physicians, surgeons, an apothecary, and sisters. The English branch house came to possess property in various districts of England, Ireland, and Scotland, and it flourished with varying fortunes until the spoliation under Henry VIII. The site was on the ground of what was in later years Northumberland House, and is now more or less Northumberland-avenue. A landmark in the history of the hospital was the year 1290, when the body of Eleanor of Castille rested in Charing on its way to Westminster, and this fact gives Dr. Galloway occasion for supplementing his account of the hospital with a further account of the beloved Queen, the progress of her body, and the various monuments erected to her memory. Illustrations are given of the crosses still standing.

Years passed, and the hospital of St. Mary Roncesvalles was only a memory in men's minds. But in the year 1818 a medical man, Dr. Benjamin Golding, born at St. Osyth in 1793, and educated at St. Thomas's Hospital, 1813–1817, formulated a scheme for a hospital which should not only be a place for the care and treatment of the sick, but also a centre of medical education in the widest sense. In addition to the ordinary pupils a certain number of "young gentlemen of respectable but unfortunate families" were to be given "free access to every branch of instruction conferred without remuneration by the directors and other teachers." It is this provision for education which marks Charing Cross Hospital from its foundation as unique among the hospitals of London, a point upon which Dr. Hunter rightly lays much stress. In Dr. Golding's own words, "The want of a university, so far as medical education is concerned, will be fully supplied, and the branches of instruction in which those places are defective—namely, the practical—will be here amply made up, and no advantages which they furnish excepting the honorary distinction of degrees will be here unpossessed." The syllabus as laid down by Dr. Golding was indeed astonishingly comprehensive for its date (1822), for it included instruction in things medical and chirurgical, in electricity and galvanism, in the art of operations and the use of baths, and took note also of diseases of tropical climates, and of the professional duties of the public services, which at that date meant the medical services of the army and navy. Dr. Golding was evidently a very remarkable man, quite practical and quite prescient, a rare combination of qualities.

Dr. Hunter describes the rise and progress of the school and the hospital, and deals briefly with the origin of the other great hospitals of London, chiefly by quoting extracts from the writing of Dr. Golding himself as given in his "Historical Account of St. Thomas's Hospital, Southwark, 1819." Loving mention is made of David Llewellyn, formerly a student of the hospital, who was surgeon on board the Confederate war steamer *Alabama*, and who went down with his ship in 1864 rather than imperil the wounded by getting on board their boat; of P. B. Conolly, A.M.S., who died on service in the Gordon Relief Expedition; of David Livingstone and Thomas Henry Huxley—all students of the hospital and all men who strove in different ways and in different fields to benefit their fellow men. To Huxley is devoted a whole chapter; he was elected, in company with his brother James, a free student of the hospital in September, 1842, and remained there until 1846, when he entered Haslar Hospital.

The volume closes with an account of recent developments of the school between 1911–14 and the roll of benefactors from the foundation until the present day. Not the least interesting part of Dr. Hunter's excellent compilation is the number of plates illustrating Charing Cross and its neighbourhood in times past. They have been carefully reproduced from old prints, maps, and plans, and show how fair and dignified a place was the Strand and its neighbourhood at least down to 1600.

Dr. Hunter and Dr. Galloway have earned the thanks of all who take an interest in the history of London, and of all medical men who care for the records of their profession.

The Unconscious: The Fundamentals of Human Personality, Normal and Abnormal.

By MORTON PRINCE, M.D., LL.D., Professor (Emeritus) of Diseases of the Nervous System, Tufts College Medical School; Consulting Physician to the Boston City Hospital. New York: The Macmillan Company. 1914. Pp. 549. Price 8*s.* 6*d.* net.

THE discussions which have raged round the question of the subconscious mind have not sufficed, it would appear, to clear the air. The actuality of the subconscious mind is still as confidently asserted as denied. Unfortunately, the term, as commonly used, has many meanings, and at the same time the error still persists of confounding facts with theories based upon facts. In a series of lectures on abnormal psychology Professor Morton Prince has proceeded by first of all describing facts, and thereafter by induction he has formulated theories to explain these psychological facts. The lectures have been elaborated into the present volume, in which the problems of psycho-physiological functions and mechanisms are considered with deep insight.

Professor Morton Prince establishes the idea of the subconscious mind as a theory based upon observed facts. He distinguishes two classes: "(1) the unconscious, or neural dispositions and processes, and (2) the co-conscious, or actual subconscious ideas which do not enter the content of conscious awareness." The former processes are purely neural or physical, the latter are psychological or ideational, but both are types of subconscious processes. The reader must be careful to grasp the sense in which Professor Morton Prince uses the term "unconscious," as it differs from that held by other workers in the same field. He employs the term "neurograms" for concepts devoid of the psychological attributes of any of the elements of consciousness; whether these neurograms are ultimately psychical or physical is, in the author's view, immaterial. In another place he says that "the unconscious is the great storehouse of neurograms which are the physiological record of our mental lives." Neurograms are "dispositions" or residua deposited by the neural processes underlying the experiences of conscious life. While the conscious guidance of life depends on memory-experiences derived from the unconscious residua just mentioned, the latter may remain functioning as processes quite unaccompanied by conscious equivalents; here the author classes emotional dispositions and instincts.

In the co-conscious division of the subconscious mind we are dealing with unconscious processes that have conscious accompaniments, which do not, however, enter the focus or fringe of awareness. Such subconscious ideas often possess a marked degree of autonomy, and are capable of determining or inhibiting conscious processes of thought. By hypnotic and other methods such phenomena can readily be demonstrated. The personality is thus composed of various factors, some acquired, some innate; on their harmonious coöperation depends the successful interaction of the organism and its environment.

Professor Morton Prince's book may be recommended to the student of psychology and psychiatry as a valuable introduction, critical in its discussions and cautious in its conclusions, to the study of abnormal psychology.

JOURNALS.

British Journal of Inebriety.—In the July number of this periodical Lady Henry Somerset discusses the treatment of women drunkards in the light of her experience at the Duxhurst Colony. She emphasises very strongly the importance of giving attention to the physical factor in inebriety, not only on account of its intrinsic significance, but also because by laying stress upon it we are in some measure diminishing the patient's painful sense of moral degradation, and are so preserving the feeling of self-respect. For the same reason homilies on the results of alcoholic excess are unnecessary and undesirable. The best lesson in this sort that the patient can learn will be given by the spectacle of other patients who come to the home when she herself is on the road to recovery. Lady Henry also reiterates her belief in the importance of putting the patient to some occupation that she has never engaged in before, so that the process of moral and mental re-education may not be hampered by associative trends connected with the alcoholic past.—Dr. Jon Alfred Mjoen, of Christiania, contributes a very interesting but rather too condensed article on Sociological Aspects of Recent Legislation in Norway Relating to Alcohol and Alcoholism. The legislation specially referred to is an enactment establishing a system of differential control and taxation of beers according to their alcoholic strength, beers containing less than 2¼ per cent. of absolute alcohol being saleable without restriction and paying minimal duty, while beers of higher alcoholic content up to 5½ per cent. are subject to progressively increasing taxation, and can be sold only if the municipal council of the district gives its sanction. Beers with more than 5½ per cent. of alcohol are prohibited for general sale. Beers are classified in accordance with these principles, and the law requires that each bottle sold shall have the class indicated on the label. Dr. Mjoen, who has been largely responsible for the passing of this law, explains briefly the scientific grounds on which its provisions are based. He holds that experimental and clinical evidence shows that the action of alcohol on the organism is largely dependent on the degree of concentration, very dilute solutions being practically innocuous. Further, he maintains that the germ cells are extremely resistive to all toxic influences, including the influence of alcohol, and this to such an extent that it may be questioned whether alcohol ever acts as a germ poison except in so far as it checks a regenerative tendency in defective germ-plasm. In any case, it requires a mu higher concentration of the toxic agent to cause injury the drinker's offspring. These principles govern the clas fication of beers in the new Norwegian law, beers of t privileged class being such as are considered to have injurious effect either on the individual drinker or on h offspring, beers of Classes II. and III., which are ma subject to local option, being alcoholic to the extent th they are injurious to the individual but not to the rac while beers in the prohibited Class IV. are highly alc holised, and therefore may be capable of a detriment action on the germ-plasm. Apart from its importance a reasoned experiment in temperance legislation, t Norwegian law is of interest from the avowedly eugen tendency by which it is inspired. Other articles in th number deal with life in an inebriate retreat as seen fro the patient's point of view, with the relation of alcohol tuberculosis, and with the need of early treatment inebriety.

BRITISH MEDICAL ASSOCIATIO

EIGHTY-SECOND ANNUAL MEETING AT ABERDEEN.

THE SECTIONS.

STATE MEDICINE AND MEDICAL JURISPRUDENCE.

WEDNESDAY, JULY 29TH.

President, Professor MATTHEW HAY (Medical Officer of Health of Aberdeen).

The PRESIDENT, in his opening address, said that it was t many a matter of surprise that the section should combin two subjects on the whole so different as medical juri prudence and State medicine, although these two subject were combined in the chairs in some of their medica schools in Scotland. He thought it was in the interests both subjects, however, that their combination should ceas as they would do in the University of Aberdeen wheneve he relinquished his chair, and he was glad that a full-tim lecturer in public health had recently been appointed. H could not help at times contrasting the attitude of the publi mind towards, on the one hand, the hunting down and th extermination of the murderer of a single human life, an towards, on the other hand, the discovery and removal o the cause of an epidemic of disease by which hundreds o human lives might be perishing. As an instance, a singl murder, such as the Crippen case, excited apparently fa more human interest and attention than a devouring pesti ence such as the plague in India, from which two or thre million persons died a few years ago. In these days ther were so many addresses on health matters that he woul devote the remainder of his remarks to medical jurisprudence and especially to the chief subject of it—the criminal. H was glad that there was a steadily growing desire to se justice done to the criminal, but not the kind of justice whic such a phrase would have implied a hundred years ago. Th modern study of lunacy had led to an infinitely more human and just treatment of the ordinary lunatic, and had as a side issue led to a closer study and understanding of th criminal. Viewed from the standpoint that everyone wa physically, mentally, and morally in the main what hi parentage and environment made him, it would be mor appropriate to talk of the treatment of the criminal and les of his punishment. The public were now becoming aliv to that side of the question in criminality as much from their education by the biologist and the sociologist as from the teachings of medical men, though he thought the legal profession had accepted such views with much, perhap excusable, caution. America with its Borstal system led the way a considerable number of years ago, and in this country they were rapidly following, the latest step being the Mental Deficiency Act, which, if whole-heartedly worked throughout the country, could not fail to introduce a new era in the treatment of defectives, intellectual and moral, and to lessen crime both directly and indirectly. In a community of ideal civilisation all measures for dealing with crime would aim at its prevention and not at its punishment. The one barbarity remaining in this and other countries, when in other matters the modern humane and scientific view was increasingly held, was the death sentence, the only justification of which, in his opinion, was the eugenic one, but the eugenic end could be otherwise attained. Finally, as with disease so also with crime, prevention was better than cure. And in that saying the union of State medicine and medical jurisprudence might after all find justification.

Sir VICTOR HORSLEY opened a discussion on

The Reform of the Vital Statistics of the Nation, with Special Reference to Death Certification.

He alluded to the leading part which the British Medical Association had always taken in dealing with this subject. The proposals of the Association had passed unheeded by statesmen, partly on account of official inertia and partly owing to the remissness of the medical profession in not furnishing the Government departments with a classification of diseases of real scientific value. The "Nomenclature of Diseases," which bore the imprimatur of the Royal College of Physicians of London, was essentially ridiculous in its terminology, as it was really only a list of symptoms. The profession had been led or encouraged by this volume to employ expressions which were hopelessly inadequate. One of the worst instances was a cause of death called "hysteria, neuralgia, neuritis." These diseases were stated by the Registrar-General to have caused the deaths of 558 persons in 1911; 57 were stated to have died from "hysteria, neuralgia, and sciatica," and 501 from "neuritis." Of course, the neuritis deaths were really due to alcohol, yet in only 80 cases did the practitioner certifying venture risk to his professional practice in adding the real cause of death—namely, alcohol. As the moral responsibility for the present situation would seen to rest considerably on the profession, his first proposal was that their Association should move in the matter and produce a real nomenclature of diseases from which all the old loose terms and archaic names were expunged. Sir Victor Horsley next dealt with the question of direct confidential certification of death, on which subject the British Medical Association had formulated its views ten years ago. In 1904 the Medico-Political Committee had recommended that the medical practitioner should transmit to the registrar direct the certificate in a sealed envelope, that this certificate should be a confidential document subject to the discretion of the Registrar-General, that the practitioner should be required to view the body after death, should be paid a fee for the certificate, and that in doubtful cases a necropsy should be performed at the cost of the State. The principles of the Association's scheme were laid before the Registrar-General by a deputation which fully explained the urgent necessity of altering the system of death certification because the national death statistics were so utterly untrustworthy; yet nothing was done, and probably nothing would have been done had it not been for the appointment of the Royal Commission on Venereal Diseases, which naturally required to know how many deaths really occurred in the nation from venereal diseases, the certification of which was notoriously as worthless as that of alcohol. Sir Victor Horsley referred shortly to the systems adopted in France and Switzerland, giving special praise for simplicity and completeness to the Swiss system. A most important reform in our vital statistics was the notification of births. Unfortunately the adoption of this principle had been marred by two administrative errors, against which the British Medical Association protested, but, as usual, in vain. In the first place, the Act was only permissive and not compulsory, and in the second place it made no provision for the remuneration of the practitioner who was called upon to do the work of the State. Closely associated with this reform of the notification of births was that of the certification of stillbirths, which the Association pressed for in 1905. This would secure for the nation national statistics on a subject on which it had practically no information—namely, ante-natal conditions, which were to a large extent responsible for the high infantile mortality. In conclusion, Sir Victor Horsley urged that the office of the Registrar-General, instead of being, as it was now, a sub-office of the Local Government Board, should be completely reconstituted as a sub-office of a Ministry of Public Health; and, in the second place, the Registrar-General ought to be someone who had received a medical education and thoroughly understood the biological problems of vital statistics.

Dr. W. BRUCE (Dingwall) confined himself to the public health aspect of the question. He laid stress upon the dread of certifying practitioners of want of secrecy, which caused them to avoid the use of such terms as cancer, puerperal fever, or venereal disease. When a Minister of Public Health came to be appointed the whole system of medical certification would have to be revised, and the procedure connected with the registration of births and deaths might be concentrated in the offices of the medical officers of health.

Dr. J. C. DUNLOP (superintendent of statistics, Edinburgh), while agreeing as to the aspersions on the "Nomenclature of Diseases," yet pointed out that it was not the official book in Scotland. He did not think, however, that it encouraged the use of ill-defined terms to the extent suggested by Sir Victor Horsley. In his experience 99 per cent. of death certificates were well drawn up, but the remaining 1 per cent. were often exceedingly bad. He quoted a number of curiosities of medical certificates which he had come across, including the following: "Shock, the result of hard labour." "Senile decay; duration 5 years, 6 months, 22 days." "Senile decay; duration 5 days." "Drowned in mountain canal while trying to retrieve his wind-tossed cap from the muddy deep." "Natural causes, or the result of falling into a ditch at the side of the railway." "Tonsillo-laryngo-tracheo-bronchitis." "Cerebral enteritis." The kind of certificates he objected to were those of "debility," "jaundice," "old age," "asphyxia." There was often a confusion in medical men's minds between the cause of death and the mode of death. As to confidential certification, it should be borne in mind that medical statistics were merely a by-product, and if even very important were secondary to death registration. The register was public, and if the certificate was confidential it could not go into the register. He pointed out that in Scotland since 1855 the death certificates were sent straight to the registrar. With regard to stillbirths, what was wanted was notification of them, simply for statistical purposes, not registration. He did not at all agree with Sir Victor Horsley's proposal that the office of Registrar-General should be part of a Ministry of Public Health, and as legal knowledge was as important as medical, he did not think it advisable that the Registrar-General should be a medical man. He was not in favour of the proposal that the general practitioner should send the death certificates to the medical officer of health.

Dr. F. E. WYNNE (medical officer of health of Wigan) thought that a great deal of the confusion in the "Nomenclature of Diseases" arose from an attempt to classify diseases on an anatomical instead of on a pathological basis, as ought to be done. As an instance of this he mentioned that apoplexy as a cause of death was given under the heading of nervous diseases, because it was a hæmorrhage occurring in the brain, whereas on a pathological classification it should, of course, be included under diseases of the circulatory system. There was also great confusion in the classification of diseases of the thyroid gland, and he suggested that there ought to be a special section for diseases of the ductless glands. Then, again, he would like to see the term "croup" finally deleted from the "Nomenclature of Diseases," and laryngitis divided into infective and non-infective forms. As to "old age," it was not a disease, but the natural termination of a healthy life, and he thought the weekly returns should record the number of persons who achieved this ideal, even if an attack of bronchitis had cut short their career after 90 years of pilgrimage.

Dr. A. K. CHALMERS (medical officer of health of Glasgow) dealt with the international list of causes of death issued by the Census Bureau of the United States, the chief interest in which for the present purpose was in two recent changes in the method of tabulating the data on which the vital statistics of Scotland were based. These were (1) the substitution of the public health administrative area for the registration district, or group of districts, as the geographical unit; and (2) the introduction of a system of transferring births and deaths from the place of their occurrence to that of the usual place of residence of the mother or of the deceased person. The object of the international list was to secure a uniform basis for international comparisons, and the first step in the process was to secure uniformity in national and local returns, and the coöperation of the medical officer of health would, in his opinion, assist this end.

Dr. J. J. BOYD (medical officer of health of Pretoria) was strongly of opinion that the medical officer of health was the proper person to collect statistics.

After some remarks from Dr. D. McColl (Tamworth), Dr. D. Murray (Stornoway), and Mr. T. Laffan (Cashel), Sir Victor Horsley replied, and said that he had never taken part in a discussion which proved the truth of all he had advanced more than the discussion that day. Dr Chalmers's paper had proved that our system was a complete chaos, and that the international lists were absolutely chaotic nonsense. He concluded by moving the following resolution, which was seconded by Dr. Bruce and carried unanimously:—

> That the British Medical Association reaffirms its opinion that extensive reforms in the administration of the national statistics of life and death are urgently needed, especially the immediate institution of a confidential system of death certification, and the Association therefore calls on the Government to introduce legislation to effect this essential change in the public health service.

Dr. J. C. McWalter (Dublin) read a paper on

The Necessity for Reforming the Coroner's Inquest,

in which he suggested that the coroner should be a registered medical practitioner and also a barrister or LL.B., or else a solicitor who was on the Medical Register.

Dr. W. G. Aitchison Robertson (Edinburgh) said that without departing from the privacy of his inquiry it was desirable that a procurator-fiscal should associate himself with a medical man in the investigation of any suspicious death. That should be done during the precognition of witnesses, and it might be a different medical man from the one engaged at the post-mortem examination.

Thursday, July 30th.

The second session of the section was entirely taken up with a discussion on

The Administrative Treatment of Tuberculosis in its Various Aspects.

Dr. John T. Wilson (county medical officer of health of Lanarkshire), who opened the discussion, said that the treatment of tuberculosis from an administrative point of view had acquired an importance little dreamt of some years ago. Up to then charity and the Poor-law were the agencies which the working classes had to rely on when affected with tuberculosis. The change was no doubt in large measure due to the National Health Insurance Act, which provided sanatorium benefit from July, 1912. The questions he would like to suggest for discussion were: Who were to receive treatment, and how was the treatment to be carried out? The schemes for providing institutional treatment in the county sanitary districts of Lanarkshire would when complete provide (1) a sanatorium and work colony, special accommodation, including an open-air school, being provided for children; (2) several hospitals were already in use, one of these having special accommodation for surgical cases and being equipped with an X ray apparatus; and (3) one or two dispensaries in populous places were being tried, but in country districts reliance was mainly placed upon visits to the home by the staff of tuberculosis officers. The institutional staff included three resident medical officers and a consulting surgeon, and there were six outdoor tuberculosis officers. The number of beds in use in county institutions when the scheme was complete would be over 300, which gave a proportion of over 1 bed per 1000 of the population entirely devoted to the treatment of tuberculosis. He was in favour of compulsory notification of the disease, but feared it would be difficult to adopt the suggestion of the Astor Committee that the cases to receive institutional treatment should include those in which the disease was strongly suspected but in which there was no evident impairment of the working capacity. He had found that working men who had a wife and family and were earning good wages were often very reluctant to accept institutional treatment so long as their general health was not seriously impaired, on the ground that their dependents would not be properly provided for; and mothers with a large family soon grew restless under institutional treatment. Of all classes of the community children presented the best field for treatment of this kind, as they could be kept under control for an indefinite period. Under present conditions domiciliary treatment was unsatisfactory, but with better housing of the working classes it would be a valuable aid in dealing with tuberculosis.

Dr. Alexander S. Macgregor (assistant medical officer of health and tuberculosis officer, Glasgow) considered some points of administrative detail in the evolution of a complete scheme for a large industrial urban district. There were established in Glasgow 6 dispensaries serving 7 dispensary districts containing population groups of from 75,000 to 220,000 persons. The staff consisted of 6 whole-time medical officers, 14 nurses (a number about to be increased to 21), 3 dispensers, and 4 clerks. With regard to institutional treatment, he considered that the ratio suggested by the Departmental Committee of 1 sanatorium bed and 1 hospital bed for every 5000 inhabitants was not applicable to a large city. There were at present only 182 beds available for advanced tuberculosis cases in Glasgow, but they were providing 220 beds at Ruchill Hospital and 266 beds at Robroyston. They were also providing 250 sanatorium beds, a total of 736 beds for pulmonary phthisis, which gave a ratio of 1 bed to 1500 persons. The aim of domiciliary treatment was to render the home as suitable as possible for treatment, for which purpose various resources could be used, such as statutory powers under the Public Health and Housing Acts, provision of beds and bedding, to enable the patient to sleep alone, nursing attendance if required, Poor-law relief, medical extras, and charitable aid.

Dr. J. J. Buchan (medical officer of health of Bradford), speaking of surgical tuberculosis, thought that in that respect future development should be along sanatorium rather than hospital lines. In the older methods of treating this disease the cases were usually admitted to hospitals or infirmaries for surgical treatment, and when this was partially carried out by operative procedure they were discharged for prolonged dressing at home, frequently in very bad surroundings. He was of opinion that cases of surgical tuberculosis should be treated to a termination, and regarded the lines of treatment carried out by Mr. H. J. Gauvain at Alton as ideal in this respect.

Dr. George Jessel (Wigan) gave details as to the organisation and management of the tuberculosis dispensary at Wigan. He thought the dispensary should exercise supervision over home conditions and hygiene rather than give actual treatment. That should be left to the panel doctor, who in some places had been allowed to escape from his responsibilities, with the result that the dispensary had become a mere out-patient department, which was entirely contrary to the spirit of the Astor report.

Dr. J. Guy (tuberculosis medical officer, Edinburgh) attributed the lowering of the tuberculosis death-rate to progress in sanitation, especially better drainage and improved housing, social uplift, and educational advancement. Three cardinal points to produce a further fall were: a sufficient living wage for every worker, a house in which he could live hygienically, and that every woman should be trained to manage her house economically. He believed that the local authority was the only one that could deal adequately with this problem, and urged a concentration of forces and coöperation between medical officers of health and tuberculosis officers. There ought also to be whole-time veterinary inspectors in all districts to ensure a supply of pure milk.

Dr. J. E. Esslemont (Bournemouth) professed a profound distrust of domiciliary treatment. He advocated the formation of industrial colonies for sufferers from tuberculosis, large communities of 20,000 or 30,000, where patients could live under garden-city conditions, and carry out the occupations for which they were best fitted, receiving remuneration for their work.

Dr. D. J. Chowry-Muthu (Wells, Somerset) gave his impressions of a recent tour in India, when he investigated on the spot the extent of tuberculosis, and found the mortality higher than in England, and increasing rather than diminishing.

Dr. W. M. Crofton (Dublin) read a paper on

Prophylactic Inoculation against Tuberculosis.

He based his views upon the theory that persons only developed tuberculous disease whose resistance to the disease was subnormal, and that prevention of the disease could be attained by raising the resistance of every individual to normal. He discussed the causes of tuberculosis under four heads. 1. Bad hygienic surroundings, showing by statistics how the mortality increased under such conditions, but was still too high (1·92 in Dublin) among the middle classes. 2. Lowering of resistance by infection with other disease, instancing the predisposition of children to tuberculosis by measles and whooping-cough. He had found that catarrhs of the respiratory tract predisposed to tuberculosis, and that curing of a "cold" by autogenous vaccine would often prevent the development of phthisis. Pyorrhœa alveolaris was another predisposing cause, which could be removed by vaccine therapy. But it was not enough to increase the resistance to these affections, unless the resistance to the tubercle bacillus itself was increased. 3. A low resistance might be inherited. 4. A normal resistance might be overcome by a massive or continuous infection with virulent microbes. The only way to bring up a low resistance to normal or to increase a normal resistance was the production of specific antibodies in the individual by inoculating him with a vaccine of the particular microbe; and his practice for the last eight years had been to urge the members of families whose parents were tuberculous or in which cases of tuberculosis had occurred to undergo a short course of tuberculin. He used Koch's T.R., the doses for adults being as a rule 0·001 c.mm., 0·005, and 0·01, and for infants three months old 0·0001, 0·0005, 0·001.

Dr. EDWARD E. PREST (medical superintendent of the Ayrshire Sanatorium) read a paper on

Sanatorium Benefit, and the Position of Sanatoriums in their Relation to the Treatment of Chronic Cases of Pulmonary Tuberculosis.

He said the funds provided were insufficient, and he advised officers not to spend money on mere palliatives. There were very few efficient sanatoriums, and many of them were the resort of cases which had been allowed to go on insufficiently treated at home. The value of tuberculin had been, in his opinion, greatly exaggerated.

Mr. LAFFAN spoke of the difficulty in some parts of the country of getting milk, and advocated the compulsory acquisition of milk from farmers at a reasonable price.

Dr. J. A. WATT (Derby) thought that six weeks in a sanatorium was quite sufficient for most cases, purely for educational treatment. If patients remained longer they were apt to become lazy and indolent. In his experience 15 per cent. of cases were wrongly diagnosed.

Dr. MCWALTER regretted that he had to take a pessimistic view, but in his experience sanatorium treatment was a hopeless waste of money. He had noticed three things which seemed to have some effect in preventing tuberculosis: (1) Smokers were not so susceptible to the disease as other members of the community; (2) consumers of garlic and onions, no doubt due to the presence of sulphide of allyl, were less susceptible; and (3) those who consumed lime-salts, either in the form of water or in brown bread, were less susceptible to tuberculosis.

Dr. F. MACRAE (tuberculosis medical officer, Aberdeenshire) said there was nothing to equal the sanatorium, but he believed in prolonged treatment there. His experience of tuberculin treatment was not favourable. Six children were treated with it and six control children treated in the ordinary way with cod-liver oil, &c. Five of the tuberculin-treated children put on weight and were sent to a convalescent home a month earlier than the control cases. In nine months, however, the five tuberculin cases were dead, and the six control cases were alive. This showed that while the initial resistance was increased the ultimate resistance was decreased.

Dr. D. D. GOLD (Hereford) emphasised the value of observation beds in connexion with dispensary treatment. He believed that money spent on domiciliary treatment was absolutely wasted.

Dr. J. C. THOMSON (Maxwelltown), Mr. T. HENNESSY (Clogheen), Dr. MURRAY, and Dr. R. MILNE (London) also spoke.

Dr. WILSON, in his reply on the discussion, agreed with those speakers who deprecated domiciliary treatment, as he considered it useless under present conditions.

There appeared to be general agreement, with the exception of Dr. MCWALTER, as to the value of sanatorium treatment, especially for education purposes in chronic cases and as a curative measure in early cases. There was considerable difference of opinion expressed as to the efficacy of tuberculin treatment.

FRIDAY, JULY 31ST.

The last day's session of the section commenced with a discussion on

Malingering,

which was opened by Sir JOHN COLLIE (London), who in the course of his paper drew special attention to the influence of the mind on the body as an important factor in the revelation of truth in accident claims and gave details of several cases illustrating this point. In each of the cases mentioned the functional disease originally induced by shock and suggestion was cured by powerful counter-suggestion, by forcing, as it were, into the patient's consciousness the idea that he was quite capable of doing his work if he only knew it. He believed that in that class of case occupation of some sort was the keynote of cure. The whole secret in treatment lay in getting the patients to adjust their mental processes to their environment. In cases which were contested the "law's delay" accounted for a great deal of prolonged disability, and the development meanwhile of functional disease. While waiting for a settlement, and especially while waiting for the trial of his case, the workman had little or nothing but his health to think of; he was unable to concentrate his thoughts on anything but his body, and hence became a prey to all sorts of pains and discomforts and sensory stimuli which he would in other circumstances ignore. When confronted with these difficult cases the first and all-important step to take was to make as certain as possible that there was no organic disease present. That was by no means easy, as certain organic diseases in their incipient stages closely resembled hysteria, neurasthenia, or still more the hybrid hystero-neurasthenia. The most likely diseases to cause mistakes were disseminated sclerosis, general paralysis of the insane, and tabes. The point many were apt to forget was that a serious disability was none the less existent because it was psychic in origin. Speaking generally, the more an accident resulted in actual physical injuries, such as broken bones and so forth, the less likelihood there was of serious nervous sequelæ, especially if the case was wisely treated from the first. It had been his practice for some time to induce insurance companies for whom he acted to send their milder cases to a trained masseur, who supplied not only massage but psycho-therapeutic treatment in the form of candid advice and encouragement to use the affected joint. The severe cases he sent to Maida Vale Hospital for Nervous Diseases, where they received admirable psychotherapeutic treatment. That institution alone had within the last few years cured between one and two hundred cases of the class referred to. Referring to National Insurance, he cited the figures of a society with more than a quarter of a million members spread all over the country. Rather more than a quarter of its members resided in the district which was served by the society's own medical examiners. The amounts per head paid to those members were—men, 8*s.* 2*d.*; women, 5*s.* 4½*d.*; while those in the other parts of the country who were left to haphazard medical attendance received—men, 12*s.* 11*d.*; women, 13*s.* 10½*d.* The estimated amounts required were—men, 11*s.* 11*d.*; women, 7*s.* 7½*d.* It was obvious that the proper exercise of the medical man's duty effected a considerable saving. One explanation of the excess in the case of women was to be found in the fact that the sickness payment to women was within a few pence of the average amount earned by women workers throughout the country. There was therefore very little, if any, inducement to disregard the minor ailments, but rather an encouragement to avail themselves of their anæmic and other conditions in order to obtain a temporary respite from the hardships of daily toil. If all medical men would conscientiously and fearlessly perform their duty in accident cases an enormous reduction would be made in the burden thrown on the employers, and the large increase that had occurred in the compensation charge would be greatly reduced, if not entirely wiped out. Sir John Collie concluded by referring to arbitration cases, 98·7 per cent. of which, he said, were in 1912 actually settled out of court. Workmen and their solicitors knew that employers had always to pay the costs, and a large proportion of the cases were settled by processes which might be described by an ugly word. In cases which were decided by the courts the percentage of verdicts in favour of employees had risen from 18 per cent. in 1908 to 24 per cent. in 1912, which meant that if a workman was unlucky enough to be caught by the 100 to 1 chance of having his claim brought to court he still had more than a 5 to 1 chance of winning in 1908, and a 4 to 1 chance in 1912.

Dr. L. A. PARRY (Brighton) dealt with the difficulties of diagnosis, but was convinced that with sufficient experience and careful examination a proper opinion could be formed in the great majority of instances, and quoted some cases in support of this conviction. He complained of the careless way in which medical certificates were often given, and thought that if a consultation of all the medical men engaged in a case could be held before court proceedings the lamentable spectacle of medical men differing from each other on every point in the witness-box would be avoided.

Dr. HENNESSY (Clogheen) took exception to Sir John Collie's reference to "haphazard" doctors, as he considered that the so-called "haphazard" doctor was in most instances in a better position to judge whether a patient was malingering or not than the society doctor. He referred to the class of medical men in Ireland known as "medical advisers," whose functions were chiefly directed to keeping down the amount of money paid in sickness benefit, apart from the merits of the case. He instanced cases of a "medical adviser" certifying a case of Bright's disease as fit for work without even examining the urine, and of another certifying a man suffering from appendicitis as fit for work who in the course of a few days had to be operated on.

Dr. A. DRURY (Halifax) thought there was a danger of exaggerating the evil of malingering, which was no new thing, but had been brought into special prominence by the Insurance Act. There was also a serious danger in assuming, as specialists in any particular department were apt to do, that people were suffering from the diseases those specialists were usually in the habit of dealing with. Thus, if one went to Sir John Collie one felt one had got malingering. Formerly the medical profession were regarded as the enemies of the people, now they were regarded as the enemies of the societies. In his opinion working men were on the whole less disposed to malingering than any other class. They saw plenty of malingerers in their consulting-rooms. He entered a strong protest against the demand of the societies that they should certify a patient as suffering from a definite disease the first time they saw him. When a patient was told what the trouble was he bought a sixpenny popular book on medicine, and if he was inclined to malinger he could learn up the symptoms. What was wanted was a proper relationship between doctor and doctor and a better understanding between the societies and the medical profession.

Sir JOHN COLLIE, in reply, quite agreed that many cases could be cut short by medical consultations, but the difficulty was that there was nearly always some fighting spirit on one side or the other which absolutely refused to concede any point whatever. As to the suggestion of preconception on the part of the specialist, it always was exceedingly difficult to be impartial, but he ventured to think that experience taught one to be on one's guard against the obvious injustice of assuming that a person was malingering simply because he came to see one.

Dr. ROBERT MILNE, medical officer to Dr. Barnardo's Homes, London, read a paper on

The Prevention of Infectious Disease.

In his opinion one of the surest ways for the dissemination of scarlet fever, measles, diphtheria, tuberculosis, syphilis, and possibly dental caries, was the common custom in the schools of the country of indiscriminate using by all the children of pens, pencils, and ink erasers, which were never washed or disinfected, though children were in the habit of constantly sucking or chewing these utensils. Every child in the homes under his care had its own pen, pencil, &c., carefully washed and kept for its own use only. The management of a case of infectious disease consisted of two factors—the prevention of infection and the prevention of complications; and the provisoes he laid down were that the treatment must be commenced early and must be carefully carried out. The essentials of his treatment were early and thorough swabbing of the tonsils and pharynx as far up and down as possible with 10 per cent. carbolic oil every two hours for 24 hours.[1] It was rarely necessary to continue it longer in cases of scarlet fever, but it was an advantage to carry it out three times a day for a few days in measles. In addition the patient should be gently rubbed all over the body with pure eucalyptus oil both morning and evening for the first four days, afterwards once a day until the tenth day of the disease. The advantages he claimed for his methods were: 1. Absolute freedom from infection spreading, even with serious operation cases in the ward side by side, absolute freedom from cross infections and from secondary infections, and consequently from complications. 2. Return cases were unknown. 3. Children might safely occupy and sleep in the same room, and even in the same bed. 4. National economy. Cases in hospitals cost the ratepayers from £10 to £30 per patient; the cost of his method, including the supply of all necessaries, was from 2*s.* 6*d.* to 5*s.* per case. 5. Household economy. The mother was free to attend both to the patient and to her duties; the father was free to go to work, and the healthy children to school. 6. No after disinfection was necessary, for the disease had been destroyed. There was no need for destroying toys, books, &c. 7. The cases were milder and the duration of the illness was less. After ten days his patients were at school and church with hundreds of other children. 8. The disappearance of the trouble from a district, which naturally followed when the disease was destroyed.

Dr. JOHN RUSK (Belfast) agreed with Dr. Milne that scarlet fever was better treated at home than in hospital. His treatment was somewhat similar to Dr. Milne's, but he used carbolic lotion, not oil, for washing the skin, and he used formamint or formaldehyde lozenges for the throat in scarlet fever. He had had no complications and no deaths in either disease under his treatment.

Dr. BUCHAN read a paper on the Period and Duration of Infectious Disease, which was discussed by Dr. J. J. PATERSON (Maidenhead), Dr. J. M. MORRIS (Neath), Dr. MILNE, Dr. WYNNE, and Dr. J. M. CLEMENTS (Beckenham). There was a general agreement in the difficulty of dealing with diphtheria carriers, the inutility of closing schools, especially in epidemics of measles, and the lessened virulence of scarlet fever in recent years as contrasted with the increased severity of measles. There was not much support for the efficacy of prophylactic injections of antitoxin against diphtheria.

Papers were also read by Dr. FARQUHAR MACRAE (Aberdeen), on Anaphylaxis in the Antitoxin Treatment of Diphtheria; on Intracellular Parasites in Acute Measles and Scarlet Fever, by Mr. E. H. ROSS (Lister Institute, London); and on the Advisability of Suitable Steps being Adopted by the State and by Municipal Authorities for the Early Treatment of Cancer, by Mr. C. P. CHILDE (Portsmouth).

OPHTHALMOLOGY.

WEDNESDAY, JULY 29TH.

President, Mr. C. H. USHER (Aberdeen).

The PRESIDENT opened the proceedings with a few words of welcome to the members and guests present.

Dr. E. E. MADDOX (Bournemouth) opened a discussion on

The Choice of a Cataract Operation.

He said that the matter was to be considered from as many as five different points of view; each of these was of importance, though possibly not of equal importance. First, he would place safety; secondly, the ultimate visual result; thirdly, the beauty of the eye; fourthly, brevity of procedure; and, fifthly, fewness of operative interferences. As regards safety, which was the paramount consideration, the three usual operative measures might be put in the following order: (*a*) Preliminary iridectomy; (*b*) combined extraction and iridectomy; and (*c*) simple extraction. The first of these procedures undoubtedly gave increased safety in the long run, but the method was not popular with patients, for it meant two operations and two spells of lying up instead of one. It lessened the chances of hæmorrhage into the anterior chamber. It taught the surgeon a good deal about the behaviour of the patient. It often had a good effect upon the health of the eyeball, and if the cataract was immature it might hasten its maturity. Almost the only disadvantage besides the loss of time was the presence of a cicatrix, which at the second and major operation for the extraction of the cataract might interfere with a successful conjunctival flap. This atter disadvantage could be avoided by using a special keratome, or, at any rate, a very narrow one, for there was not the least necessity to make a wide incision, the iridectomy needing only to be of the smallest size. The iris should be withdrawn through this small incision with a Tyrrell's hook, or an extremely fine pair of iris forceps with the teeth on the lower edges of the blades. Combined extraction was suitable when the loss of a few days might be of importance to a patient. In India preliminary iridectomy was impossible. The following were the disadvantages of the procedure: (1) the filling of the anterior chamber with blood from the cut iris; (2) the falling of the iris across the knife; and (3) the longer time it took to complete the operation, and therefore the added risk there was of the patient squeezing up the eye and endangering it. The simple operation gave results far more perfect than any other type of operation, and were it only as safe as the two foregoing methods it would be the operation of election, and, indeed, the sole form of operation practised. It was, however, never quite free from the danger of prolapse of the iris after the extraction, but this accident was much lessened by the use of sutures to fasten down the conjunctival flap; Desmarres's bridge operation was even better still as a safeguard. Peripheral iridectomy or iridotomy did not appeal to him as satisfactory. After a simple extraction he was accustomed to use pilocarpine. The chief advantages of this mode of operation were: (1) the visual benefit with or without glasses which was far better than when a coloboma was present; (2) the adaptation of the pupil to light; (3) the beauty of the result; and (4) the lesser chance of the capsule being impacted in the wound. Its disadvantages were: (1) the risk of prolapse; (2) the imperfect evacuation of the cortex; (3) the large incision required; and (4) the risk of contamination of the iris during its temporary extrusion from within the eyeball. As regards the order of safety of the common forms of incision, he concluded it ran as follows: (*a*) subconjunctival; (*b*) with conjunctival flap; (*c*) limbal; and (*d*) intracorneal. A corneo-scleral flap had the following advantages: (1) it bound up the wound as though by the application of adhesive plaster; (2) it protected the most vulnerable part of the wound from infection; (3) it put the severed cornea in immediate communication with the circulation of the eyeball; and (4) unless there were ballooning of the iris the probability of prolapse after simple extraction was lessened, and greatly so if sutures were used. He had, however, entirely given up the use of sutures, and had taken to the use of the bridge operation introduced by Desmarres in 1851 and revived from time to time. It conferred all the benefits of sutures without having to spend the time and trouble of inserting them. The vitality of the flap was greatly increased, the nutrition of the cornea was far less impaired, and the upper lid could not engage in the incision nor disarrange the flap, while the safer and more rapid union permitted greater freedom to the patient with earlier restoration of exercise. The bridge method had two disadvantages: first, the cortex could not be enucleated without some difficulty; and, secondly, the speculum could not be removed before the lens was extracted. Desmarres and Cluckie gave the measurements of the bridge of conjunctiva as 4 mm. wide and about 10 mm. long, and it should be cut from the centre of the corneal flap. Dr. Maddox thought it better to cut the bridge from the more nasal portion of the corneal flap, making the temporal side of the bridge longer than the nasal. He described in detail how he manipulated the bridge in extracting the lens. Lavage he thought most useful, but he strongly deprecated the use of indiarubber tubes: first, because the interior of these could never be inspected; and, secondly, because portions of the rubber were apt to be shed, and these might be washed on to the eye. He showed an ingenious instrument for avoiding the use of tubes, the whole of which was in the surgeon's hand, and the force of the stream could be modified to any degree. Whilst this instrument should always be ready, he thought that the less it were used the better. As regards brevity of procedure, preliminary iridectomy took the first place, and as regards the fourth consideration—viz., fewness of operative interferences—the intracapsular method had no rival, as it needed neither preliminary iridectomy nor subsequent needling, but its weakness, amongst other things, consisted in the fact that it was essentially a "two-man" operation, and success depended upon each doing his part perfectly. He drew attention to the disadvantages of some of the specula in use, and showed specimens of others he had introduced to diminish these poor effects.

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[1] THE LANCET, vol. i., 1911, pp. 1070, 1642.

Dr. CASEY A. WOOD (Chicago) thought that mature cataracts in otherwise healthy eyes did well with almost any operation. Immature cataracts in persons under 60 years of age were frequently complicated by some other diseased condition of the eye, and were very likely to develop iridocyclitis. It was desirable to give a course of salicylate and iodide previous to operating and also subsequently. If preliminary iridectomy were done he preferred to use a long narrow keratome and insert it far back.

Major W. E. MCKECHNIE, I.M.S., said that of current operative procedures he considered preliminary iridectomy was the safest, but no two-step operation was practical in India. The native who found his sight not restored by the first operation would at once decamp. If, therefore, it were done it was necessary to do it at the time of the main operation. Again, because of the subsequent needling so often required after the ordinary extraction, it was not so suitable as the intracapsular operation, and surgeons in Northern India were resorting to this method in increasing numbers. The official figures for the Punjab and North-West Frontier for the years 1898 and 1913 were as follows:—

—	1898.	1913.
Operations ...	4934	16,236
Cured	90·4 per cent.	94·86 per cent.—i.e., vision sufficient to get about with.
Relieved ...	3·1 ,,	1·84 per cent.—i.e., some sight obtained, but result bad.
Discharged otherwise ...	6·5 ,,	3·3 per cent.—i.e., eyes lost or did not attain vision.

In this area in the year 1898 intracapsular operations were not done, and in 1913 90 per cent. of the operations were intracapsular. Errors of technique might be let off with but slight punishment in the ordinary operation, but were apt to be severely punished in the intracapsular operations. Thus one of the fateful errors was to make too small an incision; this would be disastrous to the last degree, and the incision should be at least half the size of the cornea. The zonule of Zinn was not tough, and if difficulty was experienced in removing the lens it was due to the incision being too small. In his experience it seldom offered any appreciable resistance to the delivery of the lens. This could easily be proved when operating on the pig's eye. His own practice was to make a purely corneal incision, finishing about 1·5 mm. from the upper pole of the limbus, but he did not consider this essential, and it might be made further back if desired. In either case the delivery of the lens would be easy if the incision were large enough. He described in detail his particular method of cutting the flap and also the manipulation required to ensure the proper replacement of the iris. During the operation it was always dangerous to ask the patient to look down, for the vitreous would be sure to present if this were done. Bulging, prominent eyes, although favouring easy incision, were never good ones on account of the difficulties of the toilet. Sometimes deepset eyes were far easier to operate upon. He briefly described other operations designed for the purpose of removing the lens in its capsule. The easiest cases to extract in this way were the early immature ones, and if the incision were large enough their removal was usually attended with no difficulty.

Mr. T. H. BICKERTON (Liverpool) drew attention to the way in which surgeons varied in their practice from time to time. He himself performed the combined operation, but whenever possible he did a preliminary iridectomy.

Mr. C. DEVEREUX MARSHALL (London) congratulated Dr. Maddox on the very exhaustive nature of his paper. He said it was interesting to see from year to year how surgeons abroad, and especially in India, were taking to Smith's operation in increasing numbers, but so far the progress it had made in England and Europe had been small. He himself usually did his operations without iridectomy, though he never hesitated to do one if the iris showed the slightest sign of prolapsing. He frequently did lavage to the anterior chamber, and never used a cystotome, for he opened the capsule when traversing the anterior chamber with the knife in making the incision. He strongly urged the advantage of early needling, and usually did it within two to four weeks after the extraction; even if a case had normal vision after extraction the capsule present might subsequently cause failure of vision, and was therefore preferably needled at once.

Mr. J. HERBERT PARSONS (London) advocated the doing of a peripheral iridectomy, and in this way he claimed that the advantages of both simple and the combined operation were obtained.

Dr. R. A. REEVE (Toronto) said he did a good many simple extractions and freely irrigated the anterior chamber. He always used capsule forceps in preference to the cystotome. He found the results of this method so satisfactory that he had not adopted Smith's method.

Dr. A. HILL GRIFFITH (Manchester) spoke strongly in favour of the combined operation.

Dr. ANGUS MACGILLIVRAY (Dundee) spoke in favour of subconjunctival extraction, for he felt that after the operation was done the patient was quite safe. He did not like sutures, but he always did lavage and endeavoured to avoid an iridectomy where he could.

Dr. G. MONTAGU HARSTON (Hong-Kong), who had had considerable experience with the intracapsular method in China, said that if the eye were at all soft he would not attempt it, but otherwise it gave excellent results. It was absolutely necessary that a large section should be made to include at least half the cornea, and iridectomy should be done always.

Professor HAROLD GIFFORD (Omaha) thought there were many reasons why the intracapsular operation should be done in India, but he considered it unnecessary in Europe and America. He always aimed at very thorough anæsthesia, and he obtained this by the subconjunctival injection of a 4 per cent. solution of cocaine at the upper part of the eye and over the internal rectus, where he placed his fixation forceps for the purpose of counter-pressure as well as for fixing the eye. If this were done four minutes before the operation the whole procedure was painless and the iris quite anæsthetic.

Dr. MADDOX said that no reply was necessary to the discussion.

THURSDAY, JULY 30TH.

Mr. PARSONS opened a discussion on

The Hygiene of Reading and Near Vision.

He traced the development of letters from the earliest times, and showed how various modifications in letters had arisen; these were due either to desire to facilitate the ease of reading or for the purpose of beautifying the print. It was only within the last 30 years that the subject had been studied from the scientific point of view. At first letters were introduced with but little consideration of physiological requirements, but much more largely with regard to the mechanism of their production. He carefully described the way in which most of the Roman letters were made up and developed. Adolph Weber had investigated the rapidity of reading with types of different sizes, and found that if letters were more than 2 mm. in height the rate of reading diminished, and the best height was 1·5 mm. He then discussed the effect of interlineation, and the distance between letters and words and letters. The tendency of modern books was to reduce the length of lines. Cohn gave 90 mm. as the ideal length, 100 mm. as the maximum, and 30 mm. as the minimum. Williamson, of Manchester, found that of 250 school books the type was equal to a larger than Cohn's standard in 109. In 111, or 44 per cent., the type was too small. He also drew attention to the relationship of illumination to near work. Roughly speaking, the minimum illumination of the type which permitted of normal visual acuity with Snellen's test types was between 2 and 3 metre candles. Vision improved up to 10 metre candles, after which it remained almost constant up to 30 metre candles and over. A glare had less effect in diminishing visual acuity than was generally supposed to be the case, but there was no doubt that it was distressing and should be avoided. A committee of the Society of Illuminating Engineers had reported that the minimum illumination measured at any desk should not fall below 2 foot candles, but for special work, such as drawing, sewing, &c., as much as 4 ft. candles were desirable. For assembly rooms and general illumination a minimum of 5 ft. candle was recommended, or a horizontal plane of 3ft. 3 in. from the ground level.

Dr. MACGILLIVRAY thought there was a tendency at the present time to run riot on this subject. He had never seen organic trouble produced by the wearing of improper glasses.

Dr. F. W. EDRIDGE-GREEN (London) said that some physiological facts had an important bearing on the subject, and the explanation was that the centre of the retina was sensitised from the peripheral parts, and it was therefore necessary that the whole retina should be illuminated. Many persons who suffered headache after reading with a reading lamp in an otherwise dark room, or playing cards with a light over the table, lost their headaches when the whole room was lighted up.

Mr. L. A. PARRY (Hove) called attention to the large number of rooms in elementary schools which were improperly lighted. The whole or main source of light should come from the left. In most schools badly printed books had been abolished, and also fine sewing for young children.

Dr. REEVE spoke against the use of highly glazed paper, especially in books intended for the use of children.

Mr. MARSHALL said he had frequently heard people complain of electric light being tiring to the eyes. He thought that it had most of the essentials required for good lighting. It was steady and could be arranged to be of any desired brightness. He thought, however, that people used their eyes far more now electric light was in common use than they did before when they had the trouble of lighting a lamp, and so really the eyes were far more severely used. He spoke of the serious results produced by the looking into the sun or into the electric arc without proper protection, both on the retina and also on the cornea and conjunctiva.

Dr. WOOD spoke of the various suitable and unsuitable papers which were used for books, and defended the glazed variety as the only suitable one for the production of half-tone and other illustrations.

Dr. A. J. BALLANTYNE (Glasgow) said that in view of a general opinion that actual organic harm might result from glare and badly illuminated schoolrooms, the greatest caution should be exercised that no loose statements to this effect should be made which could not be proved. They might get claims made by workmen founded on such statements. A sound scientific knowledge should be arrived at which could be used as a basis on which to work.

Dr. MARION GILCHRIST (Glasgow) said that the eyes of children were taken far more care of than formerly, and she was of opinion that badly fitting spectacles were most harmful.

Dr. HARSTON thought that the more the subject was ventilated the better. In the tropics electric light was often used all day on account of the necessity of drawing blinds to keep out the sun. Many people employed in decoding messages sent by cable had the most trying work to do as regards their sight.

Mr. PARSONS, in reply, said that he considered the subject of the greatest importance, and Dr. Edridge-Green had opened up a very important point. He thought that the electric light was responsible for a great deal of discomfort to the eyes, and it was a fact that all the recent illuminants made use of the violet end of the spectrum far more than the red end, as was illustrated by metallic filament lamps and incandescent gas mantles.

Dr. A. MAITLAND RAMSAY (Glasgow) opened a discussion on

The Teaching of Ophthalmology to Medical Students.

He said that in the Scottish medical schools the teaching of ophthalmology was compulsory, but the number of hours devoted to it was entirely inadequate, and with the exception of the University of St. Andrews no examination in the subject was held. Very occasionally an eye question was set in the medical or surgical papers, but the lecturers in ophthalmology took no part in the examination. This contrasted badly with the arrangement in Ireland, continental Europe, and many of the schools in America, in which it formed an important part of the final examinations. So many subjects were compulsory that unless an examination was held on a particular subject but little work would be done by the students in that subject. Ophthalmology should not be looked upon as a special subject, but should form an integral part of medicine and surgery. Country practitioners would frequently be called upon to treat eye cases, and some guarantee was necessary that they would be capable of recognising the ordinary eye diseases. The aim of teaching should be to put the student in the possession of these essential facts. He should be taught how to conduct an examination on so important an organ as the eye. He should know how to investigate a refraction case, even if he did not know much about the treatment of it.

Mr. M. L. HEPBURN (London) detailed the methods adopted for teaching students at Moorfields. He deprecated set lectures, but strongly advocated practical clinical instruction.

Miss E. M. MAXWELL (Dublin) stated what was the practice in Trinity College.

Dr. HARSTON said that the new University in Hong-Kong had appointed him to be professor of ophthalmology, and much attention was paid to the subject.

Dr. GRIFFITH, Mr. A. F. MACCALLAN (Cairo), Dr. REEVES, Dr. WOOD, and Mr. PARSONS all spoke to the various practices of the universities and colleges with which they were connected.

Mr. BICKERTON proposed the following resolution:—

> That the members of the Section of Ophthalmology recommend to the Council of the British Medical Association that not only should a course of ophthalmology be compulsory, but that every student should pass an examination in the subject before he obtained his qualification to practise.

This was seconded by Dr. MACGILLIVRAY and carried unanimously.

Dr. RAMSAY gave a demonstration with the epidiascope of coloured photographs showing certain Eye Diseases.

FRIDAY, JULY 31ST.

Dr. GRIFFITH read a short paper on

A Case of Late Infection following Elliot's Operation for Glaucoma.

He said that he did his first trephining for primary glaucoma in January, 1911, and had done in all 125 cases, besides a good many for secondary glaucoma and for other diseases. He was well pleased with the results of the operation. He, however, had had the case of a man, aged 55 years, on whom he did the operation for chronic glaucoma in both eyes. The vision in both eyes was 6/18, and they were both in about the same state of the disease. Both were operated upon. A year later the patient was seen with purulent iridocyclitis in the left eye with tension – 3, exudation in the pupil, and severe injection. The eye was removed three days later. The attack had commenced four days before he had come up for examination. The right eye was satisfactory in every way. He had found 30 recorded cases, including his own, of such late infections, but he thought this must represent only a very small proportion of the total number of eyes operated upon. His confidence in the operation had been shaken, and he felt it his duty to publish the case.

Mr. MARSHALL thought that all eyes in which there existed a cystoid scar were liable to develop iridocyclitis from slight conjunctival infections. He mentioned the case of a lady who was operated upon for double glaucoma in 1887. Iridectomy was done and the case did well. A year later, however, a catarrhal conjunctivitis developed and one eye was lost in exactly the same way as in Dr. Griffith's case.

Professor GIFFORD quite agreed that all cases in which the fistula existed were dangerous, and as a precaution against conjunctival infection he made it a routine practice to insist on such patients washing out the eye once or twice a day with an antiseptic solution.

Mr. PARSONS was surprised that later infections did not occur more frequently than they did. He advocated a very large conjunctival flap and the trephining well forward into the cornea as described by Elliot.

Dr. HARSTON advised the careful examination of all accessory sinuses in these cases for fear of a latent infection therein.

Dr. BALLANTYNE thought the conjunctival flap should be cut as thick as possible.

Dr. WOOD had seen two cases of infection after trephining. One occurred three weeks after the operation and the other six months after.

Dr. RAMSAY thought it most important not to cut the conjunctival flap down to the periphery at its extremities.

Dr. JAMES A. WILSON (Glasgow) thought a thin flap was always dangerous; it should be cut as thick as possible.

Mr. BICKERTON and the PRESIDENT both said that they had seen no case of late infection following trephining.

Dr. GRIFFITH replied that infection did not come about from the extremities of the flap, but through the bleb over the trephine opening itself.

Dr. EDRIDGE-GREEN read a paper on

An Analysis of the Results of the New Sight Tests of the Board of Trade.

He took the published reports of the Board of Trade and carefully drew attention to the facts these brought out. The tests now in use consist of an improved wool test in which five test colours were used, and also a special lantern introduced by the Board of Trade. Of the 286 definite rejections in the local examinations 148 failed in both the lantern and wool tests, and 138 failed in the lantern test only; there was no failure with the wool test which passed the lantern. Of the 286 failures 93 appealed, 26 successfully. Of 125 referred cases 20 were referred on both the lantern and the wool tests, and one on form vision as well. Of this number there were 30 failures; 3 of these were referred on both lantern and wool test, 26 on the lantern only, and 1 on form vision as well. Those referred on the wool test only were passed. These figures did not quite agree with those in the report, which was inaccurate. The results were not tabulated, so that it made it quite difficult to arrive at these figures. If they were, it would settle once for all the question of the efficiency of the wool test even in its improved form. There was no failure with the wool test which passed the lantern. 52 per cent. of the rejected candidates were able to pass this wool test. The wool test as now used was infinitely superior to the form as originally advocated by Holmgren, and yet even so this huge percentage of dangerous cases were able to pass it. He then adversely criticised the lantern as used by the Board of Trade, and pointed out that it almost exactly resembled a discarded pattern of his own.

Mr. PARSONS defended the Board of Trade tests, but admitted the subject was a very difficult one.

Mr. MARSHALL commented on the inadequacy of the Board of Trade tests and the very bad results they got by their own showing. He was glad that Mr. Parsons thought the subject a difficult one, and it was therefore the more incomprehensible that the Board of Trade should justify the employment of ignorant examiners who admittedly knew nothing about eyesight or of eye tests. Under these circumstances he was not surprised to see the bad results recorded officially in this report.

Major MCKECHNIE said that in his opinion the Edridge-Green lantern was the most scientific and the best test there was for colour vision. If the lantern detected all the dangerous cases, and the wools only a few of them, he could see not the smallest justification for the retention of the wool test at all. He thought that a definite standard should be settled upon, and that possibly the Admiralty could help in this respect.

Dr. EDRIDGE-GREEN replied.

Dr. WILSON read a paper on

The Factor of Heredity in Myopia.

On the evidence of 1500 cases he concluded that there was a hereditary factor in no less than 58 per cent. As evidence of hereditary myopia he took the fact of myopia in one parent or brother or sister; or "statements that a parent or relative could see to read, write, or sew without glasses at or over 60 years; habitually passed friends in the street, yet had good near vision; glasses were removed for reading; when reading held paper close to the face." In children he found the sexes unequally affected; the difference increased with age, giving a ratio of 2 females to 1 male—a ratio suggesting sex limitation. The incidence of myopia bore a direct relationship to the amount in the parentage or extraction and there was order in the transmission. There was similar evidence of heredity in high degrees and in low degrees of myopia. No special association with occupation was found and the innate characters indicated independence of environment.

Mr. N. BISHOP HARMAN (London) presented a paper on

The Causes of Blindness in 1100 Children, with Special Reference to the Influence of Venereal Disease.

These children he had seen over a period of ten years, and all of them had been examined many times, and in most cases their parents had been seen also. There was therefore exceptional facility for making accurate diagnoses of the original cause of the blindness. Of the 1100 children no fewer than 58 per cent. owed their pitiable condition to affections produced by venereal disease. Of the total, 24 per cent. were blinded by ophthalmia neonatorum; the remaining 34 per cent. (with an exception to be noted) were blind or partially blind from conditions directly produced by or associated with inherited syphilis. The exceptions were two cases of children who had lost their sight from gonorrhœal conjunctivitis contracted from infants affected with ophthalmia neonatorum. In the syphilitic groups it was of interest to note that children suffering from interstitial keratitis presented positive evidence of syphilis as the primary factor in no less than 90 per cent. The positive evidence was less in the inflammatory states within the globe, such as disseminated choroiditis, but in these there was an unusually high incidence of mental defect of serious order, often amounting to insanity. The high incidence of venereal disease as the primary cause of blindness in children was an indication for activity in checking the spread and for the provision of more effective treatment of these diseases.

THE ANNUAL EXHIBITION.

(Concluded from p. 400.)

III.—SPECIAL FOODS.

The special food section of the exhibition presented few novelties. Most of the specimens shown were well known, although it may be admitted that in several instances their merits are a sufficient reason for keeping them prominently to the front. The preparation known as virol, for example (Virol, Limited, 152–166, Old-street, London, E.C.), has now had the test of clinical experience thrown upon it for a number of years, and the reports are satisfactory. From its composition it is safe to conclude that it contains both lecithin and the vitamines It consists, as we have pointed out in our analytical columns, of bone marrow, red bone marrow, malt extract, eggs, and lemon syrup. It is employed with success in wasting diseases and in cases of malnutrition in infants. Messrs. Brand and Co., Limited (Mayfair Works, South Lambeth-road, Vauxhall, London, S.W.), exhibited a number of "essences" of beef, chicken, and mutton, which have established a reputation for invalid use. Besides these there was a meat juice containing meat albumin to the extent of 5 per cent., the preservation of this important nutritive meat principle in the uncoagulated state being secured by a special process which avoids reaching the temperature at which albumin coagulates. The Horlick's Malted Milk Company (Slough, Bucks) showed specimens of their malted milk in the form of powder and tablet. In the process of manufacture extracts of malted barley and wheat are evaporated with milk to dryness. The enzymes of the cereal extracts appear to modify the casein so that it does not coagulate in clots on the addition of acids as might take place in the stomach. The Liebig's Extract of Meat Company, Limited (Thames House, Queen-street, London, E.C.), exhibited their well-known meat preparations, lemco, a pure extract, and oxo, which is extract to which beef fibrin has been added. There was also a special preparation called hospital oxo, which has received an addition of peptonised beef. Close by was the stall of the Nestlé and Anglo-Swiss Condensed Milk Company (6 and 8, Eastcheap, London, E.C.). Their condensed milk contains the whole of the milk fat. They also exhibited specimens of full cream milk sterilised. Messrs. Bovril, Limited (152–166, Old-street, London, E.C.), presented to view a number of meat preparations, including their well-known bovril, which in addition to extractives contains meat albumin and fibrin, and invalid bovril intended for hospital use containing a high proportion of albuminous principles derived from beef. Messrs. Callard and Co. (74, Regent-street, London, W.) exhibited a number of starchless and sugarless foods intended chiefly for the use of the diabetic. These included sugarless and starchless breads, biscuits, and cakes, marmalades, jams, and beverages, free also from sugar. Among the exhibits of Messrs. Keen, Robinson, and Co., Limited, incorporated with Messrs. J. and J. Colman, of London and Norwich (Denmark-street, St. George's-street, London, E.), was a "patent" barley, which is specially adapted for the preparation of barley water as a beverage or for diluting milk for infants' use. There were also shown specimens of Colman's medical mustard bran for poultices and Colman's concentrated mustard oil for the treatment of rheumatism. Cocoa products, cocoa and chocolate, formed the feature of Messrs. Cadbury's exhibit. The demonstration served to show the care taken to exclude any foreign additions to the ultimate product.

IV.—SANITARY APPLIANCES.

This section included only two exhibits. The germicide cyllin in various forms was shown by the Jeyes Sanitary Compounds Company, Limited (64, Cannon-street, London, E.C.), and examples of sanitarily polished floors were furnished by Ronuk, Limited (16, South Molton-street, London, W.). The Jeyes Sanitary Compound Company included in their exhibit, besides the special preparation of cyllin for medical purposes, cyllin gauze free from fatty matters, cyllin obstetrical lubricant and lano-cyllin used in skin diseases. Ronuk, Limited, exhibited, besides the ordinary ronuk for polishing purposes, a liquid polish which is admirably adapted for polishing the furniture of the hospital ward.

V.—MINERAL WATERS AND BEVERAGES.

Interest in this section lay chiefly in the demonstrations given of the advantages of the two watering places Buxton and Droitwich. At the Buxton stall there were samples of Buxton thermal radio-active water. A carefully compiled book, advancing the claims of Buxton water based on ionic activity combined with radio-activity in the treatment of gout, rheumatism, and general disorders of metabolism, was distributed. Droitwich claims to possess the strongest brine waters known, and here again evidence was brought forward of the value of treatment chiefly in chronic rheumatism at this sheltered health resort. Claims were made also in favour of the radio-activity of these strong saline waters.

Messrs. Ingram and Royle (Bangor Wharf, 45, Belvedere-road, London, S.E.) exhibited a number of specimens of mineral waters drawn chiefly from well-known springs on the continent. The supply of many of these waters will naturally be affected by the war. There were thus represented the Carlsbad water, Contrexéville water, Evian-Cachat, Selters, Vichy, and so on. The exhibit included samples of natural Carlsbad sprudel salt. Friedrichshall water, containing approximately equal amounts of the sulphates and chlorides of magnesium and sodium, was presented by Messrs. C. Oppel and Co. (10 and 12, Milton-street, London, E.C.). It is correctly described as a mild natural aperient mineral water. The stall of the Apollinaris Company (4, Stratford-place, Oxford-street, London, W.) was occupied chiefly with bottles of their well-known natural mineral water, which is drawn from the warm springs at Neuenahr. This water is a powerful antacid owing to the presence of natural alkaline carbonates. There were besides specimens of Apenta water, known for its constancy of composition and its regularity of action as a saline aperient.

Messrs. Gaymer exhibited specimens of their cyder produced at Attleborough, Norfolk, which through its general excellence has rapidly gained favour as a healthful beverage. As is well known, the salts of cyder (chiefly malates of potassium) on metabolism produce alkaline carbonates, and some attach importance to this fact in connexion with the impression that cyder is a useful beverage for gouty people.

VI.—MEDICAL PUBLICATIONS.

There was a fair representation of medical publishers and the opportunity of inspecting recent publications on medical and surgical subjects was obviously welcomed by the visitors. Amongst those who had stalls were the following: The British Branch of the International Abolitionist Federation (books and pamphlets dealing with prostitution and the prophylaxis of venereal diseases); Messrs. John Wright and Son, Limited (Bristol); Messrs. William Heinemann (21, Bedford-street, London, W.C.); Messrs. E. A. Brooke-Williams (8, Henrietta-street, Covent Garden, London, W.C.); Messrs. D. Appleton and Company (25, Bedford-street, London, W.C.); The Oxford Medical Publications (Mr. Henry Frowde, Oxford University Press, and Messrs. Hodder and Stoughton, 20, Warwick-square, London, E.C.); Mr. H. K. Lewis (136, Gower-street, London, W.C.); and lastly The W. B. Saunders Company (9, Henrietta-street, Covent Garden, London, W.C.).

THE LANCET.

LONDON: SATURDAY, AUGUST 15, 1914.

The Medical Profession and the War.

As is well known, the Navy, including the Naval Medical Service, was completely mobilised before the declaration of war by Great Britain, and the medical officers of the Royal Naval Volunteer Reserve were called up from their civilian duties to take their places as naval surgeons. Further, in our last issue we published the announcement that surgeons for temporary service in the Royal Navy were required, while a certain number of senior students to act as dressers under the title of surgeon probationers in the Royal Naval Volunteer Reserve were also invited to make application for service. We learn from the Medical Director-General of the Navy that these announcements at once produced an adequate response, and from the large array of applicants a number sufficient for present needs have been accepted, while from the reserve of trained nurses organised by the matrons of the arge hospitals a suitable quantity has been called up and drafted to the naval base hospitals. We are in a position to say that the medical service of the Royal Navy is fully prepared at every point to carry out the duties which will fall to its lot. Senior members of large general hospitals, including expert anæsthetists, are standing by for immediate duty at the various naval base hospitals to which the sick and wounded will be landed by means of the Admiralty hospital ships, and an ample provision of beds is already available for the reception of convalescent seamen. At the present moment there is happily no need for additional convalescent equipment, but many offers have been received at the Admiralty from private citizens, and these are being noted and sorted by he medical department of the Navy, who recognise hat such accommodation may prove of the greatest value. In this connexion we might point out that a widespread fallacy exists in the public mind as to he use and purpose of hospital ships. The idea seems current that these are of the nature of floating hospitals anchored at some convenient spot off the sea coast or in harbour, in which sailors recover from wounds and sickness. On the conrary, of course, in hospital ships no wounded or sick are kept a moment longer than is absolutely necessary. Such means of transport would almost better be described as ambulance ships. No one can foretell how long the war will last, but we may repeat that for the time being the medical service at sea and in port is efficient and sufficient, while provision is being taken for the future. If further help in any direction is sought it will be our privilege to announce the kind and extent of the need, and to support the medical departments of both services of the Crown to the utmost of our power.

The embodiment of the Territorial Force which took place last week has already drawn considerable numbers of medical men from civilian practice into active military service. The Territorial Force Medical Service consists of 14 mounted brigade field ambulances and 42 field ambulances, together with the Sanitary Service and the 23 general hospitals, whose *à la suite* medical and surgical staffs become available on mobilisation. We published in our Services column last week an invitation to civilian medical practitioners desiring to serve at home or abroad as temporary surgeons with the army to apply to the Secretary of the War Office, together with the conditions under which such appointments would be made. We learn now from the Director-General of the Army Medical Service that the response to this invitation has been excellent, and that applications have continued to pour in to the Medical Department of the War Office during the days which have passed since its publication. Immediate requirements are now more than satisfied, but additional offers of service may be made and will be dealt with as future occasion demands. We are also authorised to state that the medical equipment of the Expeditionary and Territorial Forces have never been in a higher state of efficiency, and that all the arrangements are perfectly in order for the medical treatment and nursing of the wounded and sick. Everything which organisation and foresight can suggest has been carried out promptly and efficiently, and the public and the medical profession may feel entire confidence on this score. Generous offers from private citizens for the accommodation of invalid combatants have also poured into the War Office, but we are asked to say that all such offers of voluntary aid should be submitted, in the first place, to the British Red Cross Society, Devonshire House, Piccadilly, London, W. This society has undertaken the task of preliminary coördination for the Director-General of the Army Medical Service, who will thus be able to call for help from time to time as circumstances dictate. On all sides the general hospitals of the country are sparing as much as possible of their personnel that the defence of the country may be perfected in all its branches. It is recognised by everybody that the ordinary charitable institutions must not be depleted below a certain line. The line can be drawn far down by the willingness of everyone to work without thought of time or labour, but the general hospitals may be called upon to fulfil even more than their ordinary functions, and this must be remembered.

The huge amount of quiet work in the shape of voluntary aid which has been done all over the country for the last three years is now to be tested. The gap in the nursing and medical department of the Territorial Army is to be filled by Voluntary Aid Detachments, men and women, but it is the construction of the latter that we wish to indicate here. To take a typical county, say Kent, upon whom the first brunt of duty will probably fall, we find scattered all over the area, even in quite small towns, sections, 50 in number, consisting each of one lady commandant, one quartermaster (superintendent of stores), one lady superintendent, who must be a trained nurse, and 20 women (four of whom must be qualified cooks); a medical officer may or may not be attached to each detachment. All these women must hold a certificate in first aid, and a further certificate in nursing, as issued either by the Red Cross Society or by the St. John Ambulance Association or certain other bodies approved by the War Office. The local control of these detachments is vested either in the Territorial Association of the county or in one of the bodies mentioned above, usually at the discretion of the Territorial Association. In either case the detachments have been periodically inspected by the Royal Army Medical Corps authorities, and the dispositions made for the reception of wounded have been similarly examined and approved. The War Office has also scheduled the equipment which must be furnished for temporary hospitals. Each detachment has retained certain buildings, usually schools, public halls, club-rooms at inns, and other large rooms, where domestic offices of some sort are attached or can be improvised. These have been arranged either to form clearing hospitals and larger rest stations dealing with up to 200 sick and wounded, or entraining and smaller rest stations for 50 cases for the night. The concentration of cases is not always easy to arrange, on account of the lack of suitable large buildings, but in some instances it is being done. One detachment in Kent is fortunate enough to have been given the loan of a large empty mansion capable of accommodating 70 cases, and a very little adaptation is bringing the bath and lavatory accommodation to the requisite level. In the same town there is an adjacent building capable of receiving 50 beds, and the schools and public hall are still available. But the actual beds, linen, and much of the furniture have been promised on loan by the inhabitants, and carefully listed and inspected by the quartermasters. In many small places the difficulty is not the buildings but the equipment. If the nurses are insufficient in one area of the country, arrangements are being made to obtain the surplus from other areas. Near main lines and railway junctions preference has been given to providing rest stations for preparing and serving meals and refreshments to sick and wounded during transit by railway, and the women's detachments are to take charge, in the evacuation stations or temporary hospitals, of such severe cases as are unable to continue the journey. Returns have not yet been made as to the number of Voluntary Aid Detachments which are in working order, but it is believed that over 50,000 men and women detachments have been enrolled and at work months ago, a number which ought to be a very useful supplement to that of the trained nurses available for military work in England. While we may congratulate the women of England, drawn from all classes, who have thus devoted themselves to patriotic duty, it is impossible, on reading the official accounts of similar bodies in Germany, Austria, and France, to avoid the conclusion that a higher standard of efficiency is demanded on the continent; but the public in this country has not hitherto been generous to the Voluntary Aid Detachments.

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Prescribing of Narcotic Drugs.

BY the terms of the International Opium Convention new regulations will have to be introduced in Great Britain to prevent the illicit distribution of opium, morphine, and cocaine. In several continental countries this question has been regulated for a considerable period, whereas in England the sale of these drugs will have to be placed on an entirely new basis. At present the retail sale of these narcotic drugs is confined solely to registered pharmacists who are required to observe certain formalities, such as entering the sale in the poison book and labelling the poison with the name of the article, the word "Poison," and the name and address of the seller. Otherwise, beyond the observance of these mere formalities, there are no restrictions on the sale of any of the scheduled poisons. With regard to poisons dispensed as a prescription, there are no legal safeguards against the unlimited repetition of a medicine consisting wholly or in part of potent drugs, and the prescriber has no authority to prevent the abuse. In continental countries the position is totally different. These potent drugs, capable of medicinal application only, are placed in a category by themselves and withdrawn from ordinary commerce. Not only is their sale restricted to registered pharmacists as is the case in Great Britain, but to prevent their indiscriminate use by the public they may be sold only on a medical practitioner's prescription, thus ensuring their use under professional control. In Great Britain a proprietary preparation may contain a potent drug, and provided that the provisions of the Pharmacy and Poisons Act are observed it may be freely sold, whereas abroad the same preparation is obtainable only on presentation of a qualified doctor's prescription. Nor do the safeguards taken end here. In most countries the repetition of a prescription calling for a potent drug is either forbidden or subject to certain restrictions, so that the owner of the prescription is unable to obtain a further supply of the medicine without the concurrence of a practitioner. It will be seen that to comply with the terms of the International Opium Convention the sale of these potent drugs will have be placed on an entirely new basis—from being eated as articles of commerce, the sale of which surrounded by certain formalities, they must ecome medicinal agents which can be obtained nly on a prescription, and even then this docu- ent will not confer the right to obtain an nlimited supply of the medicine, for its repeti- on will be at the discretion of a medical ractitioner.

The question now arises, What steps must be ken in Great Britain to give effect to the terms of e Convention? As the pharmacist is already e sole legal vendor of poisons the simplest ourse would be for the Government to frame ew regulations for the sale of these narcotic rugs in accordance with the spirit of the terms f the International Opium Conference and enforce eir observation by all pharmacists, since the latter re the persons through whom the public obtains ese drugs. In illustration of the application of the estrictions to be placed on the sale of narcotic rugs in this country the regulations in force broad may be briefly reviewed. In the first place, one of these drugs—in most countries a large umber of other potent drugs are also included—may e sold except on presentation of a qualified medical ractitioner's prescription (or of a dental surgeon, r veterinary surgeon in respect of drugs for animals nly), so that interest centres chiefly around the egulations dealing with the repetition of such rescriptions. In Italy the pharmacist is compelled keep all prescriptions for poisons, thus effectively reventing their repetition, as a copy of an original rescription cannot be filled unless signed by a octor. The new Norwegian pharmacy law pro- ibits the repetition of a prescription calling for ertain potent drugs, unless the doctor distinctly tates on the prescription that it may be repeated, ndicating also the number of times, but the validity f the prescription expires at the end of a year. It ay be mentioned in this connexion that in most uropean countries the doctor is required to sign is name in full on a prescription and also write ut the patient's name, and in Austria the latter's ddress. The German regulations are still more laborate. In the first place, there is a list of 161 otent drugs, none of which may be dispensed except pon presentation of a prescription. This list ncludes, *inter alia*, such substances as acetan- lid, calomel, sodium salicylate, and phenacetin, hich are not even scheduled poisons in Great ritain. As regards the repetition of prescrip- ions, no medicine intended for internal use, nhalation, hypodermic injection, or eye lotions, nemata or suppositories, may be repeated, unless igned and dated on each occasion by a medical an, if it contains any of the following rugs: chloral hydrate; chloral formamide; mor- hine, heroin, cocaine, or their salts; prepara- ions of ethylene; amylene hydrate; paraldehyde; sulphonal; trional; urethane; and veronal. A slight concession is made in favour of medicines contain- ng small quantities of morphine or heroin. A medicine containing altogether not more than ½ grain of morphine or one of its salts, or ¼ grain of heroin, may be repeated without the renewed signature of the doctor, provided that the morphine or heroin is present merely as an adjuvant to other drugs, and is not itself the principal therapeutic agent. As regards the repetition of prescriptions containing any other of the 161 drugs specifically mentioned, this is automatically regulated by the provision of a maximum repetition dose for each drug.

We now come to another important safeguard which is absent in Great Britain. In Germany and in many other continental countries the doctor may write on a prescription a remark to the effect that it is not to be repeated, or may fix the number of repetitions and the period during which the medicine may be repeated. These directions are legally binding on the pharmacist; of course, they apply only to those drugs the sale of which is subject to restrictions—viz., potent drugs. The objection has been raised that legislation requiring the renewed signature of a doctor prior to repeating a prescription imposes a heavy financial burden on the patient, who is thus compelled to pay the doctor's fee each time, quite overlooking the fact that this safeguard is provided in the patient's interest. To bring conditions in Great Britain into line with those abroad, and thus give effect to the terms of the Convention, regulations will have to be introduced forbidding the sale of certain potent drugs except on a qualified practitioner's prescription, which will have to be signed with the prescriber's name and not simply initialled—in most continental countries the doctor's name is printed as a heading on his prescription blanks. The repetition of such prescriptions will have to be forbidden unless enforced on each occasion with the renewed date and signature of a medical man; or the prescriber may indicate on the prescription that it may be repeated a certain number of times within a specified period, while on making the medicine up the pharmacist would affix his stamp, with the date, each time to prevent the patient from having it repeated over the specified number of times. The powerful patent medicine interests will insist that a minimum amount of morphine should be permitted as an admixture to other drugs, the amount to be stated on the label, and the Government, having regard to the profits of the revenue, will be disposed to look favourably upon such a proposal.

Tunbridge Wells General Hospital.—A new escape staircase completing an elaborate system of fire apparatus at the Tunbridge Wells General Hospital was opened by the mayor (Councillor C. W. Emson) in the presence of an influential gathering of townspeople on July 20th. Opportunity was afforded of a visit of inspection of the various departments and wards, and demonstrations were given in the radium and X ray laboratories.

Annotations.

"Ne quid nimis."

IS PELLAGRA A DEFICIENCY DISEASE?

THE incidence of pellagra is undoubtedly increasing in some parts of the world, in the southern part of the United States, for example, but unfortunately the etiology of the disease remains, so far, undetermined. Much time and labour have been spent in researches on this malady, and especially in attempts to discover its specific parasite, all equally unavailing. The attention of some investigators has lately been directed to the question whether, after all, pellagra may not properly be classed among the so-called deficiency diseases. One of the foremost exponents of this view is Captain Edward B. Vedder, of the Medical Corps of the United States Army, who is well known by his work on experimental beri-beri in the Philippine Islands, and who not long ago explained his opinions regarding beri-beri and pellagra in the *American Journal of Tropical Diseases*. It is suggested that the increased incidence of pellagra in the United States coincides with the introduction of modern methods of milling maize and other cereals, the new process depriving the grain of the vitamines contained in its superficial layers. If pellagra is a deficiency disease its relation to maize is similar to that of beri-beri to rice. The consumption of maize itself is not injurious, but when it or other cereals under modern methods of preparation are too exclusively used a deficiency arises of some unknown substance, or vitamine, necessary for metabolism; when the whole grain is used this deficiency does not arise. Pellagra may originate from other articles of diet, apart from maize, when they do not contain a sufficiency of the pellagra vitamine. Decorticated maize as a staple article of diet is likely to cause pellagra just as the consumption of over-milled rice for any length of time will give rise to beri-beri. There are reasons for believing that a too exclusive diet of canned food, in which the vitamines have been altered or destroyed in the course of preparation, is liable to cause or at least to assist in causing diseases of the deficiency class. Another champion who has entered the lists in favour of the deficiency theory of the origin of pellagra is Surgeon Joseph Goldberger, of the United States Public Health Service, who has quite lately set out his views on the subject in the official journal, *Public Health Reports*, calling attention specially to certain epidemiological observations, the significance of which has not yet, he thinks, received the attention which it deserves. He brings forward a number of reports and details of gaols, asylums, and other public institutions in which pellegra has attacked the inmates, but leaving untouched the nurses, attendants, and other employees living under precisely the same conditions and often in close association with those who were attacked. In some instances the disease developed after 10 or even 20 years' residence in the institution. If pellagra be a communicable disease these facts are difficult of explanation; neither "contact" in any sense, or yet insect-transmission of the virus, explains the different incidence in the two classes. Dr. Goldberger seeks an explanation in a difference in the diets. It is true that in some establishments the staff and inmates have separate dietaries, but in other institutions the diets of both groups a nominally the same. But closer inquiry shows the latter that there is a difference also, for t employees have the privilege, which they invariab exercise, of selecting the best and greatest varie of food for themselves; moreover, they ha opportunities, which are denied to the inmat of supplementing the institutional dietary fro various sources. It is now generally recognis that pellagra is often associated with pover and poor living, and that the disease mo frequently occurs in rural districts than towns. There is plenty of poverty in cities, b pellagra does not manifest itself in such place This exemption is explained again by differences diet. Studies of rural and urban dietaries ha been officially made in some parts of the Unit States, and it is thereby shown that on the who the poorer classes in the cities have a more vari diet than the same kind of people living in rur areas. One report states that "except in extrem cases the city poor appear to be better nourish than the mountaineers" (of Tennessee). Examination of some institutional dietaries reveals a high proportion of cereals and vegetables than is fou in the food of the comfortably off classes. Thoug the consumption of maize and its products is n essential for the origin of pellagra, this does n mean that maize and its products, however nut tious and however high in caloric value they ma be, are not objectionable when forming by ther selves, or in combination with other cereals, large part of the usual diet of individuals. D Golberger urges that, pending the settlement the precise causation of pellagra, efforts shou be made to prevent the occurrence of the disea in institutions by improving the dietary, reduci the amount of cereals, vegetables, and canned foo so largely used in the United States; and tha an increase should be made in the amount of fres animal food, including fresh meat, eggs, and mil The origin of pellagra is being examined at prese in various countries by commissions, committee and private investigators; in addition, we lea from Dr. Goldberger that "intensive studies" alo the lines above indicated are being conducted experts belonging to the United States Public Heal Service. These combined researches attacking th problem from different points must, we thin succeed before long in throwing light upon th etiology of pellagra. Meanwhile, the views pu forward by Captain Vedder, Surgeon Goldberge and others seem to deserve careful consideratio by all who are engaged in studying this importa but puzzling malady.

DEAFNESS IN AMSTERDAM SCHOOL CHILDRE

K. van der Wal[1] has investigated the hearing o 7433 school children in Amsterdam, testing ther with the whispering voice normally audible wit each ear separately at a distance of 6 metres over 89 per cent. of the children passed this tes satisfactorily. Nearly 5 per cent. of the childre were more or less deaf in one ear, nearly 6 pe cent. in both ears; and in the latter class, whic contained 441 children, 200 could not hear th whispering voice at 3 metres, and 69 failed a 1 metre. 802 children showed some degree o deafness on one or both sides; in their 1604 ear the deafness seemed due to cerumen in 263 ears to disease or indrawing of the drum in 952, an to otitis media in 161. Examination of the naso pharynx in 698 of these 802 children proved that 375 of them had adenoid vegetations. The cause of the deafness, in fact, almost always lay in the sound-conducting apparatus of the ear; in only 10 children was it due to any lesion of the nervous apparatus of hearing. Van der Wal compares the results of his examination with the details as to deafness furnished by the teachers of the children. The teachers estimated 494 of all the children to be hard of hearing; he found that 233 were more or less deaf, while 261 had normal hearing, and he points out that the deafness of 569 children had passed unnoticed by their teachers, and that only 62 out of 140 children who could hear the whispering voice at less than 2 metres were noted as deaf, and only 36 out of 69 who could not hear the whispering voice at 1 metre. He next compares the intelligence of the children with their ability to hear. Out of 5632 set down by their teachers as intelligent 9·4 per cent. were more or less deaf; out of 1641 said to be moderately intelligent or stupid 231 showed deafness, or 14·1 per cent.; out of 160 said to be backward 41 were deaf, or 25·6 per cent. Out of 6631 children with normal hearing 1529 were said to be stupid or backward, 23 per cent.; of 802 more or less deaf children 272 were set down as stupid or backward, 34 per cent.; of the 42 who could not hear the whispering voice at ½ metre distance 22 were said to be stupid or backward, and the teachers were unaware of the deafness in 7 of these 22. As a result of these investigations 214 of the deaf children received treatment at an aural polyclinic, and van der Wal investigated their hearing again after the treatment. Great improvement in the hearing followed as a rule, particularly when adenoids had been removed. The tabulated figures are too numerous for quotation here. The author concludes by noting that about 30 per cent. of school children are said to suffer from adenoids, and calls for the more thorough investigation and treatment of adenoids and deafness in school children.

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[1] Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam, 1914, 697.

BILATERAL SARCOMA OF THE UNDESCENDED TESTES.

THE literature of malignant diseases in undescended testes is scanty. Dr. Kenneth Bulkley, of New York, in a valuable paper published in Vol. XVII. of *Surgery, Obstetrics, and Gynæcology*, stated that after an exhaustive search of the literature he had been able to find only 57 cases, to which he added two observed by himself. Sarcoma of one type or other occurred in 40 out of the 59 cases. The side affected was reported in 56 cases; in 30 it was the right, in 24 the left, and in 2 bilateral. In the *Boston Medical and Surgical Journal* of May 28th Dr. Oliver C. Smith has reported another bilateral case. After a careful search of the "Surgeon-General's Catalogue" he could not find any other case in addition to the two mentioned by Dr. Bulkley. His patient was a married farmer, aged 38 years, who had no children. He enjoyed good health until the onset of his present trouble. In childhood both testes were absent from the scrotum, but occasionally the left could be felt in the canal. At the age of 30 he suffered from parotitis complicated by painful swellings in the inguinal canals. These entirely subsided. Two months before he came under observation he noticed an enlargement in each inguinal canal, of which the right was the larger. They grew rapidly and the right produced some pain. He was a tall, sinewy man, rather slow of comprehension, and with masculine traits not well marked. The prostate and seminal vesicles were normal to palpation. Both iliac fossæ and inguinal canals were occupied by large fluctuating tumours. The right extended above the umbilical line and was bulging. The left tumour was less tense, and through the fluid could be palpated a solid ovoid mass. Both testes were absent from the scrotum. Bilateral hydrocele, with tumour of both testes high in the inguinal canal, was diagnosed. Under ether an oblique incision was made on the right side parallel to Poupart's ligament over the centre of the tumour, and the external oblique fascia was split as in the operation for hernia. An enormous fusiform cyst of the tunica vaginalis was found, containing 750 c.c. of clear straw-coloured fluid and a hard irregular mass at the upper part. The tissues of the cord were dissected beyond the internal ring. The vas deferens was followed as far down towards the pelvis as possible and removed. A similar operation was performed on the left side, where the quantity of fluid found was half that on the right side. Primary union was obtained. The growths proved to be large round-celled sarcomata. From the statistics collected by Dr. Bulkley it appears that malignant disease of the testicle occurs 15 times as frequently in the undescended as in the scrotal testicle. Dr. Smith draws the curious inference that it is important therefore to place the undescended testicle in the scrotum during childhood, by manipulation, massage, or operation. Surely the disposition to malignant disease is connected with imperfect development of the organ and not with the mere fact of its situation.

ANENCEPHALY: SURVIVAL THREE AND THREE-QUARTER YEARS.

THIS is a unique case—that of a child which lived for nearly four years with complete absence of both cerebral hemispheres. The account of the case is by L. Edinger and B. Fischer.[1] Previous cases of this character which have been reported in the literature have, at most, only survived a few days. Life in the present example, if life it can be called, continued for three and three-quarter years. It was a long torpor, a profound type of somnolence. There was complete immobility of the skeletal structures, but in response to some forms of painful stimulus there appeared some irregular facial movements. Anything approaching the faculty of attention was never seen; the creature was never able to hold any object. At the age of two years it could cry, and pressure upon the head caused it to cease momentarily. There was absence of any signs of reflex activity with the necessary exception of the act of sucking; this was preserved and so maintained singly the necessary mechanism for the preservation of life. The necropsy showed absence of the neopallium; there was complete atrophy of the optic tracts. There was complete absence of pyramidal columns and association tracts. The case demonstrates in a striking manner the necessity for complete cortical representations, even in the earliest years, if life is to be normally fulfilled. Comparing the state of affairs in this infant with what obtains in a dog whose cerebral hemispheres have been ablated, it is found that the latter presents a relatively much greater power of recovery; a greater faculty for the lower centres to assume or partially relegate to themselves functions hitherto dependent upon cortical control. There is a notable feebleness in the ability to depute function in the child. The authors came to the conclusion that the infant under these conditions has less functional aptitude than a fish or a frog deprived of its cerebrum. The account of the case is full and complete both clinically and pathologically and is well worth reading.

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[1] Pflüger's Archiv für gesammte Physiologie, 1913, p. 535.

PAIN IN THE LEFT SHOULDER AS A SYMPTOM OF DUODENAL PERFORATION.

IN the *Maryland Medical Journal* for July Dr. A. A. Matthews has described a symptom of perforation of the duodenum which does not appear to have previously received attention—pain in the left shoulder. In four cases out of six reported by him it was a prominent symptom. He thinks it must be often present, but is overlooked in consequence of the attention being centred on the abdomen. The pain is referred to the left shoulder and not to the upper part of the left side, back, or upper part of the chest, as it often is in ulcers on the posterior surface of the stomach. The following are examples. A miller, aged 36 years, began to have slight attacks of indigestion 14 years before. He felt discomfort in the upper part of the left side of the abdomen and soreness, especially on pressure, which had been almost constant for some time. After feeling unusually well for a few days and eating a heavy meal he was seized with pain in the upper abdomen while going upstairs, so severe that he fell and rolled down the stairs. After a short time the pain appeared to be principally centred in the left shoulder. Abdominal tenderness was excruciating, and he vomited several times. Dr. Matthews saw him in consultation about 20 hours after the onset. The abdomen was much distended, the eyes were sunken, and the general condition was bad. Tenderness was too great for examination. An abdominal catastrophe, probably perforation of an ulcer, was diagnosed. On opening the abdomen through the right rectus muscle a considerable quantity of muddy fluid and a perforation "at the beginning of the pylorus" were found. The ulcer was sutured and a stab wound was made above the pubes for drainage. Recovery was complicated by pleuritic effusion, which was aspirated twice, and then became purulent, necessitating resection of a rib. In another case a man, aged 40 years, was quite well until three or four years ago, when he began to suffer from pain in the upper part of the chest. Recently food taken late at night caused considerable gastric disturbance. About two weeks before the attack he began to suffer from pain in the upper chest. He said that food would lodge in his stomach and remain there like a ball. When he awoke in the morning he felt perfectly well, but a couple of hours after breakfast he had a gnawing sensation in the stomach and occasionally vomited. He was seized with violent pain in the upper abdomen and vomited several times. Dr. Matthews saw him in consultation 40 hours after the onset. The abdomen was much distended, he vomited persistently, and had been hiccoughing for 36 hours. The first thing of which he complained to Dr. Matthews was severe pain in the left shoulder, which had been present since the onset of acute symptoms. The point of greatest tenderness was in the right upper epigastric region. A right rectus incision was made and the abdomen was found full of purulent fluid. There was a perforation on the posterior surface of the first portion of the duodenum. Convalescence was complicated by a subphrenic abscess.

Dr. Christopher Addison, M.P., has been appointed Parliamentary Secretary to the Board of Education.

IN view of the outbreak of war the publication of the new edition of the British Pharmacopœia has been indefinitely postponed.

Dr. E. Magennis has been appointed by the Apothecaries' Hall of Ireland as Representative on the General Medical Council.

GUN DEAFNESS AND ITS PREVENTION.

BY JOBSON HORNE, M.D., B.C. CANTAB.,

SURGEON TO THE METROPOLITAN EAR, NOSE, AND THROAT HOSPITAL.

"DEAFENING" is a term which, unfortunately, when applied to a loud and sudden noise cannot be regarded to-day as a mere hyperbole of speech. It is a matter of common knowledge that constant and loud noises have an injurious effect upon the hearing. Inquiries show that a large proportion of men, such as boiler-makers and others, whose work is in the midst of noisy surroundings are liable to dulness of hearing and ultimately to become deaf. It is also known that in sportsmen deafness may originate from a similar cause. Even the shriek of a railway whistle, especially when passing through a covered station, may produce a serious deafness.

Causation and Nature of the Injuries.

At the present time we are more concerned with the injurious effects to the organ of hearing resulting from very loud noises, perhaps sudden and unexpected, such as the report of a piece of artillery, the shock and concussion of an explosion, or the firing of a cannon close to the ear. The injurious effects of the shock or of the concussion are upon the terminal portion of the nerve structures of the ear. The damage done to the internal ear may result in irremediable deafness. At times the concussion may be so severe as to cause even rupture of the drum of the ear.

Surgeon-General Suzuki, of the Imperial Japanese Navy, who, as surgeon-in-chief of the combined fleets, served on board the flagship *Mikasa* under Admiral Togo in the Russo-Japanese war, has embodied some pertinent facts in a paper read before the annual meeting of the Association of Military Surgeons, U.S.A., entitled "Notes on Experiences during the Russo-Japanese Naval War, 1904–5." In that paper he states that he received from the surgeons serving in the fleets many reports as to rupture of the tympanic membrane and concussion of the labyrinth of the ear during firing. It appears that the total number of casualties in the Japanese navy from February, 1904, to August, 1905, was 3682; of these, 1891 were killed outright and 1791 were wounded—of the latter 117 died from their wounds. One cannot help pausing to admire the excellent result of the efforts under most arduous and difficult circumstances of the Japanese surgeons and the success of Surgeon-General Suzuki's administration. The list of wounded includes 116 cases of concussion of the labyrinth and rupture and congestion of the tympanic membrane, that is approximately 7 per cent. of the wounded who survived. It therefore follows that in modern naval warfare injuries to the function of hearing which may result in irremediable deafness have to be considered. Moreover, the liability of distressing head noises supervening on an irremediable deafness gives the matter a still stronger claim upon the most careful consideration for its prevention.

The injuries to the drum and to the nerve endings are due to the sudden condensation or rarefaction of the air in the external auditory meatus. One ear is generally more affected. The question which ear throws some light on the precautionary measures to be adopted. Among sportsmen the left ear, as a rule, is affected. As an exception to this rule, I may cite the case of a well-known shot recently under my care, in whom the right ear was affected; that was an exception that proved the rule, for he shot from the left shoulder. Owing to the way in which the head is inclined when a man shoots from the right shoulder the left ear is nearer to the muzzle of the gun, and vice versâ. In other words, it is the ear which is nearest to the muzzle that suffers first.

Preventive Measures.

Gun deafness is in a very great measure preventable. What are the precautionary measures? In the matter of field artillery, whilst the development of modern weapons of warfare has been the means of increasing the mortality, it would appear that the development has also been the means of diminishing the tendency to a lifelong misery of deafness and tinnitus. Professor Politzer, of Vienna, in the last edition of his work on Diseases of the Ear, whose opinion would be based presumably upon statistics of deafness in the Austrian army, says that the ruptures of the membrane which were formerly so frequently seen in artillery men are now scarcely ever met with since the introduction of breech-loaders. This is explained by the fact that the serving party withdraws to a distance of about 12 paces excepting one man who attends to the firing and who also stands at a considerable distance from the gun; by this means the men are protected from the action of the intense sound. This prophylactic measure is not equally applicable to the navy, but in naval firing the nearer a man is to the muzzle of the gun the greater is the risk of injury to the hearing, and the ear nearest to the muzzle is the one more liable to be damaged.

A prophylactic measure is to keep the mouth open, so as to equalise the atmospheric pressure on both sides of the drum of the ear in the external meatus and the Eustachian tube. The value of this precaution naval officers have found out, for it is not an uncommon practice amongst them to chew a toothpick whilst big guns are fired. By so doing they find that the unpleasant after-effects upon the ears are considerably minimised. A toothpick, however, does not offer sufficient resisting power to the closing of the teeth; a piece of indiarubber would be more effective. It follows from what has been said that any pre-existing obstruction to the passage of air up the Eustachian tube, whether in the tube itself or in the nose, must be removed. It also follows that when obstruction of the tube exists gun deafness is more likely to ensue.

The Use of Aural Plugs.

I now pass to the consideration of the use of plugs in the ears and of the form of plug most suitable for the purpose. At the time of the Russo-Japanese war I have some recollection of seeing the Japanese sailors represented in the press as throwing themselves full length, face downwards, on the deck with their finger-tips in their ears during the firing of guns. The drawbacks to this precautionary measure are that the finger-tips cannot be aseptic during a naval engagement, and further that every seaman does not possess the needful agility.

In the paper already cited Surgeon-General Suzuki expresses his sorrow that he did not know what was the best way to prevent these injuries to the ear, although he had given the matter the most careful attention. He goes on to say that a remedy or preventive appliance which is to be used by several thousand men must not be of a complicated nature, and he could not think of anything more effective than plugging the meatus with cotton-wool. During the period of preparation the surgeons and officers instructed the men of each division as to how to plug their ears. Sterilised cotton-wool was distributed for the purpose not only to the gunners but to the entire crews. Yet both after the battle of the Yellow Sea and after that of the Japan Sea several cases of deafness were brought to the surgeons. These cases he said might sometimes have been due to careless plugging of the ears, but there were some cases in which the ears had been very carefully plugged and yet deafness ensued. In the latter, of course, there might have been the pre-existing obstruction of the Eustachian tube or nose to which I have already referred.

THE LANCET of May 6th, 1911, reported in the Parliamentary Intelligence the interpellation of the First Lord of the Admiralty with reference to this subject. It was then said that the use of cotton-wool was considered by the medical profession to be of little service, and the use of a mixture of plasticine and cotton-wool by the Admiralty on board ship by officers and men was suggested, but Mr. McKenna answered the interpellation as follows: "I am aware that there are many cases of officers and men whose hearing has been impaired for the reason given without resulting in their being invalided from the navy. Tests have been carried out upon various preventives, but opinions differ very widely as to their relative efficiency. An ear paste is already prepared and is issued when demanded."

Now an efficient aural plug should conform to the following requirements. It must be close-fitting and impervious, and whilst reducing intensity of sound doses not prevent hearing; easy to insert and easy to remove intact, no part remaining in the meatus; it must be non-irritating; inexpensive, so that the same plug need not be used repeatedly; and, above all, it must be as nearly antiseptic as possible. Those in use do not comply with this last important requirement. Cotton-wool, when inserted sufficiently tightly, is not easily removed intact. Pieces left behind are liable to cause disease of the ear, and if these pieces are not removed skilfully injuries as well as disease follow. However carefully cotton-wool may be sterilised, it is an excellent medium for picking up dirt, and it does not long remain sterile when handled by men engaged in gun-firing. The ear plugs made of vulcanite, rubber, or celluloid cannot be supplied to fit exactly the peculiarities of any and every ear. Moreover, some forms of aural plugs made of vulcanite, upon being removed after being sufficiently firmly inserted, are liable to break off short, leaving a portion in the ear that is difficult to get out. An ideal plug is one that can be readily moulded to fit exactly the channel of the ear. It must be made of a substance that retains its shape without hardening or softening and remains ever plastic. What is now commonly used, and has been used for some time for this purpose, is similar in consistency to jeweller's wax. For obvious reasons it is important that this material should be rendered antiseptic. And I have no doubt that it will be possible to produce a plug conforming to all the requirements that I have mentioned.

Even in time of peace during gun practice complete asepsis is a matter which is difficult to obtain on board a war ship, and during an engagement it is ten times more difficult, the firing of guns, the hastening to and fro of the men, and a thousand other things must charge the air with dust and particles of matter. The precautionary measure of plugging the ear with a substance that not only breaks the concussion caused by the firing, but also through its antiseptic properties safeguards the ear against infection, serves a double purpose. In the case of a ruptured drum the presence in the meatus of a plug such as I have described, even should it not have been sufficient to prevent the injurious effects of the concussion, would assist in preventing the deplorable consequences of suppurative disease of the ear requiring surgical intervention.

THE WAR.

FOOD RESOURCES IN TIME OF WAR.

WHILST happily there are official assurances that there will be no serious curtailment of the food supplies of this country, it is an opportune moment for considering, in the event of a shortage happening, the possible directions in which this supply could be augmented. In any case it would be foolish not to husband our resources, and the wise housekeeper will commence forthwith to economise and to provide only what is necessary for sustenance. At a time like the present the palate and the appetite may well be subordinated to mere physiological needs. It is not at all improbable that the menace of a shortage of food supplies, shown by prices, will inculcate a very profitable lesson in regard to domestic ways and means, and attention may well be drawn to the economical handling of the common commodities. Waste at all times is unjustifiable, and in a critical period wanton and wicked. There should be no contempt for hashes and stews, and a serious effort should be made to extract every unit of nourishment out of the various articles of food which form our daily bill of fare. Simplicity in diet is all in favour of the healthy working of the human machine, and an enforced adoption of this principle in practice is calculated to do good rather than harm. Fortunately, also, simplicity in diet does not necessarily connote a monotonous régime, for after all there is a wide range of simple things which are available for the purposes of food.

Nothing simpler, for example, could be proposed than a diet of bread, butter, and cheese, and no combination of foods presents a better physiological balance of proteins, carbohydrates, fats, and mineral substances than these three articles. They form, in fact, a complete meal, of which the only expensive constituent is the one of which least is required. We are not likely to be submitted to a shortage in the supply of flour so long as the great sources in Canada and the Argentine are open to us. We are on the edge of the harvest in England, and it is to be hoped that it will prove an abundant one; the labour involved in carrying it may be hampered by shortage of men, and it is to be hoped that some voluntary efforts may be organised to meet the case. It is of interest to add that in the great textile trades big stocks of low grade wheaten flours are kept which are employed for sizing the fabrics in conjunction with the use of "loading" materials, as, for example, china clay. Such stocks, surely, should be reserved in critical moments like the present for the higher purpose of human food. We shall probably find a shrinkage in the supply of butter or of its substitutes, but this could be usefully replaced by the homely dripping caught during the roasting of meat. The use of dripping should come fast into favour, as it is a most wholesome fatty food, probably equal if not superior to butter, and very palatable when its collection is seen to by good housewives. Cheese is prolific in nitrogen, and therefore furnishes us with tissue-forming materials.

Our fish supply may be uncertain, though confidence is expressed that in consequence of diminished exports the quantity available for home needs will be maintained. If that is so, the cheapest flesh food of all will be at our disposal, for herring, either fresh or in its preserved forms, the kipper and bloater, presents the largest amount of nutriment for a given sum of any animal food. Owing to the presence of fat the bloater is an excellent winter food, and its nitrogenous value is high. From a nutritive point of view the herring is not really inferior to salmon. Some of the simple vegetable foods, also, are rich in nitrogenous substances, as, for example, the pulses, peas, beans, and lentils, by means of which some admirable dishes may be prepared. Pease pudding, lentil soup, and haricot beans supply highly nourishing dishes not inferior in this respect to animal products. These, moreover, can be made attractive by simple resources which should be well known to cooks, though years of luxury have sadly dulled the instincts of housewives. Starches are present also in these foods, and as auxiliary supplies of carbohydrate we have the chestnut and the banana. The former deserves more attention than it has hitherto received, for a fact about the chestnut is that a given area of ground produces the maximum amount of human food when planted with chestnut trees. The peasants in central France prepare excellent dishes with chestnut as a principal feature, and it is found to supply an adequate meal sometimes twice in the day. A very plentiful source of starch is maize, the foundation of cornflour, of which there appears to be an abundant supply. It forms the basis of the blanc-mange, a food of decided calorific value and a pleasant accompaniment to stewed fruits. This is an easily prepared dish, which is why, of all the *plats* favoured by our thriftier parents, it is the one that has most commonly survived.

Coming to sugar, the substantial advance already made in the price of this commodity means that we are largely dependent upon the continent for supplies. This may lead to a brisk revival of trade with our West Indian possessions for the shipment of true cane sugar, but here again much depends upon the safety that can be guaranteed for transport by sea. Among excellent sugar substitutes there is glucose, prepared by boiling starch with acids. Glucose is undoubtedly wholesome and nutritious as well as sweet. Its use in preserves is acknowledged, and there is no physiological objection to its consumption; hence it may usefully fill a gap in times of emergency. Sugar, as we are familiar with it now, is produced chiefly from the beet, and the process of extraction is profitable in spite of the fact that the root contains only between 12 and 15 per cent. of the crystallisable product. The suggestion to grow roots in this country has been made, but except for the potato the yield of food substance is small, while the beet needs to be cultivated upon a large scale before any substantial result is obtained.

We would here draw attention to the issue by our contemporary, the *Medical Officer*, of a very timely and useful leaflet entitled "The Best Foods to Buy During the War: the Highest Nutritive Value at the Lowest Cost," which has just been brought to our notice. This is intended for general distribution at the present moment, and sets out in simple language principles almost identical with those outlined above.

Turnips, carrots, and onions possess little nutritive value, and they contain a very large percentage of moisture. Mushrooms are probably more nutritious when carefully prepared and cooked, and in times of extremity might form a valuable and economical addition to the dietary. Their flavour is, generally speaking, much esteemed, and their cultivation might receive further attention with advantage.

Our food is still, and probably will remain for a very long time, dependent upon natural sources. Chemists have achieved many triumphs by methods of synthesis, but it has never been seriously suggested that the various foods employed in the service of man can be produced on the very large scale demanded by bringing together the elements, carbon, hydrogen, nitrogen, or oxygen, which compose them. Still, it is an interesting fact that the world's supply of these elements is extremely abundant, and theoretically we possess in water, carbonic acid, the soil, and the air the foundations of foods according to their chemical composition.

Finally, the times of extremity raise the very important question of the preservation of foods. It is obvious that if in the periods of plenty and uninterrupted supply we were able to consign part of the fresh supplies to a satisfactory process of preservation, the difficulties of meeting the exigencies of shortage when that threatens us with calamity would be reduced. If, in fact, reserves could be made preserves by a simple, cheap, and effective process applicable to all classes of foods, an immense step forward would be gained in the vital question of food supply in times of famine and of war. But that consummation implies keeping our granaries stored, and this is a highly uneconomical proceeding if based upon no plan. A plan would have to be founded upon the expectations of the future, yet who can foresee when an emergency is coming?

GOVERNMENT AND THE RELIEF OF DISTRESS.

WE are officially informed that the Local Government Board have constituted a committee, under the chairmanship of the President, to advise on measures to deal with the distress arising from war. Lord mayors, mayors, and chairmen of councils in each borough and urban district of 20,000 and upwards and in each county exclusive of those areas have been invited to establish local representative committees for distributing and coördinating relief, to be comprised of representatives of local authorities—boards of guardians, distress committees of trade unions, and philanthropic associations. The primary duty of the committees will be to survey local conditions of employment and consider measures for preventing or alleviating distress arising therefrom. Employers are called on to avert to the utmost sudden closing of works and temporarily to fill vacancies caused by mobilisation. If local industries show signs of failing, committees should at once inform the Local Government Board. The local distribution of the Prince of Wales's National Relief Fund is to be entrusted to these committees, which, in cases of acute distress, will also be charged with the coördination of local relief and the prevention of overlapping. The guardians, however, will continue to deal with persons already habitually receiving poor relief, and those boards of guardians which suspend meetings at this time of the year are requested to resume them. Guardians should supply the local relief committees with lists of those now in receipt of poor relief. Registers should be kept by committees of all recipients of assistance from the National Fund, for which purpose the card index system is suggested. Where possible applications for relief should take the form of work for wages, and local authorities will continue to push all works already in progress, and when possible expedite other schemes of public work, and in coöperation with the Distress Committee initiate schemes of work, to be aided by grants made by the Board out of the Parliamentary funds under the Unemployed Workmen Act. Schemes should be prepared in advance by the Distress Committees to be put into execution as soon as any serious lack of employment arises. A circular has been issued by the Board of Education to local education authorities respecting their powers for the feeding of school children conferred by the Act that has just been passed.

ANTITYPHOID INOCULATION IN THE ARMY.

The War Office has issued a communiqué to officers of the Royal Army Medical Corps on the subject of typhoid fever. This states that it can hardly be hoped that improved sanitary precautions will succeed completely in safeguarding the Force from infection, since it will certainly be exposed to three sources of infection, difficult or impossible to control—viz.: (*a*) men in the incubation stage of typhoid who have accompanied or joined the Force; (*b*) unsuspected typhoid carriers; and (*c*) contact with the inhabitants of the country in which typhoid may be present. The preventive value of antityphoid inoculation is now universally recognised and is well known to all who have served in India, but it was not found possible to inoculate the Force on mobilisation. Thus only a small percentage of the men will have been protected, but it should be practicable, by seizing every opportunity, to raise the number of inoculated men very considerably. If a unit is likely to be stationary for a short time advantage might be taken of this, with the consent of the general staff, to inoculate a certain number of men—e.g., a company or half a company, and in this way a whole regiment or other unit might be protected, without any serious interference with its duties. In the same way individual men temporarily disabled by minor ailments, or otherwise available, might be inoculated. It is strongly urged that medical officers lose no opportunity of introducing and carrying through some such system. Antityphoid vaccine has accordingly been sent to the Base Depôt of Medical Stores, and will be issued, as required, on requisition.

WAR AND THE NATIONAL INSURANCE ACT.

Several questions arising out of the war in connexion with the working of the Insurance Act will have to be considered by medical men upon the panels, and a discussion of the subject took place at a recent meeting of the London Panel Committee. The effect of the calling out of the Reserves, both naval and military, and of the embodying of the Territorial Forces will be apparently to remove these men entirely from their position as employed contributors under the Act, and to bring them under the special class of insurance provided for soldiers and sailors by Section 46. They are while serving entitled to receive for their wives maternity benefit only, and an appreciable loss in respect of their contributions will fall upon medical men upon the panels in consequence of their changed status and their removal from their usual abodes. On the other hand, in the areas in which those medical men practise there will be wives and dependents who never have been insured, and some, perhaps many, of these will have to struggle for existence in severely straitened circumstances. At a future date there will probably be a return of persons formerly employed contributors, some to their former status, others in a condition of incapacity arising out of their military service. A large number of medical men, chiefly through the embodiment of the Territorial Forces, will have left their practices at great personal loss to themselves.

At a meeting of the local medical profession on August 4th in Southampton it was unanimously resolved to safeguard the interests of those of their colleagues who are called to leave their practices in the service of their country, and also to undertake any medical duties for the sole benefit of the absentees, and a committee was appointed to facilitate the carrying out of this resolution. This excellent lead is being followed widely.

On August 7th a special meeting of the London Panel Committee was held when practitioners on the panel were asked to express their willingness to undertake free of charge the medical treatment of necessitous dependents of Reservists called to the war and insured persons who had become unemployed because of the war; also to make themselves responsible for the treatment of persons on the lists of practitioners called to service who had been unable to make suitable arrangements. A letter was received from the Pharmaceutical Committee calling attention to the scarcity of certain drugs in consequence of the war, and it was decided to ask practitioners to regulate their prescribing as far as possible in order to husband supplies, which the Pharmaceutical Committee said were none too ample.

H.M. the Queen has become President of a Committee of Ladies of Justice, Ladies of Grace, and Honorary Associates of the Order of the Hospital of St. John of Jerusalem in England to provide hospital, medical, and other comforts for the sick and wounded. Full particulars can be obtained from St. John's Gate, Clerkenwell.

CRYSTAL PALACE AS A HOSPITAL.—The purchase of the Crystal Palace was completed on August 10th, when a cheque for £230,000 was paid to the Earl of Plymouth. The palace and park are now vested in a board of trustees for the use of the people. At the first meeting of the trustees held at the Guildhall Sir David Burnett, who was elected chairman, stated that he had offered the palace and park to the War Office for use as a temporary hospital. His action was heartily approved by the trustees.

THE Alexandra Palace is being converted into a hospital.

THE Great Northern Central Hospital, Holloway, has placed at the disposal of the Government 100 beds for the reception of soldiers and sailors wounded or invalided from active service during the war. Until such beds are needed the usual work of the hospital continues, and the authorities have made full provision for the treatment of all accidents or urgent cases among the poor of North London in the event of the beds being required by the Government.

CARAVANS FOR NURSES IN WAR.—It is commonly known that in previous wars the nursing staff have at times suffered severely from the lack of regular repose and adequate sustenance, none the less severely because they have for the most part accepted the deprivation with heroic loyalty and without murmuring. Mr. J. Harris Stone, honorary secretary-general of the Caravan Club of Great Britain and Ireland, in a letter received by us last week too late for publication, calls attention to the fact that caravans could be used to provide excellent and suitable headquarters accommodation for nurses following the ambulances, both for resting and feeding, complete as they usually are with arrangements for adequate cooking and with comfortable berths for two, and sometimes more, persons. Mr. Stone, therefore, makes a public appeal, not only to members of the Caravan Club, but to all other patriotic owners of caravans, to register their vans with the Club, 108, Long Acre, W.C., giving a description of the van and stating especially its sleeping accommodation, mode of locomotion (one-horse, two-horse, or motor), and cooking facilities, so that this register may be placed at the disposal of the War Office. He has already on the register a considerable number of available caravans, and the scheme has been received with approval by many members of the services. The meet of the Caravan Club that was to have taken place at Mablethorpe, on the Lincolnshire coast, from August 15th to 24th, has had to be cancelled, owing to the necessary restrictions placed on the coast by the military authorities, though we understand efforts are being made to transfer the meet informally to a suitable place a few miles farther inland. The idea of utilising these vehicles to minimise the exacting strain on the nurses during war time is a commendable one, and its realisation would tend greatly to enhance the efficiency of the nursing staff should the fortune of war unhappily demand active service from them on our own shores.

THE SUPPLY OF LOCUM TENENTS.—Mr. Percival Turner writes:—"As usual at this time of year the demand for locum tenens is in excess of the supply, and consequently in some cases demands are being made for fees which many whose practices are small cannot possibly pay. Now we are at war many retired army and navy men who have taken up general practice and others who have duties in connexion with Territorial work have to leave their practices at short notice in order to serve their King and country, and their practices must suffer unless they can get reliable help at reasonable prices. May I therefore appeal with your permission to the patriotism and loyalty of all medical men willing to accept temporary work during war time to be satisfied with as low a fee as possible consistent with the duties required of them? Constant employment can be guaranteed at the rate of 4 to 6 guineas a week."

THE ENGLISH CONJOINT BOARD.—The Examining Board in England by the Royal College of Physicians of London and the Royal College of Surgeons of England give notice that a special Final Examination in Medicine, Surgery, and Midwifery for the Diplomas of L.R.C.P. and M.R.C.S. will be held commencing on Tuesday, Sept. 8th next. Applications from intending candidates should be sent to the secretary, Mr. Frederic G. Hallett, Examination Hall, Queen-square, London, W.C., by August 27th.

THE DUBLIN PROFESSION AND THE WAR.—Our Dublin Correspondent writes:—In Dublin, as in other cities, the medical profession is beginning to feel the pressure of war. Hospitals are already being denuded of house surgeons, dressers, and nurses. Nearly all the younger qualified men have volunteered and been accepted. With them many senior students have gone. The sisters in a number of the hospitals were on the nursing reserve and have been called up for duty. The gaps thus left cannot be filled, but the public and the medical staffs of the hospitals will meet the position cheerfully.

Dublin University has advertised that a special final examination will be held towards the end of August to give senior students a chance of putting their professional services at the disposal of the country, and the Royal College of Surgeons in Ireland and the Apothecaries' Hall, Dublin, are following the same course. Those of the profession whom age, infirmity, or family responsibility prevents from offering their services in the field, are none the less eager to do what they can to serve their country at home. A medical corps is being organised in connexion with the Irish Volunteers, on whose shoulders the defence of Ireland will probably rest. First-aid and nursing classes are being formed without loss of time, and many medical men are giving their services in the instruction of such classes. The organisation of classes has been undertaken by the Department of Agriculture and Technical Instruction, and a small Government grant will be given where the requirements of the department are fulfilled.

WAR MAPS.—We have received from Messrs. Edward Stanford, Limited, Long Acre, London, W.C., copies of three maps which our readers will find interesting and useful in following the progress of the war. Map No. 1 is of Central and Eastern Europe, showing in colours the international frontiers; Map 2 shows Holland and Belgium; Map 3 shows France, with parts of the adjoining countries. These maps are excellently reproduced in colour with legible lettering, and are on a large enough scale to show all places of military importance.

PATRIOTIC FIRMS.—Messrs. Siemens Brothers and Co., Limited, the well-known electrical engineers of Woolwich, have decided to grant their men who have been called upon for service as Territorials or Reservists full weekly wages or time-rate wages, if married, and half wages if single, until further notice.—Messrs. Bovril, Limited, are continuing the payment of full wages to the relatives and dependents of all men in their employment, married or single, who are called up as Reservists or Territorials.

AMYL NITRIS IN EMERGENCY.—Attention may aptly be drawn to Martindale's capsules of amyl nitrite (W. H. Martindale, 10, New Cavendish-street, London, W.). The valuable properties of amyl nitrite in arresting hæmorrhage or overcoming shock are well known. The firm prepares emergency glass capsules containing 1 to 10 minims, wrapped in cotton-wool. The capsule is readily broken by pressure and the wool, soaked with amyl nitrite, is ready for inhalation. Hæmorrhage from bullet wounds can be controlled in this way, as has been pointed out in our columns, while the administration of this powerful vaso-dilator much relieves shock.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, LONDON.—The committee of management of this hospital have arranged to admit the wives of soldiers and sailors on active service without a subscriber's letter of recommendation; or the patients may, if they prefer it, be attended by the hospital midwives in their own homes, provided they live within the hospital out-patient districts.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN the 97 English and Welsh towns with populations exceeding 50,000 persons at the last Census 9464 births and 4192 deaths were registered during the week ended Saturday, August 1st. The annual rate of mortality in these towns, which had been 11·5, 11·6, and 11·3 per 1000 of their aggregate population estimated at 18,120,059 persons in the middle of this year, rose to 12·1 per 1000 in the week under notice. During the first four weeks of the current quarter the mean annual death-rate in these towns averaged 11·6, against 11·3 per 1000 in London during the same period. Among the several towns the death-rate during the week ranged from 3·4 in Exeter, 4·4 in Wimbledon and in Southport, 4·9 in Merthyr Tydfil, 5·0 in Walthamstow, and 6·6 in Ealing and in Coventry, to 17·3 in Middlesbrough, 17·4 in Barnsley, 18·5 in Aberdare, 18·6 in Birkenhead, and 19·0 in Huddersfield.

The 4192 deaths from all causes were 264 in excess of the number in the previous week, and included 549 which were referred to the principal epidemic diseases, against numbers rising from 394 to 478 in the three preceding weeks. Of these 549 deaths, 302 resulted from infantile diarrhœal diseases, 104 from measles, 71 from whooping-cough, 43 from diphtheria, 18 from scarlet fever, and 11 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 1·6, or 0·2 per 1000 more than in the previous week. The deaths of infants (under 2 years) attributed to diarrhœa and enteritis, which had been 112, 151, and 209 in the three preceding weeks, further rose to 302, and included 67 in London, 31 in Sheffield, 19 in Liverpool, 15 in Hull, 14 in Birmingham, 13 in Leeds, 12 in Birkenhead, and 8 in Manchester. The deaths referred to measles, which had been 139, 110, and 98 in the three preceding weeks, rose to 104, of which 35 occurred in London, 20 in Liverpool, 9 in Leeds, 6 in Manchester, 5 in Oldham, 5 in Sheffield, and 4 in Birmingham. The fatal cases of whooping-cough, which had been 77, 73, and 83 in the three preceding weeks, declined to 71, and included 14 in London, 9 in Manchester, 5 in Cardiff, 4 in Leeds, and 3 in Liverpool and in Huddersfield. The deaths attributed to diphtheria, which had been 30, 34, and 46 in the three preceding weeks, fell to 43, of which 8 were recorded in London, 5 in Birmingham, and 2 each in Willesden, Stoke-on-Trent, Nottingham, Birkenhead, Sheffield, and Middlesbrough. The deaths referred to scarlet fever, which had been 22, 26, and 28 in the three preceding weeks, declined to 18, and included 7 in London, 5 in Liverpool, and 2 in Manchester. The fatal cases of enteric fever, which had 13, 12, and 14 in the three preceding weeks, fell to 11, of which 3 were registered in Portsmouth.

The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had steadily increased from 2862 to 3135 in the eleven preceding weeks, had further risen to 3154 on August 1st; 405 new cases were admitted during the week, against 414, 430, and 414 in the three preceding weeks. These hospitals also contained on August 1st 1048 cases of diphtheria, 162 of whooping-cough, 37 of enteric fever, and 26 of measles, but not one of small-pox. The 1049 deaths from all causes in London were 127 in excess of the number in the previous week, and were equal to an annual death-rate of 12·1 per 1000. The deaths referred to diseases of the respiratory system, which had been 111, 128, and 86 in the three preceding weeks, rose to 113 in the week under notice, and were 6 in excess of the number in the corresponding week of last year.

Of the 4192 deaths from all causes in the 97 towns, 164 resulted from various forms of violence and 335 were the subject of coroners' inquests, while 1312 occurred in public institutions. The causes of 39, or 0·9 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in Manchester, Leeds, Bristol, West Ham, Bradford, Newcastle-on-Tyne, and in 84 other smaller towns. Of the 39 uncertified causes, 12 were registered in Birmingham, 6 in Liverpool, 5 in Stoke-on-Trent, 3 in Sheffield, 3 in Gateshead, 2 in Reading, and 2 in Barrow.

HEALTH OF SCOTCH TOWNS.

In the 16 largest Scotch towns with an aggregate population estimated at 2,293,200 persons at the middle of this year, 1167 births and 569 deaths were registered during the week ended Saturday, August 1st. The annual rate of mortality in these towns, which had been 13·6, 12·7, and 13·5 per 1000 in the three preceding weeks, fell to 12·9 per 1000 in the week under notice. During the first four weeks of the current quarter the mean annual death-rate in these towns averaged 13·2, against 11·6 per 1000 in the 97 large English towns. Among the several towns the death-rate during the week ranged from 5·9 in Kilmarnock, 7·0 in Clydebank, and 7·9 in Paisley, to 17·8 in Dundee, 21·5 in Perth, and 21·8 in Coatbridge.

The 569 deaths from all causes were 23 fewer than the number in the previous week, and included 49 which were referred to the principal epidemic diseases, against 58 and 50 in the two preceding weeks. Of these 49 deaths, 31 resulted from infantile diarrhœal diseases, 7 from whooping-cough, 5 from measles, 3 from diphtheria, 2 from scarlet fever, and 1 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 1·1, against 1·6 per 1000 in the 97 large English towns. The deaths of infants (under 2 years) attributed to diarrhœa and enteritis, which had been 10, 18, and 20 in the three preceding weeks, further rose to 31, of which number 15 were registered in Glasgow, 6 in Dundee, 3 in Edinburgh, and 2 in Hamilton. The deaths referred to whooping-cough, which had been 13, 15, and 9 in the three preceding weeks, further declined to 7, and included 5 in Glasgow. The fatal cases of measles, which had been 10, 12, and 8 in the three preceding weeks, further fell to 5, of which 3 occurred in Glasgow. The 3 deaths attributed to diphtheria were equal to the average in the three preceding weeks, but showed no excess in any of the towns. The 2 deaths from scarlet fever were recorded in Motherwell and Kilmarnock respectively, and the fatal case of enteric fever in Edinburgh.

The deaths referred to diseases of the respiratory system, which had been 61, 51, and 70 in the three preceding weeks, declined to 61 in the week under notice; and 23 deaths were attributed to different forms of violence, against 21 and 27 in the two preceding weeks.

HEALTH OF IRISH TOWNS.

In the 27 town districts of Ireland, with an aggregate population estimated at 1,205,280 persons at the middle of this year, 598 births and 363 deaths were registered during the week ended Saturday, August 1st. The annual rate of mortality in these towns, which had been 15·9, 16·1, and 14·5 per 1000 in the three preceding weeks, rose to 15·7 per 1000 in the week under notice. During the first four weeks of the current quarter the mean annual death-rate in these towns averaged 15·6 per 1000; in the 97 large English towns the corresponding rate did not exceed 11·6, while in the 16 Scotch towns it was equal to 13·2 per 1000. The annual death-rate during the week was equal to 17·3 in Dublin (against 12·1 in London and 11·9 in Glasgow), 15·0 in Belfast, 15·6 in Cork, 17·8 in Londonderry, 14·9 in Limerick, and 11·4 in Waterford, while in the 21 smaller towns the mean death-rate did not exceed 14·2 per 1000.

The 363 deaths from all causes were 28 in excess of the number in the previous week, and included 52 which were referred to the principal epidemic diseases, against 43 and 38 in the two preceding weeks. Of these 52 deaths, 21 resulted from infantile diarrhœal diseases, 11 from measles, 9 from whooping-cough, 4 from scarlet fever, 4 from diphtheria, and 3 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases last week was equal to 2·2, against 1·6 and 1·1 per 1000 in the English and Scotch towns respectively. The deaths of infants (under 2 years) attributed to diarrhœa and enteritis, which had been 13, 14, and 21 in the three preceding weeks, were again 21 in the week under review, of which 9 were registered in Dublin and 9 in Belfast. The deaths referred to measles, which had been 10, 14, and 8 in the three preceding weeks, rose to 11, and included 6 in Belfast and 3 in Sligo. The fatal cases of whooping-cough, which had been 5, 6, and 4 in the three preceding weeks, rose to 9, and comprised 7 in Belfast and 2 in Cork. The 4 deaths attributed to scarlet fever, of which 2 were recorded in Belfast, were equal to the average in the three preceding weeks. The 4 deaths referred to diphtheria occurred in Cork and were slightly in excess of the average in recent weeks. Of the 3 fatal cases of enteric fever, 2 were registered in Dublin and 1 in Belfast. In addition to the deaths from these diseases, a fatal case of typhus was recorded in Belfast.

The deaths referred to diseases of the respiratory system, which had been 53, 41, and 34 in the three preceding weeks, rose to 42 in the week under notice. Of the 363 deaths from all causes, 130, or 36 per cent., occurred in public institutions and 4 resulted from various forms of violence. The causes of 15, or 4·1 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the 97 large English towns the proportion of uncertified causes did not exceed 0·9 per cent.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been notified:—Fleet-Surgeons: J. J. Walsh to the *Drake*; E. D. J. O'Malley to the *Europa*; and E. H. Hodnet de Courtmacsherry to the *Euryalus*, all on becoming parent ship; E. J. Finch to the Chatham Division, Royal Marines, for Royal Marine Battalion; and E. A. Shaw (retired) to Chatham Dockyard. Staff-Surgeons: A. R. Thomas and T. W. Myles, both to the *Pembroke*, additional, for disposal; J. A. Thompson to the *Goliath*, on becoming parent ship at Devonport; C. E. C. Stanford to the Eastney Division, Royal Marine Artillery, for Royal Marine Battalion; and E. B. Kenny to the *Victory*, for Royal Naval Barracks. Surgeon: J. H. Wright to the *Vivid*, for Royal Naval Barracks. Temporary Surgeons: R. W. Brander, D. P. Brown, A. M. Russell, R. A. Barlow, D. K. Adams, J. C. Walker, W. Meikle, and S. Robertson have been attached to the *Pembroke* for disposal.

In accordance with the provisions of His late Majesty's Order in Council of May 13th, 1901, the undermentioned, formerly a Staff-Surgeon in His Majesty's Fleet, has been placed on the Emergency List: George Harley Ross (dated August 10th, 1914).

ARMY MEDICAL SERVICE.

Colonel John C. Culling, on completion of four years' service in his rank, is placed on the half-pay list (dated August 8th, 1914).

Lieutenant-Colonel William T. Swan, from the Royal Army Medical Corps, to be Colonel, vice J. C. Culling (dated August 8th, 1914).

ROYAL ARMY MEDICAL CORPS.

Major Joseph F. M. Kelly to be Lieutenant-Colonel (dated August 8th, 1914).

Captain Robert J. B. Buchanan is placed temporarily on the half-pay list on account of ill-health (dated August 8th, 1914).

The undermentioned Lieutenants are confirmed in their rank: George E. Dyas, Percival D. Warburton, Allan Watson, Norman V. Lothian, John G. Gill, David W. Rintoul, Sidney M. Hattersley, John W. C. Stubbs, Arthur J. A. Menzies, John F. G. Gwynne, and Thomas F. P. Breen.

TERRITORIAL FORCE.

Royal Army Medical Corps.

Commands and Staff.—Lieutenant-Colonel Laurence J. Blandford, from the 2nd Northumbrian Field Ambulance, Royal Army Medical Corps, to be Divisional Sanitary Officer, Northumbrian Division, Royal Army Medical Corps, vice Major Thomas E. Hill, who resigns his commission (dated August 8th, 1914).

Attached to Units other than Medical Units.—Reginald Cavan Neil to be Lieutenant (dated August 6th, 1914).

For attachment to Units other than Medical Units.—Walter Rowley Bristow to be Lieutenant (dated June 28th, 1914).

DEATHS IN THE SERVICES.

Surgeon-General Sir Anthony Dickson Home, K.C.B., V.C. He received his first commission in the army in 1848, became surgeon-general in 1880, and retired on half pay in 1886. He served in the Eastern campaign of 1854–55, in the Indian Mutiny, where he won the Victoria Cross for conspicuous service, in China in 1860, in New Zealand in 1863–65, and in the Ashantee war of 1873–74, when he was principal medical officer. He was also principal medical officer in Cyprus from 1878–79 and to the Forces in India from 1881 to 1885.

Lieutenant-Colonel S. E. Duncan, R.A.M.C. (retired), at Barrow, on August 7th, the result of an accident. Lieutenant-Colonel Duncan, who was the chief of the medical staff with the troops at Barrow, reached the rank of Lieutenant-Colonel in 1905 and retired in 1910. Although not liable to be recalled for service he had patriotically volunteered, and his untoward death has caused profound regret. He served in the South African war, 1900–02, and took part in the operations in the Orange Free State, including the actions at Houtnek (Thoba Mtn.), Vet river, and Zand river. In the Transvaal he took part in the actions near Johannesburg, Pretoria, and Diamond Hill, and in the Orange River Colony, in the Transvaal, west of Pretoria, and during the operations in Cape Colony, south of Orange River (Queen's medal with clasps, and King's medal with clasps).

Surgeon-General William Maxwell Craig, C.B., of the Royal Naval Hospital, Haslar. He had served on the West Coast of Africa, in the Channel Fleet, and at China and Australian stations. He was principal medical officer of the hospital ship *Maine* in 1901–03, and was in charge of the Royal Naval Hospital at Simon's Town from 1903 till 1906.

INDIAN MEDICAL SERVICE EXAMINATION.

In regard to the recent competition for commissions in His Majesty's Indian Medical Service, it has been decided to nominate the following two candidates who came next in order of merit as Lieutenants on probation:—

	Marks
Charles de Carteret Martin, M.B., Ch.B. Edin.	2696
Joseph Henry Smith, M.B., Ch.B. Edin.	2687

The result of the examination was published in our issue of August 8th, p. 414.

UNIVERSITY OF ABERDEEN.—The King has been pleased, on the recommendation of the Secretary for Scotland, to approve the appointment of Dr. Theodore Shennan, pathologist to the Royal Infirmary of Edinburgh, to be Regius professor of pathology (Sir Erasmus Wilson chair) in the University of Aberdeen, in the place of the late Professor George Dean.

Home and Foreign Notes.

(FROM OUR OWN CORRESPONDENTS.)

BRISTOL AND WESTERN COUNTIES.

Bristol General Hospital.

N July 27th the new buildings at the Bristol neral Hospital were formally opened by Mr. orge A. Wills, the president of the institution. e actual opening ceremony was preceded by a ef dedicatory service conducted by the Arch- con of Bristol in a marquee on the "deck," a sed area of asphalte used for patients' exercise. dresses were also given by Mr. Wills, by Mr. rbert M. Baker, the chairman of the committee, d by Dr. J. Michell Clarke, who is senior ysician to the hospital. At the close of these dresses the Lord Mayor moved a vote of thanks the hospital officials for their beneficence to the y in thus adding to the extent and efficiency of ir institution, and some explanatory remarks re added by Mr. G. H. Oatley, of Messrs. Oatley d Lawrence, the architects. The money that s made the extensions of the hospital pos- le was collected as the result of a remarkably ccessful appeal, by which over £20,000 were alised in a few days, in addition to a sum of 0,000 left for the foundation of the maternity partment by the late Mrs. Proctor Baker. The mainder of the total cost—£45,000—has also en collected, so that the new buildings are e of debt. At the opening ceremony it was nounced that a friend of the institution had ovided £2000 to pay for the furnishing. At the ne when these new buildings were opened the uropean war cloud was scarcely perceptible, to e general public at all events. It is therefore the more a matter for congratulation that was possible to get them opened free of debt, it is not likely that subscriptions will flow quite freely after the war is over. Further, the largement of the hospital comes very oppor- nely just at this moment, for the Royal Infirmary, at least a part of it, is to be used for the Second uthern General Hospital of the Territorial Force. tside the General Hospital and the Royal In- mary there is no large general hospital in istol, so that the former will not only have to ceive some of the patients that cannot be sent me directly from the latter, but it will also have undertake practically all the hospital treatment the adult population of Bristol. Happily the atter has been taken thoroughly in hand, and om will be found for the patients who need it. his base hospital with 500 beds is to be taken in and by the Bristol branch of the Red Cross ociety. The premises thus will consist of the oyal Infirmary, together with its nurses' home. he corps which will take charge of this hospital ill be commanded by Colonel J. Paul Bush, C.M.G., ho did hospital work in the South African war. he arrangements for transferring patients to other stitutions have been carried out with commend- ble promptitude by the infirmary authorities, and here will be no difficulty in undertaking the ilitary work at any time when the order comes. number of the members of the hospital staffs ave left Bristol to serve with the Territorial army nd with the Volunteer Naval Reserve, and many ther practitioners have gone also. Arrangements are being made for the carrying on of their practices till the war is over. Nurses have gone away with the Territorial forces, and the exodus of residents from the hospitals has been quite remarkable. It is said that almost all the University students have volunteered for service in one capacity or another, apart of course from those who were already attached to the Territorial army.

Bristol Orthopædic Hospital.

At this hospital an open-air balcony has been opened, at a cost of £200, for the treatment of children suffering from surgical tuberculosis. In area this provides 30 feet by 10 feet for sleeping accommodation, and it is protected by blinds for use in bad weather.

School Inspection in Cornwall.

The medical officer of health of the county of Cornwall, Dr. R. Burnet, in his annual report on the medical inspection of school children, which has been recently issued, states that during 1913 12,271 children had been examined; of these, 1235, or 10·06 per cent., suffered from bad eyesight. In alluding to malnutrition in children, Dr. Burnet remarks that there is only a small number of really necessitous children in Cornwall, most of the cases of malnutrition arising mainly through ignorance of the best methods of preparing and administering food, and adds: "The proper feeding of the child is primarily the function of the home, and the responsibility is certainly the parents."

Budleigh Salterton Cottage Hospital, Devon.

An operating-room, fitted up to modern requirements, has been added to the Budleigh Salterton Cottage Hospital. The entire cost has been defrayed by Mr. Bickerton-Williams as a memorial to his late wife.

A Sewerage Scheme for the Axminster Rural District.

The Local Government Board has sanctioned the loan for £11,000 for the purpose of providing a sewerage scheme for the Axminster rural district.

Exmouth Cottage Hospital.

At the annual meeting of subscribers to the Exmouth Cottage Hospital Mr. W. Davis presented £1000 to be used as an endowment fund for the institution.

August 11th.

CANADA.

Dominion Medical Council.

THE second annual meeting of the Medical Council of the Dominion of Canada was held in Ottawa the latter part of June. Sir Thomas Roddick was elected honorary president, and Dr. R. S. Thornton, Deloraine, Manitoba, president. Dr. Robert W. Powell, Ottawa, was re-elected registrar. The examinations of the council were ordered to be held in October at Montreal and next spring in Winnipeg.

Sir Thomas George Roddick.

It was with feelings of the utmost satisfaction that the Canadian medical profession heard that the name of Dr. T. G. Roddick, of Montreal, was included in His Majesty's list of birthday honours. There is no more popular medical man in Canada. For over 20 years he worked for the cause of Dominion registration. He is a past-president of the British Medical Association, the Canadian Medical Association, and an ex-dean of the Medical Faculty of McGill University, besides having for many years held the chair of surgery therein.

Ontario Medical Council.

At the annual meeting of the governing body of the Ontario College of Physicians and Surgeons, held in Toronto in July, it was unanimously decided to seek an amendment to the Ontario Medical Act, to control quackery by defining the practice of medicine in Ontario. Dr. James McArthur, London, Ontario, was elected President, and Dr. John L. Bray, Toronto, was re-elected Registrar.

Changes and Appointments at McGill University.

Dr. H. S. Birkett has been appointed dean of the Medical Faculty of McGill University, Montreal, in succession to Dr. Francis J. Shepherd. Dr. Howard T. Barnes has resigned from the Physics Department to accept the chair of Physics in the new University of British Columbia. Dr. R. B. Miller has also severed his connexion and has become attached to the physiology department of the Western University at London, Ontario. Dr. G. R. Mines, M.A., has been appointed to the chair of physiology. Dr. Douglas McIntosh becomes professor of physical chemistry and Dr. J. W. Tait assistant professor of psychology; Dr. L. J. Rhea, associate professor of pathology; Dr. C. K. Russel, lecturer in neurology; Dr. A. Freedman, assistant in anatomy; Dr. Maude E. Abbott, lecturer in pathology; Dr. H. B. Cushing and Dr. C. A. Peters, lecturers in medicine and clinical medicine; Dr. E. M. von Eberts, lecturer in surgery and clinical surgery; and Dr. H. C. Burgess, lecturer in gynæcology. No student will be allowed to enter study in any department of McGill University hereafter without satisfactory evidence of successful vaccination.

Fee-splitting and the Ontario Medical Association.

The special committee appointed a year ago by the Ontario Medical Association, and consisting of Dr. H. B. Anderson, Dr. F. N. G. Starr, and the general secretary, Dr. F. Arnold Clarkson, has reported to the recent annual meeting at Toronto that such practices are underhand, unfair to the profession, inimical to the recipients, and not in the best interests of the patients; that surgeons should not over-estimate the relative value of the operation, to the detriment of the physician's services; and that in fixing his own fee the surgeon should have due regard to the ability of the patient adequately to remunerate the physician.

Research Work in Toronto University.

Several citizens of Toronto have agreed to contribute sums amounting to $15,000 for five years that the University of Toronto may engage in research work. The University is said to be financially at a low ebb, and the governors have recently approached the treasurer of the Provincial Government for a grant of $1,500,000.

Appointments at Queen's University, Kingston, Ontario.

Dr. G. W. Mylks has been appointed to the professorship of obstetrics and gynæcology at Queen's University, rendered vacant by the retirement from ill-health of Dr. R. W. Garratt. Other appointments are: Dr. A. R. B. Williamson, professor of pædiatrics; Dr. Fotheringham, assistant professor of surgery; Dr. F. D. MacCallum, lecturer in clinical medicine; Dr. S. M. Asseltine, lecturer in pharmacology; a Mr. J. M. Farrell, lecturer in jurisprudence.

Dalhousie University, Halifax, Nova Scotia.

The pathological department of Dalhousie Un versity is now located in its new building. completion of the new university buildings t medical faculty will occupy the present one. D. A. Campbell, of Halifax, formerly professor medicine, has promised to provide $60,000 to endo a chair of anatomy in memory of his son, the la Dr. George Campbell.

Toronto, July 24th.

AUSTRALIA.

Medical Inspection of School Children.

THE report of the Victoria Department Education for 1912–13 contains a note from th medical officers, of which there are three. It con cludes with the following statements, which repr sent the result of three and a half years' work-viz., about 35,000 examinations in a populatio of about 22,000 children: *a.* Defects in scho children are very common; 1 in 9 has defectiv vision; 1 in 9, defects of hearing; 1 in 4, defect of the nose and throat; dental defects are almos universal. *b.* Retardation is more often due t physical defects than to any other single facto or combination of factors. *c.* The only effectiv agency for their detection is the school medica officer. Definite tests in children for these defect are necessary and need expert control. Th defects, however gross, are but rarely known t either parent, child, or teacher, except in thei results. *d.* The remedial action must be lef largely to the parent, but would best be organised stimulated, and controlled by the educationa authority. This is particularly desirable in th case of dental and eye defects.

Public Health in Victoria.

In the triennial report of the Victoria Healt Department, Mr. E. Robertson, the chief medica officer, reviews the statistics of notifiable diseases Diphtheria has been increasingly prevalent. In 191 the cases numbered 5367; in 1912, 5289. This is mor than double the number in 1910. The mortalit rate for 1913 was 4·5 per cent., and the averag for the past five years 4·8 per cent. The cas mortality rate has steadily fallen, and as the onl new factor introduced into treatment is antitoxin, the remarkable results must be ascribed t the use of that substance. Investigations covering seven years show that with closed schools the decrease for diphtheria was 62 per cent. and for scarlet fever 60 per cent. It appears, therefore, that the congregation of children really tends to the spread of infection. Pulmonary tuberculosis is notifiable throughout the State. There are still a few municipalities in which the other notifiable diseases have not been declared, because the Board of Public Health has not been furnished with proof that such diseases have existed within their boundaries. Amendments of the Notification Act are obviously required. The Board should have power to declare any communicable disease notifiable throughout the whole or any part of the State. At present the Board may declare any communicable disease "a dangerous or infectious disease," but the Act gives the Board no discretion in the application of the restrictive provisions, so that sufferers from a chronic disease are subject to the same disabilities as sufferers from an acute disease. But what is suitable for scarlet fever may be most undesirable for syphilis. Therefore, in any amendment of the Act, provision should be made to allow the Board discretionary powers. The report states that of a total of 14,501 tests of blood specimens undertaken at the university laboratory to the end of last year 6177, or 42·6 per cent., were infected with one or other of the venereal diseases.

The Melbourne Medical School.

A scheme has been formulated by Professor R. J. A. Berry to remove the medical school from the University grounds to the Melbourne Hospital. It is claimed that modern teaching demands that every medical school should be practically part of a hospital, and at present students lose time by having to attend lectures at the University, which is about 15 minutes' walk from the hospital. Professor Berry thinks that a suitable site can be found in one corner of the Melbourne Hospital grounds which would accommodate all existing departments and give double the floor space of the present school. The matter is only in the preliminary stages, but there are several difficulties. While the present opinion is in favour of having the school as near as possible to a hospital, there is some doubt as to the suitability of the proposed site, and some question whether it would be available. It is recognised, also, that such a scheme would practically make the Melbourne Hospital the only clinical school, and within the last few years a successful clinical school has been inauguarated at St. Vincent's Hospital. The estimated cost of the scheme is about £150,000, which includes other University buildings.

Health of Sydney.

The estimated population of Sydney and suburbs on Dec. 31st, 1913, was 725,400, an increase of over 30,000. The marriage-rate was the highest but one since 1886. The birth-rate was 28·92 per 1000, which is 7 per cent. above the average of the last five years. Illegitimate births were 7·41 per cent. of total births. The death-rate was 11·18 per 1000, which is 5 per cent. above the average of the last five years. Of 7938 deaths, 2066 were of children under five years of age.

Professor T. P. Anderson Stuart.

The list of the King's birthday honours included the name of Professor Anderson Stuart, who has been for many years the occupant of the chair of physiology in Sydney University. Sir Anderson Stuart is one of the leading figures in all questions of medical politics in New South Wales, and is recognised as a forceful personality. He has done much to advance medical teaching in Sydney, and has the interests of the medical school at heart. It is noteworthy that two medical men who originally came to Sydney as assistants to Professor Stuart were both knighted. They were Sir Alexander McCormick and the late Sir James Graham.

Subsidised Country Doctors.

The Minister of Health in New South Wales proposes that the Government shall guarantee the income of doctors in centres 20 or more miles away from district hospitals. At many such places the population cannot support a doctor, and in such cases the Government will make up a guarantee. This guarantee will be conditional on the doctor having available at his centre two beds for casualty or urgent cases, and a nurse will be provided in every such centre.

July 5th.

Correspondence.

"Audi alteram partem."

ISOLATION OF DIPHTHERIA CASES.

To the Editor of THE LANCET.

SIR,—Can anyone say what the result would be if diphtheritic and scarlet fever cases were not isolated in hospitals or otherwise, and if the prophylactic use of antitoxin serum was not carried out in those exposed to the former infection? Dr. Lovell Drage apparently believes that it is practically futile to isolate in hospitals cases of scarlet fever and diphtheria.

Personally, I am convinced that without isolation we would be severely handicapped in our efforts to curtail epidemics of these diseases. The properties possessed by the germs of these diseases for their preservation and dissemination are so great that isolation alone, or even combined with the existing means of sanitary disinfection, cannot be expected to prevent their development and spread in populous districts.

There is, I think, one source of possible infection not usually recognised, the mother's hair and probably also that of the patient and nurse. It is quite customary for mothers to nurse in their arms their young children when feverish, fretful, and sick in the early stages of these diseases. The child rests its head on its mother's shoulder and necessarily infects her hair. When we remember how favourable a medium the hair is for the growth of bacilli and how rarely or never women in the humbler stations of life wash their heads, and that those of a higher social status only do so once in every three or four weeks, we cannot regard their hair but as a very real source of danger indeed. I have again and again observed several children in one family successively develop one or other of these diseases, in spite of the fact that isolation and disinfection methods have been adopted. Paper has been removed from the walls and bedding, &c., conveyed to the disinfecting chamber supplied by the municipal authorities, and yet fresh infections occur.

In America some years ago it was the fashion to shave domestic pets, especially cats, in order to eliminate the infective dangers connected with the numerous bacilli found amongst their furs. For the same reasons surgeons are clean shaven and wear caps or hoods when operating. No doubt a woman's "glory" becomes an infecting medium when exposed to the contamination of diphtheritic, scarlet fever, and other bacilli. Not for a moment do I suggest that all mothers and nurses should be shorn of their hair as the cats were in America, or as our surgeons are of their Dundreary appendages and moustaches; but at least they might adopt the following precautions when in charge of infective cases: all acquired hair might be dispensed with, whilst their natural growth should be covered in a similar way to that adopted by surgeons or by themselves when bathing. They should also thoroughly wash their heads regularly with lysol and thereby lessen the risk of infecting others, whilst at the same time enjoying one of the most efficient and luxurious hair washers.

I am, Sir, yours faithfully,

SEYMOUR STRITCH.

Dublin, August 3rd, 1914.

PSORIASIS REMOVED BY EXFOLIATIVE DERMATITIS.

To the Editor of THE LANCET.

SIR,—An interesting book has yet to be written on the partnerships and antagonisms of diseases, which are both diverse and curious. A.B., aged 23, had had psoriasis since 6 years of age, in patches on the arms, abdomen, thighs, and back. On May 5th an attack of acute exfoliative dermatitis started up, which he attributes to partaking of oysters. It affected his whole cutaneous surface, including the hairy scalp. His face, chest, abdomen, arms, and thighs were a mass of white papery scales overlying a red, thickened cutis. His nails were deeply grooved from the arsenic which had been often administered for his psoriasis. I did not see him until May 25th, when his state was as described above. There was some pyrexia. I put him on milk diet, administered sulphocarbolates internally, and applied an ointment of zinc lanoline and ichthyol 10 per cent. Calomel as an aperient and antiseptic was also given freely, and Dover's powder to procure sleep. Glycerine baths were tried later. He steadily improved. On June 30th he came to see me, and his skin was smooth and clean everywhere and all traces of psoriasis had disappeared.

I am, Sir, yours faithfully,

EDWARD C. B. IBOTSON, M.D. Lond.

August 10th, 1914.

THE WORKING OF THE NATIONAL INSURANCE ACT IN GREAT YARMOUTH.

To the Editor of THE LANCET.

SIR,—As all our minds are engrossed now with more serious matters I do not propose to make any detailed reply to what I consider Dr. Blake's inaccuracies. I think the correspondence that has already appeared will explain quite clearly to the readers of THE LANCET how bitterly the non-panel men have reason to feel aggrieved by the action of their brethren, with whom previously they were so much in accord.

I am, Sir, yours faithfully,

RAYMOND HENRY SHAW.

Great Yarmouth, August 11th, 1914.

IRRADIATION AND PRECOCIOUS REACTIONS.

To the Editor of THE LANCET.

SIR,—Marquès, in the *Archives d'Electricité Médicale* for August, 1912, stated that irradiation in the region of the salivary glands was followed in a very large number of cases by a marked reaction, one of his colleagues putting it at as many as 25 per cent. He attributed this result to the effect produced on the salivary glands themselves, and described the clinical signs as those of acute inflammation, commencing a few hours after a very feeble dose (the exact amount was not stated), and subsiding in about 48 hours. The same reaction recurred on repeating the dose a fortnight later.

I have recently had a similar experience, following a one-half pastille dose administered to the beard area which I should like to bring before your readers. The ordinary signs of acute inflammation began to make their appearance a few hours later; there was no salivation, the salivary glands themselves did not appear to be specially involved, the appearances being more those of a general cellulitis of the irradiated area. The reaction subsided rapidly in about 48 hours, as in the cases describe by Marquès. At a later date a second dose of one half pastille dose, measured above a filter of 0·5 mm Al, resulted in a recurrence of the reaction, thoug slightly less severe in nature. The case was on of coccigenic sycosis of a stubborn type. I was le by these comments of Marquès to produce epilatio by divided doses, and judging by the extraordinar reaction produced in this case by a half dose i would seem to be a wise precaution to adopt. I the case recorded by Marquès the patient was als a male, and the irradiation had been undertake for a slight adenitis in the submaxillary region.

I am, Sir, yours faithfully,

FREDK. HARWOOD-HARDMAN.

Eastbourne, August 6th, 1914.

INFANT FEEDING.

To the Editor of THE LANCET.

SIR,—There is an important mass of citizens, the youngest of all, whose food-supply needs careful safeguarding at the present time. The test of a nation's survival is prolonged many years beyond the time at which the fitness of its soldiers and sailors is at stake.

There is need, therefore, that views on infant feeding, seldom very rarely regarded, should now receive special attention, and the occasion would seem to call for authoritative pronouncement which might be resented in a moment of less urgency. And it must be urged that breast feeding, properly carried out, is the only means that can be relied on effectually to safeguard the welfare of infants. Further, breast feeding is perfectly easy of successful accomplishment in nearly 100 per cent. of cases where children are born at or about the full term of gestation. This is a physiological rule which should scarcely need emphasis. But its obvious nature is frequently overlooked by those who cannot lay aside prejudices in favour of one or other of the methods by which it can be replaced, and who fail to regard parturition as merely a step in the reproductive cycle. Lactation may be watched in process of preparation throughout pregnancy. There is no hesitation in regarding it as a sign of great importance in the diagnosis, and its establishment coincides with the birth of the child with punctual precision. Its early cessation is due in the great majority of cases to mismanagement, and is so frequent as to have bred a tendency among members of the public, and even well-educated members, to disregard its supreme importance to infant welfare. The outpatient departments of our children's hospitals are largely concerned with trying to remedy the effects of this faulty performance, and this is no moment to swell the number of attendances.

Fortunately, the correction of the most prevalent errors in the conduct of breast feeding consists in measures which are extremely simple, and which lighten what is considered to be its chief burden. There can be no question that too frequent suckling is the commonest and most invalidating of all mistakes. It is responsible for impoverishment of the quality and quantity of the milk, dissatisfaction in the infant, and physical fatigue in the mother. The lack of any general agreement on the number of feeds in 24 hours which is best suited to the physiology of lactation and the digestive powers of young infants exists chiefly because these two aspects of the problem are seldom considered in conjunction with one another, with the result that commonly both functions are grossly overtaxed.

With due reservation for exceptional cases—and such exceptions are the delicate and subnormal with which this note is not concerned—seven meals in 24 hours is all a new-born baby requires. Given at punctual intervals of three hours during the day-time this number will secure an ample and prolonged secretion of milk, which is further reinforced by a complete cessation for some hours' sleep at night. At the age of six weeks the seven feeds may be safely reduced to six, and later to five and four, which are amply sufficient at five months. Such a routine will secure a perfectly satisfactory period of lactation for at least nine months, the child will thrive, and the woman is submitted to no strain. Lactation, to recapitulate, is a normal physiological function. It is not a peculiar privilege to which some infants are born, but which is unaccountably withheld from others. Nature in her design of mammalian physiology is not the fool she is often accused of being; and in the remarkable elaboration of artificial feeding which this century has witnessed this fact has been somewhat obscured.

Apart from considerations of expense, a wiser way to approach the question is to recognise that lactation presents no great difficulties to an organism capable of all the miraculous steps of pregnancy and parturition. Its apparent failure in many cases is much more likely to be due to flaws in the crude orthodoxy adopted by our profession since the early days when mysticism shrouded every detail of childbirth; orthodoxy associated with peculiar pitfalls when it is remembered that hitherto the profession has been composed of the sex which has had no personal experience of the whole procedure. A régime such as has been suggested is the outcome of wide, if recent, observations, starting with the memorable work of the great French pioneer, Pierre Budin.

I am, Sir, yours faithfully,
M.B.

August 7th, 1914.

THE LONDON DIOCESAN CHURCH LADS' BRIGADE AND THE WAR.

To the Editor of THE LANCET.

SIR,—Colonel Everard A. Ford, Commandant of the London Diocesan Church Lads' Brigade, the largest official Cadet Force in London, has sent an offer to the Army Council to provide 1000 cadets over 16 years of age, trained in the use of arms, for the defence of the shores of the country, and for any other duties which may be assigned to them. This Force is now being organised. My object in trespassing on your space is to appeal to gentlemen who can spare time in the evenings to come forward and render assistance in carrying on the work of the Brigade as a whole, to take the places of the many officers who have left London to join their Territorial battalions. It is obvious that the chief value of the Special Force will be as stretcher bearers, hospital orderlies, cyclists, signallers, scouts, and guards over bridges, stores, &c., and offers of assistance in giving instruction in any of these subjects will be of the utmost value, and should be sent direct to me. The Brigade was able to send out a squad of stretcher-bearers and hospital orderlies in the recent Balkan war, and their work was highly appreciated.

I am, Sir, yours faithfully,
A. W. OYLER,
Major, H.Q.S., Honorary Organising Secretary.
The Laurels, Millfield-lane, Highgate, N., August 12th, 1914.

Obituary.

SIR ANTHONY DICKSON HOME, V.C., K.C.B., M.D. ST. AND., M.R.C.S. ENG.,

SURGEON-GENERAL, ARMY MEDICAL SERVICE (RETIRED).

THE death of Sir Anthony Home is announced. He was born on Nov. 30th, 1826, and qualified as a medical man in 1847. He entered the Army Medical Department as assistant surgeon on March 17th, 1848, became surgeon on Feb. 9th, 1855, being stationed at Lucknow, and went through the Indian Mutiny. He became surgeon-major on Sept. 14th, 1866, deputy surgeon-general on Dec. 24th, 1873, and surgeon-general on April 4th, 1880. He received the honour of C.B. on July 5th, 1865, and K.C.B. on March 31st, 1874. It was when he was surgeon in the 90th Foot Regiment in India, on June 18th, 1858, that he won the coveted Victoria Cross for his conspicuous services. He served in China in 1860; in New Zealand from 1863 to 1865, and took part in the Ashantee war in 1873–74, when he was principal medical officer, and in Cyprus in 1878–79, and to the Forces in India from 1881 to 1885. In 1886 he was the principal medical officer of the District Staff of the No. IV. Southern District with headquarters at Portsmouth, under Lieutenant-General Sir G. H. S. Willis, K.C.B. In 1912 he published "Service Memoirs," a long review of which will be found in THE LANCET of July 6th, 1912, p. 27, and which, perhaps, will now well serve as an obituary memoir. A portrait of him was prefixed to that book.

WALTER ACTON, M.R.C.S. ENG., L.S.A.

ONE of the few remaining survivors, if not the last, of the surgeons of the Crimean war has passed away. Walter Acton was born in Ludlow in 1826 and qualified in 1850. He volunteered for service in the Crimea and was staff surgeon to Osmanli Cavalry for two years. From manuscript notes and paragraphs in published works it is evident that he held responsible positions and was well known among his colleagues and the suffering troops. After the termination of the war he practised for a few years at Stilton and afterwards at Newcastle-under-Lyme, retiring in 1887. Since 1893 he has resided at West End, near Southampton.

THE NATIONAL RELIEF FUND.

THERE is one simple answer which can be given to a universal question now being addressed to editors of journals. The question is, What can I do to help? and the answer is, Subscribe to the Prince of Wales's National Relief Fund.

I enclose £ s. d. toward the Prince of Wales's
NATIONAL RELIEF FUND

Name ______________________
Address ______________________
____

This coupon should be filled in, and the envelope, which need not be stamped, addressed to H.R.H. The Prince of Wales, Buckingham Palace, London.

THE NATIONAL INSURANCE ACT.

UNALLOTTED FUNDS AND THE SCOTTISH CLERKS' ASSOCIATION.

AT a meeting of the Glamorgan Insurance Committee, when the question came up for discussion as to the allocation of money in respect of insured persons who had not chosen any medical man on the panel, a letter was read from a body called the Scottish Clerks' Association, urging the committee to refrain from dividing the funds in their hands, which they were apparently prepared to do upon lines recommended by the Panel Committee. The Scottish Clerks' Association said: "You and your committee and the medical profession generally will recognise that a large proportion of the respectable classes in every community prefer to be treated as private rather than as panel patients, and to pay for it, which must be as satisfactory to the doctor as to them. In this way the insured person is paying twice for medical treatment, and the doctors are receiving double remuneration from such patients. My directors feel sure, therefore, that Insurance Committees and doctors alike will refrain from touching these funds until steps are taken to turn them to a purpose which they are sure will be universally approved." Whatever right the "Scottish Clerks' Association" may have to interfere in the deliberations of the Glamorgan Insurance Committee, which referred the matter for further consideration to its medical benefit committee, it is to be hoped that its views will neither be endorsed by the Glamorgan committee nor accepted there or anywhere by the medical profession. Medical men on the panels entered into contracts with the full knowledge of what is obvious to everyone—that a large number of persons, whether of the "respectable classes" referred to by the Scottish Clerks' Association or not, would not choose their medical advisers on the panels until they were ill. Acting upon the principles of insurance, the medical profession took this into consideration in agreeing to work for remuneration which otherwise would be inadequate, but they knew that under the Insurance Act insured persons not making a choice for themselves had to be allotted by Insurance Committees. The failure of the committees to do this, in the stress of setting the machinery of the Act in motion, has caused the accumulation of large sums of money and drawn attention to the whole matter, but if the contentions of the Scottish Clerks' Association are right, and if the funds can justly and legally be diverted from their original object, there can be nothing to prevent the repetition of the conditions to which we have referred above as due to the congestion of work in the early days of the Act. In short, if this be so, any committee having the same object in view, such as the starting of nursing homes, may raise a fund for it by neglecting to carry out what is laid down in principle by Section 15, Subsection 2 (d), of the Insurance Act, 1911, and refusing to allot to medical men on the panels any patients who do not make a selection for themselves.

THE CERTIFICATION QUESTION IN DUBLIN.

The following resolution was passed unanimously at a recent meeting of the Insurance Committee of the County Borough of Dublin:—

That we, the Insurance Committee for the Borough of Dublin, are of the opinion that the Irish Insurance Commissioners should come to some satisfactory arrangement with the Approved Societies and doctors so that insured persons in Dublin may get the benefit of the moneys voted by Parliament for the purpose of the furnishing of sickness certificates free of cost by the establishment of a certifying panel for this district. We earnestly appeal to their patriotism as Irishmen to the members of the medical profession in Dublin to endeavour on their part by mutual agreement with the Irish Commissioners to retain this money, voted specially for certification work in Ireland, and so avoid its being returned from year to year to the British Treasury. That copies of this resolution be sent to the press, the Irish Commissioners, and the local Medical Association.

Medical News.

UNIVERSITY OF LONDON.—At examinations held in July the following candidates were successful:—

FIRST EXAMINATION FOR MEDICAL DEGREES.

Lena Cecilia Adam, London (Royal Free Hospital) School of Medicine for Women; Wilfred Mark Anthony, St. Thomas's Hospital; Norman Dyer Ball, Mill Hill School and University College; Loveday Shackell Banes and Annie Hardy Banks, London (Royal Free Hospital) School of Medicine for Women; Monty Baranov, University College; Lewis Henry Bartram, Trinity College, Cambridge; Henry Eric Beasley, Epsom College; Edward Ardley Beaulah, Middlesex Hospital; Henry Spencer Bell, St. Bartholomew's Hospital; Enid Margaret Mary Bevan, London (Royal Free Hospital) School of Medicine for Women; Jacob Brodetsky, B.Sc., Birkbeck College; John Douglas Major Cardell, Epsom College; Charles Eric Cobb, St. Thomas's Hospital; *Humphrey Noel Felix Cook, University College; Reginald Vincent Cookes, Guy's Hospital; George Ernest Cornaby, Kingswood School; Anthony Beach Cowley, St. Bartholomew's Hospital; Nora Annie Crow, London (Royal Free Hospital) School of Medicine for Women; Guy Pascoe Crowden, University College; David Sidney Davies, University College, Cardiff; Idris Davies, Pontypridd Intermediate School; Mary Day, London (Royal Free Hospital) School of Medicine for Women; Francis Percival de Caux, University College, Auckland; Walter Stewart Dickson, St. Thomas's Hospital; George Wilhelm Robert W. Dreiheller, St. Bartholomew's Hospital; Abraham Eidinow, London Hospital; Sylvia Victoria Elman, London (Royal Free Hospital) School of Medicine for Women; Frederick Augustus Evans, Llangefni County School; Donald Charles Fairbairn, St. Bartholomew's Hospital; Lilian Mabel Fisher, London (Royal Free Hospital) School of Medicine for Women; Gerald William Thomas Hunter Fleming, University College, Durham; Abraham Foner, Swansea Technical College; Wilfrid Frederick Francis, Berkhamsted School; Frank Alfred Gaydon, St. Thomas's Hospital; Eric James Gordon Gibb, St. Paul's School; Alfred Laurence Goff, King's College; Walter Henry Grace, University of Sydney; St. George Bernard Delisle Gray, Guy's Hospital; Gwenvron Mary Griffiths, Bedford College; Arthur Sheldon Hands, Epsom College; Norman Gray Hill, London Hospital; Oscar Stanley Hillman, University College, Nottingham; Joseph Walker Hirst, Epsom College; Albert William Holgate, Alleyn's School and Birkbeck College; Henry Nevill Hornibrook, St. Paul's School; Marshall Jackson, St. Bartholomew's Hospital; Santo Weisberg Jeger, University College, Cardiff; Robert David Jones, University of Liverpool; Vasant Ramji Khanolkar, University College; Muriel Elsie Landau and Mary Kathleen Forsaith Lander, London (Royal Free Hospital) School of Medicine for Women; Eugène Henri Léon Leclézio, Guy's Hospital; Charles Gordon Lewis, University of Birmingham; Simon Sally Liebermann, St. Thomas's Hospital; Charles Arthur Lindup, Epsom College; Andrew Best McBride, King's College; Ernest Kenneth Macdonald, St. Thomas's Hospital; Donald McDonald-Taylor, University College, Cardiff; †Janet McAllister McGill, London (Royal Free Hospital) School of Medicine for Women; Noel Olliffe Compton Mackenzie, Epsom College; Gerald Joseph Wyld McMichael, University of Birmingham; Vida Sara Maxwell, London (Royal Free Hospital) School of Medicine for Women; Alfred Mitchell, King's College; George Sydney Morgan, London Hospital; Edith Mary Ponsonby Morris, London (Royal Free Hospital) School of Medicine for Women; John Ernest Nicole, King's College; Norah Dorothy O'Flyn, University College, Cardiff; Reginald Ernest Overton, University College; Marguerite Henrietta Pam, London (Royal Free Hospital) School of Medicine for Women; Manek Jamshedji Panthaky, King's College and University Tutorial College; Charles Frederick Parry and Thomas Parry, University College, Cardiff; *Rowland John Perkins, St. Bartholomew's Hospital; Gordon Frank Peters, Guy's Hospital; George Stuart Bain Philip, King's College and Charing Cross Hospital; Frederick Charles Player, Derby Technical College; Leonard Duncan Porteous, St. Bartholomew's Hospital; John Northley Julian Powlesland, University College, Exeter; Dorothy Priestley Priestley, Girton College and University of Leeds; Mary Millicent Prior, London (Royal Free Hospital) School of Medicine for Women; Walter Ernst Karl Adolf Quitmann, University College; Ernest Frank Rabey, Middlesex Hospital; Ronald Seton Ralph, Guy's Hospital; Edward Douglas Thomas Roberts, St. Thomas's Hospital; Harold Shillito Robinson and George Rendle Rolston, London Hospital; Edward Snow Rose, Epsom College; Benjamin Rosenstein, Westminster City School; Douglas James Lionel Routh, University College; Charles Cecil Rowland, London Hospital; Albert Ernest Sawday, Guy's Hospital;

John Reith O'Donnell Scroggie, University College; Solomon Nahum Senitzky, London Hospital; Bryan Buckley Sharp, Epsom College; Sydney Anselm Sharpe, Guy's Hospital; John Holmes Shaw, University College, Otago, and University College; *†Joseph Harold Sheldon, King's College; Arthur Hugh Shelswell, Guy's Hospital; Raghunath Dadoba Shirvalkar, University College; William Henry Simmons and William Skelly, Guy's Hospital; Bertram Leslie Slater, London Hospital; George John Sophianopoulos, St. Bartholomew's Hospital; Frances Minnie Spickett, London (Royal Free Hospital) School of Medicine for Women; Gilbert Patrick Staunton, St. Bartholomew's Hospital; Mary Sylvia Stocks, London (Royal Free Hospital) School of Medicine for Women; Harold Edward Suter, Epsom College; Khiam Soon Tan, University College; Stanley Roy Tattersall, St. Thomas's Hospital; John Alan Tennyson-Smith, Dulwich College; Cyril James Thomas, St. Thomas's Hospital; Howard Metherell Toop, London Hospital; Robert Lawrence Walker, Epsom College; Austin Darley Wall, Oundle School; Hygeia Leigh Josephine Wallace, University College; Arthur Elston Ward, St. Thomas's Hospital; and Robert Walter Warrick and Eric Roland Webb, Guy's Hospital.

* Distinguished in Inorganic Chemistry.

† Distinguished in Biology.

ROYAL DENTAL HOSPITAL OF LONDON.—The next award for the Storer-Bennett Scholarship will be made early in 1915, and theses to be submitted should be in the hands of the Dean by Dec. 31st next.

PRESENTATION TO A MEDICAL PRACTITIONER.—At Braunton, Devon, on July 29th, Mr. Walter Joseph Harper, L.R.C.P. Lond., M.R.C.S. Eng., was presented by the residents with a silver tray as a mark of esteem on the occasion of his retiring from practice. Mrs. Harper was presented with a silver card case.

DURING the period of the war, or at any rate until vessels in the North Sea, over which is borne the bulk of the raw material used in the manufacture of THE LANCET paper, are safe from the attacks of German warships, we shall be compelled to reduce the size of our weekly numbers. We much regret the reduction, but with us, as with most other newspapers in this country, the course is compulsory.

LITERARY INTELLIGENCE.—Messrs. Longmans and Co. announce for early publication the "Year Book of Radiology for 1915," edited by Robert Knox, M.D., and James H. Gardiner, F.C.S. The object of the work is to give an account of the more recent advances in knowledge of radium, X rays, and allied phenomena from the medical and physical points of view.

DONATIONS AND BEQUESTS.—The late Mr. Charles McDevitt, of Glenties, County Donegal, has by his will, in addition to many religious bequests, left £1500 to provide a water-supply from Lough Anna for Glenties, in memory of his brother; and £10,000 to provide permanently four trained nurses—two for Glenties and one each for Fourtown and for the Rosses.

WAR AND THE SUPPLY OF DRUGS.

THE Government in the course of its inquiry into the supply of food and other necessaries of the country has made certain preliminary investigations with regard to the supply of drugs. It is found that there is at present a shortage of certain drugs owing to the holding up of some foreign supplies and the general dislocation of commerce. To one of the most serious of these the President of the Pharmaceutical Society has called attention in a letter, in which he points out that the main source of potassium salts is Germany, and advises that as far as possible sodium salts should be substituted in prescriptions.

We learn that among the drugs of which the British market is at present short, in addition to potassium salts, are salicylates, bromide salts, preparations of mercury, and permanganates. We understand that there is not at present any serious shortage of quinine and other cinchona preparations or of iodine, although the prices of both have been put up. Dr. B. A. Richmond, the secretary of the London Panel Committee, who has made special inquiry, indicates that syrups and preparations such as phenacetin should be added to the above list. The British Medical Association has received an invitation to a conference to be held at an early date to assist the Government in considering how the medical profession can best coöperate in dealing with the situation. It is hoped that this shortage will be only temporary, and that soon alternative sources of supply will be opened up. Meanwhile practitioners are invited, as far as possible, to replace the preparations mentioned above by others having similar therapeutical effects. It is probable that in an early issue we shall be able to add to this preliminary notice

There seems to be a universal movement in the profession to undertake to attend the necessitous wives and children of men engaged in the naval and military defence of the country.

The profession desires to assist the Local Distress Committees in every way, and as soon as these get to work medical practitioners will be disposed to accept all cases referred by such committees. The question arises how the cost of drugs and accessories for the treatment of such cases can be met; in certain areas arrangements have already been suggested by which this should be done through the machinery of the Distress Committees.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Parliament and the War.

PARLIAMENT adjourned on Monday, August 10th, for a fortnight. All the necessary business of the session and a large number of emergency Acts have been passed through with rapidity. The grants of men and money for the war have been made, and in face of the great crisis all parties responded to the call to relegate matters of domestic controversy to the background for the present. In this way the nation is offering a united front. Amongst the Acts to receive the Royal Assent before Parliament adjourned were the Milk and Dairies Bill, the Milk and Dairies (Scotland) Bill, and the two Housing Acts.

Ministerial Appointment for Dr. C. Addison, M.P.

Dr. CHRISTOPHER ADDISON, M.D., M.P., has been appointed Parliamentary Secretary to the Board of Education. He does not require to seek re-election in his constituency. For some time it has been regarded as likely that he would receive some post in the Ministry in recognition of his strenuous work in connexion with the National Insurance Act.

HOUSE OF COMMONS.

WEDNESDAY, AUGUST 5TH.

Lung Disease in Industrial Occupations.

Mr. STEEL-MAITLAND asked the Home Secretary (1) whether he would endeavour to make arrangements with the Registrar-General for special returns of deaths from phthisis or other forms of lung disease from ganister mines, tin mines, cutlery works, granite quarries, and other occupations where the death-rate appeared excessive, and (2) in view of the recommendations of the Royal Commission on Metalliferous Mines and Quarries, what further steps, if any, he proposed to take to prevent inhalation of dust during drilling and blasting in metalliferous mines (and whether he would lay any draft regulations to that effect upon the table of the House); in quarries in breaking stones by machinery, or dressing and preparing stone the dust of which was dangerous; and in other factories or workshops in which processes were carried on or in which dangerous dust from stone was generated; and (3) what steps he proposed to take with reference to tin mines and ganister mines with a view to carrying out the recommendations of the Royal Commission on Metalliferous Mines and Quarries, to the effect that the State Advisory Council on Tuberculosis should be asked to make further investigations into the effect of the occupations on the health of the miners.—Mr. MCKENNA wrote in reply: The recommendations of the Royal Commission on Metalliferous Mines and Quarries on the subject of phthisis are under consideration with a view to steps being taken to give effect to them so far as can be adequately done under existing powers, but I regret that I cannot at present make any detailed statement. I may say, however, that I have already been in communication with the chairman of the Advisory Council in regard to the question of further investigations, and I have also arranged for Dr. Haldane to undertake an inquiry supplementary to the investigations made by the Royal Commission in regard to the physiological effect of various stone dusts on the lungs.

THURSDAY, AUGUST 6TH.

Asylum Medical Officers and Military Service.

Mr. KING asked the Home Secretary whether he was aware that a county lunatic asylum with 2000 patients was left with inadequate medical staff owing to medical men being called up for military services; and whether steps were in contemplation for assisting large institutions in similar difficulties.—Mr. McKENNA: The Board of Control inform me that though they have received no representations on the matter they have already given it careful consideration. They have every confidence that officers not called out will loyally respond to the demand for any extra work laid upon them, and that the interests of the patients will not suffer while temporary measures are being taken to supplement the regular staff.

MONDAY, AUGUST 10TH.

The Certification of Lunatics.

Sir JOHN JARDINE asked the Home Secretary whether his attention had been drawn to any cases where an alleged lunatic, not having been personally seen by a magistrate, had been deprived of his right to the intervention of a judicial authority owing to neglect on the part of a manager of a private institution for lunatics to deliver to the patient under his care the notice of right of appeal required by Section 8 of the Lunacy Act; and what arrangements would be made to prevent such occurrences in future.—Mr. McKENNA said in reply: One alleged case of this kind has been brought to my notice. Such cases would not in the ordinary course be brought to my notice, as my sanction is not required for a prosecution, or a warning, or other step deemed proper by the Board of Control. A few instances have come to the knowledge of the Board, who are contemplating taking steps for rendering such omissions most unlikely, and for bringing them, should any occur, to the notice of the Board.

BOOKS, ETC., RECEIVED.

ARNOLD, EDWARD, London.
Medical Notes for School Teachers. By C. W. Hutt, M.A., M.D. Cantab., D.P.H. Oxford. Price 1*s.* net.

BUFFARINI, A. GUIDI, Cordoba 2080, Buenos Aires.
Cancer Experimental por el Dr. Angel H. Roffo, Encargado del Estudio del Cancer por el Departmento Nacional de Higiene.

CAMBRIDGE UNIVERSITY PRESS, Cambridge.
Flies and Disease: Non-blood-sucking Flies (Cambridge Public Health Series). By G. S. Graham-Smith, M.D., University Lecturer in Hygiene, Cambridge. Second edition. Price 12*s.* 6*d.* net.

CHURCHILL, J. AND A., London.
Medical and Pharmaceutical Latin for Students of Medicine and Pharmacy. By Reginald R. Bennett, B.Sc. Lond., F.I.C. With an Introduction by Henry G. Greenish, F.I.C., F.L.S. Second edition. Price 6*s.* 6*d.* net.
Pharmacopœia of the Hospital for Diseases of the Throat, Nose, and Ear, Golden Square. Edited by Charles A. Parker, F.R.C.S. Edin., and T. Jefferson Faulder, M.B., B.C. Cantab., Surgeons to the Hospital. Seventh edition. Price 2*s.* 6*d.* net.
Operative Surgery: The Head and Neck, the Thorax and the Abdomen. By Edward H. Taylor, M.D., B.S. Dub. Univ., F.R.C.S.I., Professor of Surgery in the University of Dublin. 300 figures from original drawings, many in colours. Price 30*s.* net.

COLIN, ARMAND, 103, Boulevard St. Michel, Paris.
Les Universités Allemandes au XXe siècle. Par le Dr. René Cruchet. Professeur agrégé à l'Université de Bordeaux. Préface de Camille Jullian, Membre de l'Institut. Price Fr.4.

ENGELMANN, WILHELM, Leipzig und Berlin.
Die Unregelmässige Herztätigkeit und ihre Klinische Bedeutung. Von Dr. K. F. Wenckebach (Strassburg I. Els.). Price M.13.

KIMPTON, HENRY, London.
Practical Pediatrics: a Modern Clinical Guide to the Diseases of Infants and Children for the Family Physician. By James H. McKee, M.D., Professor of Pediatrics, Temple University, and William H. Wells, M.D., Assistant Professor of Obstetrics, Jefferson Medical College. With an Appendix upon Development and its Anomalies. By John Madison Taylor, A.M., M.D., Associate Professor of Non-pharmaceutical Therapeutics, Temple University. Two vols. Price £2 10*s.* net.
Gonorrhœa and its Complications in the Male and Female. By David Watson, M.B., C.M., Surgeon, Glasgow Lock Hospital. Price 15*s.* net.
Surgery: Its Principles and Practice. for Students and Practitioners. By Astley Paston Cooper Ashhurst, A.B., M.D., F.A.C.S., Instructor in Surgery in the University of Pennsylvania. Price 28*s.* net.

LEWIS, H. K., London.
The Child's Diet By J Sadler Curgenven, M.R.C.S., L.R.C P Second edition. Price 2*s.* 6*d.* net.

LIPPINCOTT, J. B., COMPANY, Philadelphia and London.
Abdominal Surgery: Clinical Lectures for Students and Physicians By Thorkild Rovsing (Copenhagen). Edited by Paul Monroe Pilcher, A.M., M.D., Brooklyn, New York. Price 21*s.* net.

LYNWOOD AND CO., LIMITED, 12, Paternoster-row, E.C.
Strike: A Story in Dialogue. By Frederick Watson. Price 1*s.* net.

MEDICAL PUBLISHING COMPANY, LIMITED, 23, Bartholomew Close, E.C.
Operative Treatment of Fractures. By Sir W. Arbuthnot Lane, Bart., M.S., F.R.C.S. Second edition.

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

ANNETT, H E., M.B., Ch.B. Vict., has been appointed Medical Officer of Health of Runcorn.

BAZALGETTE, SIDNEY, L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Brent Knoll District by the Axbridge (Somerset) Board of Guardians.

CAIRNS, GEORGE DOUGLAS. M.B., Ch.B. Edin., has been appointed Assistant School Medical Officer for Kirkcaldy District.

CAMPBELL, G. M., L.R.C.P. Lond., M.R.C.S., has been appointed House Surgeon at the Bristol Royal Infirmary.

CREASEY, R., L.R.C.P., M.R.C.S., has been appointed House Physician at the Bristol General Hospital.

EVANS, DOUGLAS GORDON. M.B., B.S. Lond., has been appointed House Surgeon at the Royal Infirmary, Sheffield.

FAYLE, B. J. L., L.R.C.P. Lond., M.R.C.S., has been appointed House Surgeon at the Bristol General Hospital.

HARRISON, C. C., M.B., B.S. Lond., has been appointed House Surgeon at the Bristol Royal Infirmary.

JOHNSON, R. B., L.R.C.P. Lond., M.R.C.S., has been appointed House Physician at the Bristol General Hospital.

MALAHER, BRUCE. L.R.C P. & S. Irel., has been appointed House Surgeon at the Royal Infirmary, Sheffield.

PARKER, H. G., F.R.C.S. Edin., L.R.C.P. Edin., has been appointed Honorary Aural Surgeon to the Bolton Infirmary and Dispensary.

SHENNAN, THEODORE, M.D. Edin., F.R.C.S. Edin., has been appointed Regius Professor of Pathology in the University of Aberdeen.

SOWERBY, E. S., M.B., B.S. Lond., has been appointed House Physician at the Bristol Royal Infirmary.

TAYLOR, W. E., L.R.C.P. Lond., M.R.C.S., has been appointed Casualty House Surgeon at the Bristol General Hospital.

THOMAS, W. REES, M.D. Lond., M.R.C.P. Lond., has been appointed Medical Superintendent of the State Institution for Mental Defectives at Moss Side, Liverpool.

THORNLEY, N. G., M.B., Ch.B. Edin., has been appointed Honorary Aural Surgeon to the Bolton Infirmary and Dispensary.

WHITE, H. V., M.D. Manch., has been appointed Honorary Assistant Surgeon to the Manchester Royal Eye Hospital.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ABERGAVENNY, MONMOUTHSHIRE ASYLUM.—Locum Tenens Assistant Medical Officer. Salary 6 guineas per week and all found.

ABERYSTWITH GENERAL HOSPTIAL.—House Surgeon and Secretary. Salary £175 per annum, all found.

ASHTON-UNDER-LYNE DISTRICT INFIRMARY AND CHILDREN'S HOSPITAL.—Assistant House Surgeon. Salary £100 per annum, with board, residence, and laundry.

AYLESBURY, ROYAL BUCKINGHAMSHIRE HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board, washing, and lodging.

BANBURY, HORTON INFIRMARY.—House Surgeon. Salary £120 per annum, with board and residence.

BARROW-IN-FURNESS, NORTH LONSDALE HOSPITAL.—House Surgeon. Salary £150 per annum, with residence, board, and laundry.

BEDFORD COUNTY HOSPITAL.—Assistant House Surgeon. Salary £100 per annum, with board, lodging, and laundry.

BENENDEN NATIONAL SANATORIUM, Kent.—Assistant Medical Officer. Salary £120 per annum, with board, residence, and laundry.

BIRKENHEAD BOROUGH HOSPITAL.—Senior House Surgeon. Salary £120 per annum, with board and laundry.

BIRMINGHAM UNION.—Fourth Assistant Medical Officer at Dudley-road Infirmary. Also Assistant Medical Officer at Selly Oak Infirmary. Salaries respectively £140 and £160 per annum, with board and residence.

BODMIN, CORNWALL COUNTY ASYLUM.—Junior Assistant Medical Officer. Salary £225 per annum, with quarters, board, laundry, and attendance.

BOOTLE COUNTY BOROUGH.—Clinical Tuberculosis Officer and Deputy Medical Officer of Health. Salary £400 per annum.

BOOTLE HOSPITAL FOR INFECTIOUS DISEASES.—Resident Medical Officer, unmarried. Salary £150 per annum, with board, washing, and apartments.

BRADFORD CITY EDUCATION COMMITTEE.—Chief School Dentist. Salary £350 per annum.

BRADFORD ROYAL INFIRMARY.—House Physician, unmarried. Salary £100 per annum, with board, residence, and washing.

Brighton Throat and Ear Hospital, Church-street, Queen's-road. —Non-Resident House Surgeon for six months. Salary at rate of £150 per annum.

Bristol City Asylum, Fishponds.—Second Assistant Medical Officer, unmarried. Salary £250 per annum, with apartments, board, washing, and attendance.

Bristol Royal Hospital for Sick Children and Women.—House Physician and House Surgeon. Salary £100 per annum each, with board, rooms, attendance. and laundry.

British Guiana.—Bacteriologist. Salary £350 per annum, with furnished bachelor quarters.

Cambridge, Addenbrooke's Hospital.—Second House Surgeon. Salary £80 per annum, with board, residence, and laundry.

Cancer Hospital, Fulham-road, S.W.—House Surgeon for six months. Salary £70 per annum.

Canning Town Women's Settlement Hospital, Balaam-street, Plaistow, E.—Female Senior Resident Medical Officer. Salary £120 per annum, with board and laundry.

Cardiff City Mental Hospital, Whitchurch.—Locum Tenens for five weeks. Salary 6 guineas a week.

Carnarvonshire Education Committee.—School Dentist. Salary £250 per annum.

Central London Ophthalmic Hospital, Judd-street, St. Pancras, W.C.—House Surgeon. Salary at rate of £50 per annum, with board and residence.

City of Westminster Union Infirmary, Colindale-avenue, Hendon, N.W.—Assistant Medical Officer. Salary £160 per annum, with board, residence, and washing.

Croydon Borough Hospital for Infectious Diseases.—Assistant Resident Medical Officer. Salary £150 per annum, with board, residence, and laundry.

Derby, Derbyshire Hospital for Sick Children.—Female Resident Medical Officer. Salary £80 per annum.

Devonport, Royal Albert Hospital.—House Surgeon, unmarried, Salary £150 per annum, with board and laundry.

Egypt, Egyptian Hospitals for the Insane.—Assistant Medical Officer, unmarried. Salary £E45 per month, with quarters.

Exeter, Royal Devon and Exeter Hospital.—House Physician and Assistant House Surgeon for six months. Salaries at rate of £200 per annum each, with board, apartments, and washing.

Glamorgan County Council Committee for the Care of the Mentally Defective.—Medical Officer. Salary £300 per annum.

Glasgow School Board.—Female Assistant Medical Officer.

Halifax Royal Infirmary.—Second and Third House Surgeons, both unmarried. Salaries £120 and £100 per annum respectively, with residence, board, and washing

Hospital for Consumption and Diseases of the Chest, Brompton. —House Physician for five months. Salary 25 guineas.

Hospital for Women, Soho-square.—Clinical Assistants in Out-patient Department.

Hull Royal Infirmary.—Assistant House Surgeon. Salary at rate of £100 per annum, with board and lodging.

Inverness, Northern Infirmary.—House Surgeon. Salary £100 per annum, with board, &c.

Kensington and Fulham General Hospital, Earl's Court, S.W.—Resident Medical Officer. Salary at rate of £70 per annum, with board and laundry.

Lancashire County Council.—Two Junior Assistant Tuberculosis Officers. Salary £300 per annum.

Leamington Spa, Warneford, Leamington, and South Warwickshire General Hospital.—House Physician. Salary £85 per annum, with board, residence, and laundry.

Leeds Public Dispensary.—Two Resident Medical Officers. Salaries £130 per annum, with board, residence, and laundry.

Leicester, North Evington Poor-law Infirmary. — Senior Assistant Medical Officer and Junior Assistant Medical Officer. Salaries £200 and £150 per annum respectively, with apartments, rations, laundry, and attendance.

Liverpool, David Lewis Northern Hospital.—Resident Surgical Officer, House Surgeon, and Two House Physicians, all for six months. Salaries respectively £70, £60, and £60, with board, residence, and laundry.

London County Asylum, Colney Hatch, New Southgate, N.—Junior Assistant (Sixth) Medical Officer, unmarried. Salary £200 per annum, with board, apartments, and washing.

Manchester Hospital for Consumption and Diseases of the Throat and Chest.—Honorary Assistant Physician.

Manchester, Hulme Dispensary, Dale-street, Stretford-road.—House Surgeon. Salary £180 per annum, with apartments, attendance, coal, and gas.

Manchester Northern Hospital for Women and Children, Park-place, Cheetham Hill-road.—House Surgeon. Salary £120 per annum, with apartments and board.

Manchester, Poor-law Institution, Crumpsall.—Junior Resident Assistant Medical Officer, unmarried. Salary £120 per annum, with rations, apartments, washing, and attendance.

Manchester, Prestwich Union Infirmary, Charlestown-road, Blackley.—Assistant Medical Officer. Salary £140 per annum, with apartments, board, &c.

Manchester Royal Infirmary.—Medical Officer for Out-Patients and Accidents for six months. Salary at rate of £100 per annum, with board and residence. Also Three House Physicians, House Surgeon, and Four Junior House Surgeons, unmarried. Board and residence provided.

Metropolitan Hospital, Kingsland-road, N.E.—House Surgeon and Assistant House Surgeon for six months. Salary at rate of £60 and £40 per annum respectively, with board and washing.

Newcastle-upon-Tyne Poor-law Institution and Infirmary. Westgate-road.—Assistant Resident Medical Officer, unmarried. Salary at rate of £200 per annum, with apartments, rations, and washing.

Newport (Mon.), Royal Gwent Hospital.—Resident Medical Officer. Salary for first six months at rate of £100 per annum, second six months £125, and third six months £150, with board, residence, and laundry.

Norwich City Asylum, Hellesdon, near Norwich.—Assistant Medical Officer, unmarried. Salary £250 per annum, with board, apartments, attendance, and laundry.

Nottingham General Dispensary.—Assistant Resident Surgeon, unmarried. Salary £180 per annum, with apartments (not board), attendance, light, and fuel.

Nottingham General Hospital.—Senior House Physician. Salary £120 per annum, with board, residence, and laundry.

Portsmouth Workhouse Infirmary, Workhouse, and Children's Home.—Second Assistant Resident Medical Officer, unmarried. Salary £150 per annum, with apartments, rations, &c.

Preston, County Asylum. Whittingham, Lancs.—Assistant Medical Officer, unmarried. Salary £250 per annum, with board, apartments, &c.

Preston Royal Infirmary.—House Physician. Salary £120 per annum, with board, residence, and laundry.

Putney Hospital, Putney Common, S.W.—Resident Medical Officer. Salary £100 per annum, with rooms, board, and laundry.

Rotherham Hospital.—Assistant House Surgeon. Salary £110 per annum, with board, lodging, and washing.

Royal Edinburgh Asylum, Morningside.—Assistant Physician. Salary £175 per annum.

Royal Naval Medical Service.—Twenty-five Appointments.

Royal Waterloo Hospital for Children and Women, S.E.—Junior Resident Medical Officer. Salary at rate of £70 per annum, with board and washing. Also Senior Resident Medical Officer. Salary at rate of £90 per annum, with board and washing.

St. Mary's Hospital for Women and Children, Plaistow, E.—Assistant Resident Medical Officer. Salary at rate of £100 per annum, with board, residence, and laundry.

Salford Royal Hospital.—Casualty House Surgeon. Salary at rate of £100 per annum, with board and residence.

Salisbury (General) Infirmary.—House Surgeon, unmarried. Salary £100 per annum, with apartments, board, and lodging. Also Assistant House Surgeon. Salary £75 per annom.

Scarborough Hospital and Dispensary.—Senior and Junior House Surgeons. Salaries £100 and £80 per annum respectively, with board, residence, &c.

Sheffield, East End Branch of the Children's Hospital (Out-patient Department).—House Surgeon. Salary £120 per annum, with board and residence.

Swansea General and Eye Hospital.—House Surgeon. Salary £125 per annum, with board, washing, and attendance. Also House Physician. Salary £125 per annum, with board, apartments, and laundry.

Truro, Royal Cornwall Infirmary.—House Surgeon, unmarried. Salary £100 per annum, with rooms, board, and washing.

Walsall and District Hospital.—Junior House Surgeon and Anæsthetist. Salary £110 per annum, with board, residence, and laundry.

Walthamstow Education Committee.—Assistant School Medical Officer. Salary £300 per annum.

Warrington, Lancashire County Asylum, Winwick.—Assistant Medical Officer, unmarried. Salary £250 per annum, with board, apartments, attendance, and washing.

West Bromwich and District Hospital.—Assistant Resident House Surgeon and Anæsthetist, unmarried. Salary £100 per annum, with board, residence, and washing.

West London Hospital, Hammersmith-road, W.—Two House Physicians and Three House Surgeons for six months. Board, lodging, and laundry provided.

West Riding of the County of York, Storthes Hall Asylum, Kirkburton, near Huddersfield.—Assistant Medical Officer. Salary £230 per annum, with rooms, board, attendance, and washing.

Weston-super-Mare Hospital.—House Surgeon, unmarried. Salary £120 per annum, with residence, board. and laundry.

Winchester. Royal Hampshire County Hospital.—House Physician. Salary £80 per annum.

Windsor, King Edward VII. Hospital.—House Surgeon. Salary £100 per annum, with residence. board, laundry, and attendance.

Wrexham Infirmary.—Resident House Surgeon. Salary £120 per annum, with board, lodging, and washing.

The Chief Inspector of Factories, Home Office, London, S.W., gives notice of a vacancy for a Certifying Surgeon under the Factory and Workshop Acts at Leiston, in the county of Suffolk.

Births, Marriages, and Deaths.

BIRTHS.

Clapham.—On August 8th, at Fourth-avenue, Hove, the wife of Roderic Arthur Clapham, M.A., M.D., of a daughter.

Mole.—On August 10th, at 19, Mortimer-road, Clifton, Bristol, the wife of Harold F. Mole, F.R.C.S., of a son.

MARRIAGES.

Hills—Robertson.—On August 6th, Harold William Hills (Lieutenant, R.A.M.C.S.R.) to Margaret Robertson, daughter of H. R. Robertson.

Saunders—Minto.—On August 10th, at the Presbyterian Church, Whitley Bay, W. Eric Roper Saunders, M.R.C.S. Eng., L.R.C.P. Lond., to Ruth Ann, fourth daughter of the late Captain Andrew Minto, of Berwick-on-Tweed.

DEATHS.

Acton.—On August 8th, at The Glen, West End, Hants, Walter Acton, M.R.C.S., L.S.A., suddenly, after a long illness, aged 88.

Clarke.—On August 7th, at Brighton, Harry Edward Clarke, M.R.C.S., L.R.C.P., of The Avenue, Bedford Park, London, the youngest dearly loved son of the Rev. D. G. Clarke, Rector of Puttenham, aged 37. R.I.P.

Little.—On August 9th, at Dorset-square, N.W., John Fletcher Little, M.B. Cantab., M.R.C.P. Lond., aged 71.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

STUDENTS' NUMBER OF THE LANCET.

INFORMATION intended for the Students' Number of THE LANCET must be sent WITHOUT DELAY, addressed to the Sub-Editor, and marked on the envelope "Students' Number Only."

A SECRET REMEDY FOR SNAKE-BITE.

A CASE of fatal snake-bite is reported in the *Indian Medical Gazette* for July by Major F. Wall, I.M.S., the only unusual feature of which was the patient's reliance upon a secret remedy or antidote. A certain Mr. Fox, quaintly described as "a young, middle-aged European," in sound health, allowed himself to be bitten on the left wrist by a young krait (*bungarus cœruleus*) at about 10 A.M. The snake was about half grown, and it inflicted five punctures. Instantaneous pain came on, and the wounds began to bleed. Within a minute and a half the patient incised four out of the five punctures with a sterilised knife, after which he instilled a fluid antidote of secret composition into each wound; the fifth puncture was overlooked. Mr. Fox was not in the least alarmed, having implicit faith in his remedy. About four hours after the injuries he complained of stomach-ache, which he attributed to his lunch; and half an hour later he admitted having "pins and needles" in his legs. Uncertainty of gait and nausea followed, and later there were actual vomiting and imperfect vision. In spite of the progress of these symptoms the patient remained composed and hopeful, even though he then began to suffer from dyspnœa. At 7 P.M. he was admitted to hospital, still conscious but unable to stand up; and at 8 P.M. he died, ten hours after the intromission of the poison. The clinical course of the symptoms was typical of colubrine poisoning, and was of about average rapidity and intensity. What the secret remedy was which played this unfortunate patient so false does not appear.

MOTHERS' PENSION LAW.

Mr. F. P. Leay, British Consul at Boston, Massachusetts, U.S.A., reports that an Act, locally known by the above name, came into effect in September, 1913. It is intended to provide for suitably aiding mothers with dependent children, and constitutes a new departure in economic legislation as far as that section of the United States is concerned. The purpose of the Act is to enable poor mothers to bring up their children at home whilst they are receiving an education, and is based on the theory that separation of the mother from the child and the relegation of the latter to an institution is inimical to its best interests. The Act provides that all necessitous mothers of children under 14 shall receive such allowance in cash as a board appointed by the State shall consider proper to enable them to bring up and educate their children at home. Any relative legally obliged to contribute shall be compelled to do so. The State is to contribute one-third of the annual expenditure and the municipality the remaining two-thirds.

A CREDITABLE RECORD.

A VALUED correspondent writes:—"Dr. Lewis Reynolds, of High Wycombe, who is the father of four sons, has one of them in the Indian army, a second in the Royal Army Medical Corps, and one in the Field Artillery (now on his way to the front). The eldest of the four, though a member of our profession, has charge, as senior captain, of a large draft of Territorials who are, as likely as not, now being transported—no one knows where. If every medical man were equally liberal in his contribution to the fighting stock of this country England need have no fear when speaking with her enemy in the gate."

LEPROSY IN RUSSIA.

IN his annual report on the district of St. Petersburg, Mr. A. W. Woodhouse, the British Consul, quotes a statement to the effect that fresh cases of leprosy are continually being discovered in different parts of the empire, in 59 provinces of which lepers are registered. The number of leprous patients treated by doctors was 1025 in 1903, 1425 in 1906, 1686 in 1909, and 1621 in 1911. It is estimated that there are now at least 10,000 lepers in Russia. There are 21 leper institutions in the country, of which 17 are supported by voluntary contributions. The State does not provide sufficient accommodation, and therefore it is not compulsory by law to isolate lepers, many of whom are known to be engaged in various occupations amongst healthy communities.

NEURASTHENIA AND WORKMEN'S COMPENSATION.

IN the Manchester county court his honour Judge Mellor had before him an application by the Lancashire and Yorkshire Railway Company for the reduction of compensation being paid to F. T. Ambrose, a workman. Ambrose had had his head injured by a blow from an iron bar, for which he had been detained in the infirmary for two hours, but had only worked since on three occasions in five years. Professor J. W. Smith, who had examined Ambrose as medical referee, had reported that if a certain course were adopted he would probably be well enough to resume his work within three months. The employers were prepared to pay six months' compensation to end the matter. Counsel for the workman argued that the man did not wish to have a lump sum; and that Professor Smith's report said that though free from organic disease Ambrose was suffering from chronic neurasthenia and that his condition was such that he was not fit even for light work. Judge Mellor, after consultation with the medical referee, described the case as "a remarkable example of what might be called 'legal neurasthenia,'" and said that it was evident that the man would go on suffering until the legal aspect was finally dealt with. A reduction of compensation would have no effect, and he did not consider that under the Workmen's Compensation Act he had power to act on his own initiative and put an end to the existing conditions, even if that might be the best thing for the workman. It was a case where compensation should be stopped, but in the absence of an agreement he must make an award for the respondent Ambrose, with costs.

NERVES AND NOISES.

A CORRESPONDENT writes: At the present time it should be the endeavour of everyone to prevent as far as possible scares of any sort. Last week, on the morning after the declaration of war, a loud detonation, said to have been caused by the fusion of an electric cable in London, but more probably a thunderclap, gave rise to the silly suggestion that a German airship had dropped a bomb, and twice recently in a London suburb some excitement has been caused by sounds resembling rifle shots at night time. The fact that soldiers were in the neighbourhood immediately suggested that spies had been shot at, and local gossip confirmed the rumour with specific details. It behoves everyone in these anxious times not to give credence to silly rumours and to do all they can to allay the fears of the nervous.

◆

B. L.—Our correspondent has the choice of the following books:—Gunshot Wounds. By C. G. Spencer, M.B. Lond., F.R.C.S. Eng., Major, R.A.M.C. London: Henry Frowde and Hodder and Stoughton. 1908. Pp. 287. Price 5*s.* net.—Leçons de Chirurgie de Guerre: les Blessures faites par les Balles des Fusils. By J. L. Reverdin, Professeur à la Faculté de Médecine de Genève. Illustrated. Geneva: Georg et Cie. 1910. Pp. 224. Price Fr.7.50.—Modern Bullet Wounds and Modern Treatment, with Special Regard to Long Bones and Joints, Field Appliances and First Aid. Part of the Alexander Essay for 1903. By Major F. Smith, D.S.O., R.A.M.C. London: J. and A. Churchill. Pp. 96. Price 3*s.* net.—Wounds in War, the Mechanism of their Production and their Treatment. By Surgeon-General Colonel W. F. Stevenson, C.B., K.H.S., R.A.M.C. (Retd.) Third edition. London: Longmans, Green, and Co. 1910. Pp. 559. Price 16*s.* net.—Surgical Experiences in South Africa, 1899–1900. By G. H. Makins, C.B., F.R.C.S. London: Smith, Elder, and Co. 1901. Pp. 486. Price 16*s.*, may also be consulted with advantage.

Twenty Years' Subscriber.—1. No treatment can remove the scars, but if they are very bad it may be worth while to do skin grafting. The scars will gradually become less noticeable without any treatment. 2. For the itching a sedative ointment will be useful, such as: Hydrarg. ammon. gr. vi., amyli 2 dr., paraff. moll. ad 1 oz. This should be kept applied to the skin for as long as possible each day.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

The following magazines, journals, &c., have been received:—New Zealand Medical Journal, British Journal of Children's Diseases, Tidsskrift for den Norske Lægeforening, Dominion Medical Monthly, Archives of Roentgen Rays, Practitioner, Pediatrics, American Journal of Tropical Diseases and Preventive Medicine, Pharmaceutical Journal, Post Graduate, American Journal of Roentgenology, Canadian Journal of Medicine and Surgery, Cornell University Medical Bulletin, Archives Générales de Chirurgie, Archives of Pediatrics, American Journal of Medical Sciences, South African Nursing Record, Journal of Obstetries and Gynæcology of the British Empire, Medical Review of Reviews, Journal of Mental and Nervous Disease.

Medical Diary for the ensuing Week.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Dr. Pritchard: Bacterial Therapy Department. Mr. Gibb: Diseases of the Eye.

TUESDAY.—10 A.M., Dr. Simson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Souttar: Operations. Dr. Simson: Diseases of Women. Mr. Gibb: Diseases of the Eye.

THURSDAY.—9 A.M., Dr. Bernstein: Bacterial Therapy Department. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Mr. Gibb: Diseases of the Eye.

FRIDAY.—10 A.M., Dr. Simson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear, Eye Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Souttar: Operations.

LONDON HOSPITAL MEDICAL COLLEGE (UNIVERSITY OF LONDON), London Hospital, Mile End-road, E.

Demonstrations in Clinical Medicine:—

MONDAY.—2.15 P.M., Dr. Wall: Pulmonary Tuberculosis. (Clinical Theatre.)

TUESDAY.—2.15 P.M., Dr. Grünbaum: Diseases of the Blood. (Clinical Theatre.)

WEDNESDAY.—2.15 P.M., Dr. Miller: Abdominal Diseases. (Out-patient Department.)

THURSDAY.—2.15 P.M., Dr. Thompson: Diseases of the Nervous System. (Clinical Theatre.)

FRIDAY.—2.15 P.M., Dr. L. Smith: Common Cardiac Conditions. (Clinical Theatre.)

SATURDAY.—10.15 A.M., Dr. Hutchison): Demonstrations on Selected Cases. (Wards or Clinical Theatre.)

Demonstrations on Selected Surgical Cases and on Cases of Interest in the Wards of the Hospital:—

MONDAY.—2 P.M., Mr. Milne.
TUESDAY.—2 P.M., Mr. Lett.
WEDNESDAY.—2 P.M., Mr. Howard.
THURSDAY.—2 P.M., Mr. Warren.
FRIDAY.—2 P.M., Mr. Walton.

THE THROAT HOSPITAL, Golden-square, W.

MONDAY.—5.15 P.M., Special Demonstration of Selected Cases.
THURSDAY.—5.15 P.M., Clinical Lecture.

ROTUNDA HOSPITAL POST-GRADUATE COURSES, Dublin.

MONDAY.—10 A.M., Obstetrical Lecture: The Complications of Pregnancy: Vesicular Mole and Chorion Epithelioma. 11 A.M., Examination of Patients and Minor Operations.

TUESDAY.—10 A.M., Major Operations.

WEDNESDAY.—10 A.M., Obstetrical Lecture: The Complications of Pregnancy: Hydrorrhœa, Hydramnios. 11 A.M., Examination of Patients and Minor Operations.

THURSDAY.—10 A.M., Major Operations.

FRIDAY.—10 A.M., Gynæcological Lecture: The Anatomy of Uterine Prolapse. 11 A.M., Examination of Patients and Minor Operations.

For further particulars of the above Lectures, &c., see Advertisement Pages.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

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Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. I. of 1914, which was completed with the issue of June 27th, were given in THE LANCET of July 4th.

VOLUMES AND CASES.

VOLUMES for the first half of the year 1914 are now ready. Bound in cloth, gilt lettered, price 16*s.* carriage extra.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, August 12th, 1914.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Aug. 6	29·81	WSW	0·03	119	70	53	57	58	Overcast
" 7	29·90	W.	...	119	70	55	55	58	Cloudy
" 8	30·05	S.W.	0·08	72	61	55	57	60	Overcast
" 9	30·01	S.W.	...	110	70	59	61	65	Cloudy
" 10	30·12	S.W.	...	97	70	60	62	64	Overcast
" 11	30·32	W.	...	114	75	55	56	60	Fine
" 12	30·34	S.E.	...	123	77	58	61	65	Fine

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ABSTRACT OF

A Presidential Address

ON

HEREDITY IN MAN.

Delivered in Sydney on August 20th, 1914, before the Meeting of the British Association for the Advancement of Science,

BY WILLIAM BATESON, M.A., F.R.S.,
PRESIDENT OF THE ASSOCIATION.

[Professor Bateson commenced his address by referring to what he had said at Melbourne in regard to Mendelian analysis and the resulting discoveries. Although confession had to be made of deep ignorance in regard to theoretical aspects, he said that enough had been learnt of the general course of heredity within a single species to justify many practical conclusions which could not in the main be shaken. He then continued:]

THE FACTORIAL SYSTEM IN HUMAN INHERITANCE.

I propose now to develop some of these conclusions in regard to our own species—Man.

In my former address[1] I mentioned the condition of certain animals and plants which are what we call "polymorphic." Their populations consist of individuals of many types, though they breed freely together with perfect fertility. In cases of this kind which have been sufficiently investigated it has been found that these distinctions—sometimes very great and affecting most diverse features of organisation—are due to the presence or absence of elements, or factors as we call them, which are treated in heredity as separate entities. These factors and their combinations produce the characteristics which we perceive. No individual can acquire a particular characteristic unless the requisite factors entered into the composition of that individual at fertilisation, being received either from the father or from the mother or from both, and consequently no individual can pass on to his offspring positive characters which he does not himself possess. Rules of this kind have already been traced in operation in the human species; and though I admit that an assumption of some magnitude is involved when we extend the application of the same system to human characteristics in general, yet the assumption is one which I believe we are fully justified in making. With little hesitation we can now declare that the potentialities and aptitudes, physical as well as mental—sex, colours, powers of work or invention, liability to diseases, possible duration of life, and the other features by which the members of a mixed population differ from each other—are determined from the moment of fertilisation; and by all that we know of heredity in the forms of life with which we can experiment we are compelled to believe that these qualities are in the main distributed on a factorial system. By changes in the outward conditions of life the expression of some of these powers and features may be excited or restrained. For the development of some an external opportunity is needed, and if that be withheld the character is never seen, any more than if the body be starved can the full height be attained; but such influences are superficial and do not alter the genetic constitution.

The factors which the individual receives from his parents and no others are those which he can transmit to his offspring; and if a factor was received from one parent only, not more than half the offspring, on an average, will inherit it. [The reasons why mankind had not discovered such simple facts were considered. The individual body is a *double* structure, whereas the germ cells are *single*. Two germ cells unite to produce each individual body, and the ingredients they respectively contribute interact in ways that leave the ultimate product a medley in which it is difficult to identify the several ingredients. When, however, their effects are conspicuous the task is by no means impossible. If only pedigrees had been drawn the right way up, the essential truth that heredity can be expressed in terms of presence and absence must have at once become apparent. He continued:]

Let me not, however, give the impression that the unravelling of such descents is easy. Even with fairly full details, which in the case of man are very rarely to be had, many complications occur, often preventing us from obtaining more than a rough general indication of the system of descent. The nature of these complications we partly understand from our experience of animals and plants which are amenable to breeding under careful restrictions, and we know that they are mostly referable to various effects of interaction between factors by which the presence of some is masked.

EVIDENCE AFFORDED BY NORMAL AND ABNORMAL CONDITIONS.

Necessarily the clearest evidence of regularity in the inheritance of human characteristics has been obtained in regard to the descent of marked abnormalities of structure and congenital diseases. Of the descent of ordinary distinctions such as are met with in the normal healthy population we know little for certain. Everything points to the inference that the genetics of colour and many other features in man will prove exceptionally complex. There are, however, plenty of indications of system comparable with those which we trace in various animals and plants, and we are assured that to extend and clarify such evidence is only a matter of careful analysis. For the present, in asserting almost any general rules for human descent, we do right to make large reservations for possible exceptions. It is tantalising to have to wait, but of the ultimate result there can be no doubt.

I spoke of complications. Two of these are worth illustrating here, for probably both of them play a great part in human genetics. It was discovered by Nilsson-Ehle, in the course of experiments with certain wheats, that several factors having the same power may coexist in the same individual. These cumulative factors do not necessarily produce a cumulative effect, for any one of them may suffice to give the full result. In some cases, as in the primulas studied by Gregory, the effect is cumulative. [The curious case of the mulatto was described, Professor Bateson at present owning to a preference for regarding such examples as instances of imperfect segregation. There are many signs that in human heredity phenomena of this kind are common, whether they indicate a multiplicity of cumulative factors or imperfections in segregation. Such phenomena, however, in no way detract from the essential truths that segregation occurs, and that the organism cannot pass on a factor which it has not itself received. In human heredity, he continued, we have found some examples, and he believed that we shall find many more, in which the descent of factors is limited by sex. The classical instances are those of colour-blindness and hæmophilia. Both these conditions occur with much greater frequency in males than in females. Such descent he considers an admirable illustration of factorial predestination. It moreover exemplifies that *parental polarity* of the zygote to which I alluded in my first address, a phenomenon which we suspect to be at the bottom of various anomalies of heredity, and suggests that there may be truth in the popular notion that in some respects sons resemble their mothers and daughters their fathers. As to the descent of hereditary diseases and malformations, however, we have abundant data for deciding that many are transmitted as dominants and a few as recessives. The most remarkable collection of these data is to be found in family histories of diseases of the eye. Neurology and dermatology have also contributed many very instructive pedigrees. In great measure the ophthalmological material was collected by Edward Nettleship, for whose death we so lately grieved. Professor Bateson said that at various times it has been declared that men are born equal, and that the inequality is brought about by unequal opportunities. Acquaintance with the pedigrees of disease soon shows the fatuity of such fancies. The same conclusion, we may be sure, would result from the true representation of the descent of any human faculty. The results likely to flow from Mendel's work by direct application to the breeding of animals and plants were alluded to. But he imagined that the greatest practical change likely to ensue from modern genetic discovery would be a quickening of interest in the true nature of man and in the biology of races. He had spoken cautiously as to the evidence for the operation of any simple Mendelian system in the descent of human faculty; yet the certainty that systems which differ from the simpler schemes only in degree of complexity are at work in the distribution of characters among the human population cannot fail to influence our conceptions of life and of ethics, leading perhaps ultimately to modification of social usage. Men are so far from being born equal or similar that to the naturalist they stand as the very type of a polymorphic species. Even most of our local races consist of many distinct strains and individual types.

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[1] THE LANCET, August 15th, 1914, p. 435.

DEFECTIVES AND EUGENICS.

Professor Bateson then dealt with the subject of defectives, saying that it is not for us to consider practical measures. As men of science we observe natural events and deduce conclusions from them. He said that the remedies proposed in America, in so far as they aim at the eugenic regulation of marriage on a comprehensive scale, struck him as devised without regard to the needs either of individuals or of a modern State. The spirit of eugenic organisations almost of necessity suffers from a bias towards the accepted and the ordinary, and if they had power it would go hard with many ingredients of society that could be ill-spared. He proceeded:

Genetic research will make it possible for a nation to elect by what sort of beings it will be represented not very many generations hence, much as a farmer can decide whether his byres shall be full of shorthorns or Herefords. It will be very surprising indeed if some nation does not make trial of this new power. They may make awful mistakes, but I think they will try.

Whether we like it or not, extraordinary and far-reaching changes in public opinion are coming to pass. Man is just beginning to know himself for what he is—a rather long-lived animal, with great powers of enjoyment if he does not deliberately forego them. Hitherto superstition and mythical ideas of sin have predominantly controlled these powers. Mysticism will not die out: for those strange fancies knowledge is no cure; but their forms may change, and mysticism as a force for the suppression of joy is happily losing its hold on the modern world. As in the decay of earlier religions Ushabti dolls were substituted for human victims, so telepathy, necromancy, and other harmless toys take the place of eschatology and the inculcation of a ferocious moral code. Among the civilised races of Europe we are witnessing an emancipation from traditional control in thought, in art, and in conduct which is likely to have prolonged and wonderful influences. Returning to freer or, if you will, simpler conceptions of life and death, the coming generations are determined to get more out of this world than their forefathers did. Is it then to be supposed that when science puts into their hand means for the alleviation of suffering immeasurable, and for making this world a happier place, they will demur to using those powers? The intenser struggle between communities is only now beginning, and with the approaching exhaustion of that capital of energy stored in the earth before man began it must soon become still more fierce. In England some of our great-grandchildren will see the end of the easily accessible coal, and, failing some miraculous discovery of available energy, a wholesale reduction in population. There are races who have shown themselves able at a word to throw off all tradition and take into their service every power that science has yet offered them. Can we expect that they, when they see how to rid themselves of the ever-increasing weight of a defective population, will hesitate. The time cannot be far distant when both individuals and communities will begin to think in terms of biological fact, and it behoves those who lead scientific thought carefully to consider whither action should lead. At present I ask you merely to observe the facts. The powers of science to preserve the defective are now enormous. Every year these powers increase. This course of action must reach a limit. To the deliberate intervention of civilisation for the preservation of inferior strains there must sooner or later come an end, and before long nations will realise the responsibility they have assumed in multiplying these "cankers of a calm world and a long peace."

The definitely feeble-minded we may with propriety restrain, as we are beginning to do even in England, and we may safely prevent unions in which both parties are defective, for the evidence shows that, as a rule, such marriages, though often prolific, commonly produce no normal children at all. The union of such social vermin we should no more permit than we would allow parasites to breed on our own bodies. Further than that in restraint of marriage we ought not to go, at least not yet. Something, too, may be done by a reform of medical ethics. Medical students are taught that it is their duty to prolong life at whatever cost in suffering. This may have been right when diagnosis was uncertain and interference usually of small effect; but deliberately to interfere now for the preservation of an infant so gravely diseased that it can never be happy or come to any good is very like wanton cruelty. In private few men defend such interference. Most who have seen these cases lingering on agree that the system is deplorable, but ask where can any line be drawn. The biologist would reply that in all ages such decisions have been made by civilised communities with fair success both in regard to crime and in the closely analogous case of lunacy. The real reason why these things are done is because the world collectively cherishes occult views of the nature of life, because the facts are realised by few, and because between the legal mind—to which society has become accustomed to defer—and the seeing eye there is such physiological antithesis that hardly can they be combined in the same body. So soon as scientific knowledge becomes common property views more reasonable and, I may add, more humane are likely to prevail.

To all these great biological problems that modern society must sooner or later face there are many aspects besides the obvious ones.

[Infant mortality was referred to, and the opinion was expressed that in England the limit beyond which under present conditions of distribution increase of population is a source of suffering rather than of happiness has been reached already. Younger communities living in territories largely vacant are very probably right in desiring and encouraging more population. Increase may, for some temporary reason, be essential to their prosperity. Even the decline in the birth-rate of the intelligent and successful sections of the population (of the older communities) could not be granted without qualification.]

THE PROGRESS OF MAN.

In the study of history biological treatment is only beginning to be applied. For us the causes of the success and failure of races are physiological events, and the progress of man has depended upon a chain of these events, like those which have resulted in the "improvement" of the domesticated animals and plants. It is obvious, for example, that had the cereals never been domesticated cities could scarcely have existed. But we may go further, and say that in temperate countries of the Old World (having neither rice nor maize) populations concentrated in large cities have been made possible by the appearance of a "thrashable" wheat. The ears of the wild wheats break easily to pieces, and the grain remains in the thick husk. Such wheat can be used for food, but not readily. Ages before written history began, in some unknown place, plants, or more likely a plant, of wheat lost the dominant factor to which this brittleness is due, and the recessive, thrashable wheat resulted. Some man noticed this wonderful novelty, and it has been disseminated over the earth. The original variation may well have occurred once only, in a single germ cell.

So must it have been with man. Translated into terms of factors, how has that progress in control of nature which we call civilisation been achieved? By the sporadic appearance of variations, mostly, perhaps all, consisting in a loss of elements, which inhibit the free working of the mind. The members of civilised communities, when they think about such things at all, imagine the process a gradual one, and that they themselves are active agents in it. Few, however, contribute anything but their labour; and except in so far as they have freedom to adopt and imitate, their physiological composition is that of an earlier order of beings. Annul the work of a few hundreds—I might almost say scores—of men, and on what plane of civilisation should we be? We should not have advanced beyond the mediæval stage without printing, chemistry, steam, electricity, or surgery worthy the name. These things are the contributions of a few excessively rare minds. Galton reckoned those to whom the term "illustrious" might be applied as one in a million, but in that number he is, of course, reckoning men famous in ways which add nothing to universal progress. To improve by subordinate invention, to discover details missed, even to apply knowledge never before applied, all these things need genius in some degree, and are far beyond the powers of the average man of our race; but the true pioneer, the man whose penetration creates a new world, as did that of Newton and of Pasteur, is inconceivably rare. But for a few thousands of such men we should perhaps be in the palæolithic era, knowing neither metals, writing, arithmetic, weaving, nor pottery.

In the history of art the same is true, but with this remarkable difference, that not only are gifts of artistic creation very rare, but even the faculty of artistic enjoyment, not to speak of higher powers of appreciation, is not attained without variation from the common type. I am speaking, of course, of the non-Semitic races of modern Europe, among whom the power whether of making or enjoying works of art is confined to an insignificant number of individuals. Appreciation can in some degree be simulated, but in our population there is no widespread physiological appetite for such things. When detached from the centres where they are made by others most of us pass our time in great contentment, making nothing that is beautiful, and quite unconscious of any deprivation. Musical taste is the most notable exception, for in certain races—for example, the Welsh and some of the Germans—it is almost universal. Otherwise artistic faculty is still sporadic in its occurrence. The case of music well illustrates the application of genetic analysis to human faculty. No one disputes that musical ability is congenital. In its fuller manifestation it demands sense of rhythm, ear, and special nervous and muscular powers. Each of these is separable and doubtless genetically distinct. Each is the consequence of a special departure from the common type. Teaching and external influences are powerless to evoke these faculties, though their development may be assisted. The only conceivable way in which the people of England, for example, could become a musical nation would be by the gradual rise in the proportional numbers of a musical strain or strains until the present type became so rare as to be negligible. It by no means follows that in any other respect the resulting population would be distinguishable from the present one. Difficulties of this kind beset the efforts of anthropologists to trace racial origins. It must continually be remembered that most characters are independently transmitted and capable of such recombination. In the light of Mendelian knowledge the discussion whether a race is pure or mixed loses almost all significance. A race is pure if it breeds pure and not otherwise. Historically we may know that a race like our own was, as a matter of fact, of mixed origin. But a character may have been introduced by a single individual, though subsequently it becomes common to the race. This is merely a variant on the familiar paradox that in the course of time if registration is accurate we shall all have the same surname. In the case of music, for instance, the gift, originally perhaps from a Welsh source, might permeate the nation, and the question would then arise whether the nation, so changed, was the English nation or not.

THE RACIAL CHARACTERISTICS OF THE GREEKS.

Such a problem is raised in a striking form by the population of modern Greece, and especially of Athens. The racial characteristics of the Athenian of the fifth century B.C. are vividly described by Galton in "Hereditary Genius." The fact that in that period a population, numbering many thousands, should have existed, capable of following the great plays at a first hearing, revelling in subtleties of speech, and thrilling with passionate delight in beautiful things, is physiologically a most singular phenomenon. On the basis of the number of illustrious men produced by that age Galton estimated the average intelligence as at least two of his degrees above our own, differing from us as much as we do from the negro. A few generations later the display was over. The origin of that constellation of human genius which then blazed out is as yet beyond all biological analysis, but I think we are not altogether without suspicion of the sequence of the biological events. If I visit a poultry breeder who has a fine stock of thoroughbred game fowls breeding true, and ten years later —that is to say, ten fowl generations later—I go again and find scarcely a recognisable game-fowl on the place, I know exactly what has happened. One or two birds of some other or of no breed must have strayed in and their progeny been left undestroyed. Now in Athens we have many indications that up to the beginning of the fifth century so long as the phratries and gentes were maintained in their integrity there was rather close endogamy, a condition giving the best chance of producing a homogeneous population. There was no lack of material from which intelligence and artistic power might be derived. Sporadically these qualities existed throughout the ancient Greek world from the dawn of history, and, for example, the vase-painters, the makers of the Tanagra figurines, and the gem-cutters were presumably pursuing family crafts, much as are the actor families[2] of England or the professional families of Germany at the present day. How the intellectual strains should have acquired predominance we cannot tell, but in an in-breeding community homogeneity at least is not surprising. At the end of the sixth century came the "reforms" of Cleisthenes (507 B.C.), which sanctioned foreign marriages and admitted to citizenship a number not only of resident aliens but also of manumitted slaves. As Aristotle says, Cleisthenes legislated with the deliberate purpose of breaking up the phratries and gentes, in order that the various sections of the population might be mixed up as much as possible and the old tribal associations abolished. The "reform" was probably a recognition and extension of a process already begun; but is it too much to suppose that we have here the effective beginning of a series of genetic changes which in a few generations so greatly altered the character of the people? Under Pericles the old law was restored (451 B.C.), but losses in the great wars led to further laxity in practice, and though at the end of the fifth century the strict rule was re-enacted that a citizen must be of citizen-birth on both sides, the population by that time may well have become largely mongrelised.

Let me not be construed as arguing that mixture of races is an evil: far from it. A population like our own, indeed, owes much of its strength to the extreme diversity of its components, for they contribute a corresponding abundance of aptitudes. Everything turns on the nature of the ingredients brought in, and I am concerned solely with the observation that these genetic disturbances lead ultimately to great and usually unforeseen changes in the nature of the population. Some experiments of this kind are going on at the present time. [In illustration of this, reference was made to the United States and to Japan, as also to our own Peerage.]

Historians commonly ascribe such changes as occurred in Athens, and will almost certainly come to pass in the United States, to conditions of life and especially to political institutions. These agencies, however, do little unless they are such as to change the breed. External changes may indeed give an opportunity to special strains, which then acquire ascendency. The industrial developments which began at the end of the eighteenth century, for instance, gave a chance to strains till then submerged, and their success involved the decay of most of the old aristocratic families. But the demagogue who would argue from the rise of the one and the fall of the other that the original relative positions were not justifiable altogether mistakes the facts. Conditions give opportunities but cause no variations. For example, in Athens, to which I just referred, the universality of cultivated discernment could never have come to pass but for the institution of slavery which provided the opportunity, but slavery was in no sense a cause of that development, for many other populations have lived on slaves and remained altogether inconspicuous.

[The long-standing controversy as to the relative importance of nature and nurture, to use Galton's "convenient jingle of words," is, said Professor Bateson, drawing to an end, and of the overwhelmingly greater significance of nature there is no longer any possibility of doubt. It is faith, not evidence, which encourages educationists and economists to hope so greatly in the ameliorating effects of the conditions of life.]

BIOLOGY AND SCHEMES FOR REFORM.

In all practical schemes for social reform the congenital diversity, the essential polymorphism of all civilised communities must be recognised as a fundamental fact, and reformers should rather direct their efforts to facilitating and rectifying class-distinctions than to any futile attempt to abolish them. The teaching of biology is perfectly clear. We are what we are by virtue of our differentiation. The value of civilisation has in all ages been doubted. Since, however, the first variations were not strangled in their birth, we are launched on that course of variability of which civilisation is the consequence. We cannot go back to homogeneity again, and differentiated we are likely to continue. For a period measures designed to create a spurious homogeneity may be applied. Such attempts will, I anticipate, be made when the present unstable social state reaches a climax of instability, which may not be long hence. Their effects can be but evanescent. The instability is due not to inequality, which is inherent and congenital, but rather to the fact that in periods of rapid change like the present, convection currents are set up such that the elements of the strata get intermixed and the apparent stratification corresponds only roughly with the genetic. In a few generations under uniform conditions these elements settle in their true levels once more.

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[2] For tables of these families, see the Supplement to Who's Who in the Theatre.

In such equilibrium is content most surely to be expected. To the naturalist the broad lines of solution of the problems of social discontent are evident. They lie neither in vain dreams of a mystical and disintegrating equality, nor in the promotion of that malignant individualism which in older civilisations has threatened mortification of the humbler organs, but rather in a physiological coördination of the constituent parts of the social organism. The rewards of commerce are grossly out of proportion to those attainable by intellect or industry. Even regarded as compensation for a dull life, they far exceed the value of the services rendered to the community. Such disparity is an incident of the abnormally rapid growth of population and is quite indefensible as a permanent social condition. Nevertheless, capital, distinguished as a provision for offspring, is a eugenic institution; and unless human instinct undergoes some profound and improbable variation, abolition of capital means the abolition of effort; but as in the body the power of independent growth of the parts is limited and subordinated to the whole, similarly in the community we may limit the powers of capital, preserving so much inequality of privilege as corresponds with physiological fact.

At every turn the student of political science is confronted with problems that demand biological knowledge for their solution. Most obviously is this true in regard to education, the criminal law, and all those numerous branches of policy and administration which are directly concerned with the physiological capacities of mankind. Assumptions as to what can be done and what cannot be done to modify individuals and races have continually to be made, and the basis of fact on which such decisions are founded can be drawn only from biological study.

A knowledge of the facts of nature is not yet deemed an essential part of the mental equipment of politicians; but as the priest, who began in other ages as medicine-man, has been obliged to abandon the medical parts of his practice, so will the future behold the schoolmaster, the magistrate, the lawyer, and ultimately the statesman, compelled to share with the naturalist those functions which are concerned with the physiology of race.

ISOLATION ACCOMMODATION IN BRIDGEND.—The medical officer of health of the urban district of Bridgend, in Glamorgan, Mr. Wyndham Randall, once more in his annual report draws attention to the wholly inadequate accommodation available for the isolation of infectious disease in the district. Six years ago an isolation hospital was erected with accommodation for 12 patients to serve Bridgend and adjoining districts with a present population of about 44,000. During 1913 there were treated in the wards 35 cases from Bridgend alone, and on many occasions the number of patients greatly exceeded the normal accommodation. At one time 11 patients were in a six-bed ward and on another occasion several little girls had to be placed in a ward in which there were also men and boys. Five patients were for a short time in a two-bed ward and children had to be isolated in the kitchen and bathroom.

THE DIAGNOSTIC VALUE OF THE COMPLEMENT FIXATION REACTION IN TUBERCULOSIS.

PART I.—IN GENERAL HOSPITAL PRACTICE.

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PART II.—IN SANATORIUM PRACTICE.

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PART I.—IN GENERAL HOSPITAL PRACTICE.

To make a certain diagnosis of tuberculosis is in many instances a very difficult task, and for this reason numerous attempts have been made to procure a reliable biological test. The expectation raised by Koch's discovery of the tubercle bacillus has not been fully realised, since some patients with pulmonary tuberculosis have no bacilli in their sputum, and, again, the lesion is not always suited to direct examination. The tuberculin test in its various forms has proved very unreliable under the usual conditions of practice, while the agglutination and precipitin reactions are so frequently absent as to make them of no diagnostic value.

From a study of the literature dealing with complement fixation in tuberculosis it is clear that great diversity has been obtained in the results, while few have published series of cases of sufficient magnitude or sufficiently controlled to allow of exact deductions. The chief cause for the diversity in the results is the composition of the antigen used. It was not appreciated by the earlier writers that an antigen consisting of old tuberculin was not analogous to an emulsion of tubercle bacilli. In fact, the antisubstances to these antigens are entirely different (Bauer).

Bordet and Gengou in 1903 demonstrated that antibodies capable of uniting with tubercle bacilli and fixing complement were present in the sera of tuberculous animals. Wassermann and Bruck in 1906, after a series of experiments, stated that the sera of tuberculous patients who had been treated with tuberculin contained an antibody capable of fixing complement in the presence of tuberculin; they, however, only examined 13 cases of pulmonary tuberculosis. Citron shortly afterwards stated that antituberculin was present in the sera of tuberculous individuals who had not been treated with tuberculin. The results of Wassermann and his pupils must not be accepted with too much confidence owing to the crudeness of the technique and to the tendency of organ extracts to give non-specific reactions. Morgenroth and Rabinowitsch, and Meyer, using the technique described by Wassermann, were unable to confirm his results.

With tuberculin as antigen and a more elaborate technique Bermbach, Wolff and Mühsam, and others found antituberculin substances present in the sera of tuberculous patients. Wolff and Mühsam obtained 78 positive results in 105 cases of phthisis. Cohn obtained 15 out of 57 and Koch about one-third of positive results. These were all in cases of phthisis which had not been treated with tuberculin. Fua and H. Koch in tuberculous children obtained only negative results unless tuberculin treatment had previously been received. Recently (1914) Besredka, by using a special tuberculin, obtained by growing the bacilli on "egg broth," claimed a large percentage of positive results. His antigen, however, cannot be regarded as being altogether specific, since Inman and Kuss, Leredde and Rubenstein found that non-tuberculous syphilitics gave the reaction frequently. It is clear that certain tissue extracts containing liquid substances will operate as a Wassermann antigen and tend to give positive Wassermann reactions in cases of syphilis. In general it may be said that antituberculin is not constantly present in the sera of tuberculous patients, and in the case of children this is specially true (Engel and Bauer). After the administration of tuberculin, however, antituberculin is present more or less constantly. The use of tuberculin as an antigen, moreover, is inadvisable owing to its liability to give non-specific results.

With an emulsion of tubercle bacilli as antigen the results recorded are also variable. Wolff-Eisner obtained a large percentage of positive reactions, but considered the test non-specific, since positive results also occurred in non-tuberculous diseases. Frugoni came to the same conclusion in view of 6 per cent. of non-specific results. More recent workers, however, state that the reaction is specific. The best results have been described in phthisis, though only a small number of other forms of tubercle have been examined. Caulfield examined 104 cases of pulmonary tuberculosis, and of these 62 per cent. were positive; in Hammer's series 97 per cent. were positive; in Dudgeon's 84 per cent. Others, again, have obtained inferior results. Nevertheless, there is enough evidence to show that antisubstances are present in the sera of tuberculous individuals which are capable of fixing complement in the presence of tubercle bacilli, but it has been doubted whether they are present sufficiently constantly to make them of value for diagnostic purposes. This investigation was undertaken to test this point; it was hoped that by a more elaborate technique a higher percentage of positive results might be obtained.

Technique.

The technique which we have employed in carrying out the tests resembles in principle that which we have elaborated for the Wassermann reaction, and need not be referred to in detail. As an indicator we have used both sheep and ox corpuscles, and have found the latter to be of advantage when the test serum contains an excess of the so-called "normal amboceptor" for sheep's corpuscles. Further, we allow $1\frac{1}{2}$ hours instead of 1 hour as in the Wassermann reaction for fixation to occur.

The only reagent which requires special mention is the antigen. Considerable difficulty was experienced with this reagent, but after a series of experiments in which various tuberculins and preparations of tubercle bacilli were tested we found that a simple emulsion of living tubercle bacilli gave the best results. The emulsion ought to be made up freshly for each batch of tests, but as this is not always convenient a quantity sufficient for two or three tests may be prepared, but it should never be kept longer than a month.

Every strain of tubercle bacillus is not suitable to act as an antigen, and to obtain such a strain a certain selection must be exercised. That selected should emulsify fairly easily, in addition to having a good specific fixing power. The strain employed in the tests was of the human type isolated from a case of phthisis, and was grown on Dorset's egg medium, on which it produced a more or less diffuse growth in from 7 to 10 days. In making the antigen six culture tubes are taken and the growth scraped from the surface with a stout bent platinum wire into a weighing glass. The mass of tubercle bacilli is then weighed and an emulsion made in saline, so that there is 1 grm. of moist bacilli in 50 c.c. of saline. The emulsion is most easily obtained with the aid of Hayden's bacteria mill, which consists of a glass plate with a central depression and a polished glass pestle ground accurately to fit. Failing this an agate mortar may be used. The emulsion should be kept in a glass-stoppered bottle, and if thought necessary carbolic acid to $\frac{1}{2}$ per cent. may be added.

The actual amount required in the test must be estimated for each batch of sera, and we have found by experiment that a suitable quantity is a quarter of that amount which gives complete inhibition of hæmolysis when incubated without serum with the complement for $1\frac{1}{2}$ hours. Usually this will be found to be about 0·05 c.c. of the 1 in 50 suspension. The strength of the fixation of complement obtainable in tuberculosis is undoubtedly feeble when compared with the Wassermann reaction, and we have therefore made attempts to reinforce the action of the antigen by the addition of various substances. Among these substances may be mentioned alcohol, but although alcohol will definitely increase the "sharpness" of the fixation, its addition introduces a non-specific element into the test. We have found that tubercle bacilli and alcohol will function as a "Wassermann" antigen, and will give a positive reaction with most cases of syphilis. We notice, however, that in the current number of the *Journal of Hygiene* Dudgeon has described excellent results from the use of an alcoholic extract of tubercle bacilli, while in the same journal Dudgeon, Meek, and Weir state that they "have met with no positive reaction among our control sera obtained from presumably healthy individuals of the middle class." It would be important to know whether these investigators have satisfied themselves that their alcoholic extract does not give a positive reaction in a series of cases of syphilis, since this disease in particular requires differential diagnosis from many forms of tuberculosis.

Results.

In order to estimate the value of a biological test it is necessary to make quite certain that the diagnoses of the conditions under examination are as far as possible accurate. For this reason our cases have been divided into these "pathologically certain" and these "clinically certain," and it may be assumed that the diagnoses in the former groups are the more strictly correct. From "tentative" cases we are unable to draw reliable conclusions.

Further, if a biological test is to be used for diagnostic purposes, it must be shown to be strictly specific within certain "group" limits. No positive results may be encountered outside these "group" limits, although negative reactions may be met with in undoubted examples of the condition under discussion. If, however, these negative results are very frequent, the test as a routine measure loses much of its value. We shall therefore endeavour to show not only that the fixation reaction is specific for tuberculosis, but also that it is positive in a large percentage of cases.

GROUP I., "*Pathologically certain*" *cases.*—In this group are included only those cases of tuberculosis in which there was definite histological or

TABLE I.—*85 Pathologically Certain Cases.*

Number of observation.	Diagnosis.	Result.	Degree.	Histological examination.	Bacteriological examination.	Remarks.
10	Pulmonary tuberculosis.	Pos.	++++	—	+	—
17	,, ,,	,,	+++	—	+	—
18	,, ,,	,,	++++	—	+	—
28	,, ,,	,,	++++	—	+	—
29	,, ,,	,,	++++	—	+	—
30	,, ,,	,,	++++	—	+	—
31	,, ,,	,,	++++	—	+	—
32	,, ,,	Neg.	++	—	+	—
35	,, ,,	Pos.	++++	—	+	—
37	,, ,,	Neg.	+	—	+	First stage.
38	,, ,,	Pos.	+++	—	+	—
39	,, ,,	,,	++++	—	+	—
41	,, ,,	,,	++++	—	+	—
42	,, ,,	,,	++++	—	+	—
45	,, ,,	Neg.	+	—	+	Third stage.
46	,, ,,	Pos.	++++	—	+	—
48	,, ,,	,,	++++	—	+	—
49	,, ,,	,,	++++	—	+	—
53	,, ,,	,,	++++	—	+	—
56	,, ,,	,,	++++	—	+	—
57	,, ,,	Neg.	0	—	+	First stage.
58	,, ,,	Pos.	++++	—	+	—
59	,, ,,	Neg.	0	—	+	First stage.
60	,, ,,	Pos.	++++	—	+	—
62	,, ,,	Neg.	++	—	+	Second stage.
64	Tuberculosis of ankle-joint.	Pos.	+++	+	—	—
70	Tuberculosis of kidney.	,,	+++	—	0	Guinea-pig inoc. pos.
72	Tuberculous cervical glands.	Neg.	++	+	—	—
73	Tuberculous cervical glands.	Pos.	++++	+	—	—
74	Tuberculous epididymitis.	,,	++++	+	—	Von Pirquet pos.
77	Tuberculous cervical glands.	Neg.	0	+	—	—
79	General tuberculosis.	Pos.	++++	+	+	—
80	Tuberculous mastitis.	,,	++++	+	—	—
91	Tuberculosis of kidney.	Neg.	+	+	—	—
98	Tuberculous pleurisy.	,,	0	—	0	Guinea-pig inoc. pos.
99	Tuberculous cervical glands.	,,	0	+	—	—
100	Tuberculous cervical glands.	Pos.	+++	+	—	—
102	Tuberculous cervical glands.	Neg.	0	+	—	—
104	Tuberculosis of kidney.	Pos.	++++	+	—	—
105	Acute tuberculosis of lungs.	,,	++++	—	+	—
106	Tuberculosis of hip-joint.	,,	+++	+	—	—
107	Tuberculosis of kidney.	,,	++++	—	+	—
108	Tuberculosis of cervical glands.	Neg.	++	+	—	—
109	Tuberculosis of kidney.	Pos.	++++	+	—	—
114	Tuberculous epididymitis.	,,	++++	+	—	—
118	Tuberculosis of Fallopian tubes.	,,	++++	+	—	—
121	Tuberculosis of axillary glands.	Neg.	0	+	—	—
122	Tuberculosis of cervical glands.	Pos.	+++	+	—	—
123	Pulmonary tuberculosis.	,,	+++	—	+	—
128	,, ,,	,,	++++	—	+	—
133	General tuberculosis of glands.	,,	++++	—	+	—
136	Tuberculosis of cervical glands.	Neg.	0	+	—	—
138	Tuberculosis of cervical glands.	,,	0	+	—	—
139	Tuberculosis of kidney.	Pos.	++++	—	+	—
140	Tuberculous cystitis	,,	++++	—	+	—
162	Pulmonary tuberculosis.	Neg.	0	—	+	—
180	Tuberculous disease of ulna.	Pos.	+++	+	—	—
181	Tuberculosis of cervical glands.	,,	+++	+	—	—
182	Tuberculous orchitis.	,,	+++	+	—	—
183	Pulmonary tuberculosis.	,,	+++	—	+	—
196	Tuberculosis of cervical glands.	Neg.	0	+	—	—
197	Tuberculosis of mesenteric glands.	,,	0	+	—	—
198	Tuberculosis of kidney.	Pos.	+++	—	+	—
199	Tuberculous pyelitis	,,	++++	—	+	—
200	Tuberculosis of kidney.	Neg.	++	—	+	—
201	Pulmonary tuberculosis.	Pos.	++++	—	+	—
204	Tuberculous epididymitis.	Neg.	++	—	+	—
205	Tuberculous peritonitis.	Pos.	+++	+	—	—
209	Pulmonary tuberculosis.	,,	+++	—	+	—
210	,, ,,	,,	++++	—	+	—

TABLE I.—*85 Pathologically Certain Cases (continued).*

Number of observation.	Diagnosis.	Result.	Degree.	Histological examination.	Bacteriological examination.	Remarks.
211	Pulmonary tuberculosis.	Pos.	++++	—	+	—
212	,, ,,	,,	++++	—	+	—
213	,, ,,	Neg.	++	—	+	—
214	,, ,,	Pos.	++++	—	+	—
216	Tuberculosis of mesenteric glands.	Neg.	++	+	—	—
220	Pulmonary tuberculosis.	Pos.	++++	—	+	—
243	,, ,,	Neg.	++	—	+	First stage.
250	Caries of spine.	Pos.	++++	+	—	—
262	Pulmonary tuberculosis.	Neg.	+	—	+	Third stage.
266	,, ,,	Pos.	++++	—	+	—
267	Tuberculosis of prostate.	,,	++++	—	+	(In urine.)
296	Pulmonary tuberculosis.	,,	++++	—	+	—
297	Tuberculosis of cervical glands.	,,	+++	—	+	—
331	Pulmonary tuberculosis.	,,	++++	—	+	—
346	Tuberculosis of epididymitis.	Neg.	+	—	+	—

++++ = Complete inhibition of hæmolysis. + = slight inhibition. Only those amounts of inhibition which may be represented by ++++ and +++ are considered positive. 0 = no inhibition of hæmolysis.

bacteriological evidence of tubercle. All with the exception of a few cases of pulmonary tuberculosis were patients attending a general hospital.

An analysis of the above 85 cases gives the following result:—

	Cases.	Positive.	Percentage.
Phthisis	43 ...	33 ...	76·7
Surgical tuberculosis (with the exception of tuberculous glands)	26 ...	21 ...	80·7
Tuberculous glands	16 ...	6 ...	37·5

GROUP II., "*Clinically certain*" *cases.*—In this series the diagnosis of tuberculosis rests on clinical examination only, as opposed to bacteriological or histological.

In this series the results were as follows:—

	Cases.	Positive.	Percentage.
Phthisis and pleurisy ...	18	10	55·5
Surgical	42	30	71·4

GROUP III., *Tentative cases.*—The sera of 74 cases in which the diagnosis of tubercle was purely tentative were examined, and of these 18 were positive. The positive results included cases of pulmonary fibrosis, pleurisy, enlarged cervical glands, ulceration of bladder, synovitis, persistent pyrexia, &c.

GROUP IV., *Controls.*—The control cases, 87 in number, were taken without any selection and included a great variety of diseased conditions in addition to normal individuals. All were negative with the exception of 3 cases, these being 2 cases of leprosy and 1 of Addison's disease. In leprosy such a result is to be expected, while Addison's disease is frequently tuberculous in origin. The sera of 18 syphilitic patients with positive Wassermann reactions were tested and all reacted negatively; this is very important, as with tuberculin as antigen syphilitic patients frequently react positively.

In the face of these controls the reaction must be regarded as being highly specific.

The Diagnostic Value of the Reaction.

Even though our experience with this reaction is not very great, it is possible to draw certain conclusions with regard to its value. The reaction is

TABLE II.—*60 Clinically Certain Cases.*

Number of observation.	Diagnosis.	Result.	Degree.	Remarks.
247	Pulmonary tuberculosis.	Pos.	++++	—
248	Peritonitis and pleurisy.	,,	++++	—
249	,, ,,	Neg.	0	—
260	Tuberculous peritonitis.	Pos.	++++	—
264	Tuberculosis of hip-joint.	Neg.	++	—
269	Tuberculous abscess of groin.	Pos.	+++	—
272	,, peritonitis.	,,	++++	—
273	Spinal caries.	,,	+++	Abscess.
274	Tuberculosis of cervical glands.	,,	+++	—
276	Tuberculosis of knee.	,,	++++	—
278	,, hip.	,,	++++	Two years' duration.
279	,, knee.	,,	+++	—
280	Tuberculous peritonitis.	,,	+++	Operation.
286	Tuberculosis of hip.	Neg.	0	Abscess; no tubercle bacilli.
287	Caries of spine.	,,	0	Abscess.
288	,, ,,	Pos.	+++	—
290	Tuberculosis of kidney.	,,	++++	—
291	Pulmonary tuberculosis and pleurisy.	Neg.	0	No tubercle bacilli in sputum.
293	Pleural effusion.	Pos.	++++	—
295	Pulmonary tuberculosis.	Neg.	0	No tubercle bacilli in sputum.
298	Pleural effusion.	Pos.	+++	—
299	Tuberculous peritonitis.	Neg.	0	No tubercle bacilli.
301	Caries of spine.	Pos.	++++	—
10	Tuberculous meningitis.	,,	++++	Von Pirquet pos.
20	,, periostitis.	,,	+++	—
22	Tuberculosis of hip-joint.	,,	++++	—
24	,, trochanter.	,,	++++	—
25	Caries of spine.	Neg.	+	—
52	Pulmonary tuberculosis.	,,	0	No tubercle bacilli in sputum.
65	Tuberculosis of knee.	Pos.	++++	Von Pirquet pos.
66	Tuberculous choroiditis.	Neg.	0	,,
92	General tuberculosis.	Pos.	++++	—
132	Tuberculosis of knee.	,,	++++	—
137	,, ,,	Neg.	0	Old case.
141	Caries of spine, &c.	Pos.	++++	—
203	Tuberculosis of hip-joint.	,,	+++	—
206	Tuberculous os calcis.	,,	++++	—
207	Tuberculosis of hip-joint.	,,	++++	—
208	,, ,,	,,	+++	—
214	Pulmonary tuberculosis.	,,	++++	—
125	,, ,,	,,	++++	—
131	Tuberculosis of knee.	,,	+++	—
217	Psoas abscess.	,,	+++	—
237	Tuberculosis of tarsus.	,,	+++	—
240	Pulmonary tuberculosis.	,,	+++	—
242	,, ,,	,,	++++	—
302	Tuberculous peritonitis.	Neg.	0	—
303	Tuberculous osteomyelitis.	Pos.	++++	—
317	,, peritonitis.	,,	+++	—
318	,, ,,	,,	++++	—
320	Pulmonary tuberculosis and pneumothorax.	,,	++++	—
326	Pleural effusion and laryngitis.	,,	++++	No tubercle bacilli.
332	Tuberculous peritonitis.	,,	+++	Von Pirquet pos.
335	,, epididymitis.	Neg.	0	—
336	Psoas abscess.	Pos.	++++	—
337	Tuberculous peritonitis.	Neg.	0	—
339	,, ,,	,,	0	—
341	Pleural effusion.	,,	++	—
342	,, ,,	,,	0	—
346	Tuberculous epididymitis.	,,	+	—

specific in that a positive result indicates tuberculosis with certain group exceptions. We are well aware that in the future if these tests are carried out extensively several patients will be found to give a positive reaction when no evidence of tuberculosis is available, but such sporadic results will have little weight as evidence against the specificity of the test. As with the Wassermann reaction in syphilis, it will be possible for a particular group of persons to assert that the method gives too many positive results, with the full knowledge that their allegation cannot be controverted. The controls, the so-called "certain non-syphilitic individuals," do not, of course, exist, and therefore it is not possible to *prove* that persons who have not syphilis or tuberculosis do not give positive complement fixations. The belief in the specificity of these tests merely rests upon an intelligent appreciation of probabilities. If the tubercle reaction is compared with the Wassermann reaction a great difference is at once apparent. Everyone has not syphilis, and therefore the reaction of the mass of the population is negative, but practically everyone has or has had tuberculosis, and yet the reaction of the controls is not positive. It is found that a most trivial lesion which may even be overlooked in the post-mortem room will give a positive Wassermann reaction, but in the case of tuberculosis the lesion must be of considerable dimensions before the reaction can detect it. A caseous bronchial gland will not give a positive reaction; indeed, the common affections of the cervical glands will usually yield a negative result. On the whole we have come to the conclusion that a lesion in order to give a positive result must be of such dimensions as to constitute "disease," and require the intervention of the physician or surgeon. We look upon the positive reaction, therefore, as indicating "active tuberculosis."

It will thus follow that the complement fixation test is of much greater value than the cutaneous reaction for instance. This latter indicates a state of hypersusceptibility to tubercle, and such a state may be present even though the lesion is quiescent or cured. It is no indication of "active tuberculosis." When a particular condition is under examination and is suspected of being tuberculous a positive von Pirquet reaction will be of relatively little value, since so many adults are sufficiently tuberculous to give a positive result. A positive complement fixation will, however, strongly support the suggestion that the condition is tuberculous because it indicates active tubercle, and there is always a certain improbability that one individual is suffering from two complaints at the same time. This method of argument must, nevertheless, be utilised with great care. It is true that when a Wassermann reaction is positive it is extremely probable that any lesions found are due to syphilis. Certain well-known exceptions to such a generalisation of course exist, but it is certainly common practice to assume the syphilitic nature of every lesion unless distinct evidence to the contrary is available. That such a method of argument is seldom wrong is merely due to the fact that syphilis is a relatively rare disease. When, however, the general population is largely tuberculous, it must frequently happen that an actively tuberculous individual is afflicted with some other non-tuberculous disease, and therefore the complement-fixation reaction must always be used for regional diagnosis with the greatest circumspection, and it would appear that this test, however perfected, can never attain to the great practical value of the Wassermann reaction.

In conclusion, we must express our thanks to the staff of the London Hospital for the supply of material, and in particular to Dr. Cecil Wall. To Dr. H. M. Turnbull we are indebted for the diagnoses and histological examinations in many cases.

PART II.—IN SANATORIUM PRACTICE.

Technique.

The technique conformed closely to that of the original Wassermann reaction, and it was so arranged that each of the reagents used in the test—viz., serum, antigen, complement, hæmolytic amboceptor, and blood—was contained in 0·5 c.c. of fluid, so that the total volume in each tube was 2·5 c.c. The serum-antigen-complement was allowed two hours in the incubator at 37° C. for fixation to occur, and after the addition of the amboceptor and blood one hour in the incubator was allowed for lysis to take place. Of course, all the preliminary titrations were carried out in a similar way as regards the time allowed and the temperature.

After the final incubation the tubes were placed overnight in the ice-chest and the results read off on the following morning. In reading the results in the definite cases of pulmonary tuberculosis only the faintest tint of colour in the supernatant fluid was allowed; anything more than this was called negative. On this account it is probable that a certain number of weakly fixing sera have been put down as negative.

Of the constituents of the test only the antigen requires detailed description, as the value of the reaction depends on the suitability and proper dosage of the antigen. The other factors only require a slight explanation.

1. *Serum.*—The serum under investigation was always inactivated by heating at 56° C. for half an hour, and was used in a quantity of 0·1 c.c. Quantitative tests with diminishing amounts of the serum were frequently employed.

2. *Complement.*—The complement was obtained from a single guinea-pig on each occasion. The blood was drawn the evening before, and after clotting the serum was allowed to separate spontaneously. A titration was carried out each time before use.

3. *Hæmolytic amboceptor.*—In the great majority of the cases this has been an anti-sheep serum, but occasionally an anti-ox serum was employed. The latter may, perhaps, be preferable in the cases in which a large amount of natural amboceptor for sheep blood cells is present in the serum. Two and a half times the minimal lytic dose of the amboceptor was employed in the test.

4. *Blood.*—This was always a 5 per cent. suspension of washed blood.

5. *Antigen.*—The antigen employed has been a freshly made emulsion of a young culture of tubercle bacilli in salt solution. The strength of this emulsion was 1 : 500, the bacilli being weighed moist after having been scraped off the surface of the glycerine egg medium. This emulsion has always been made up immediately before use and has not been sterilised in any way either by heat or chemicals. As far as the comparative antigenic value of different strains of tubercle bacilli is concerned I have not found any marked differences, but it is advisable to select a strain which grows quickly in a moist easily emulsifiable layer. On this account the rapid growth on a glycerine egg medium is superior to the growths obtained on glycerine agar or on glycerine bouillon. The moist growth on glycerine potato has given good results, but as a rule is not so valuable as a young growth on glycerine egg.

I think that the emulsion ought to be made up each time immediately before use, as the keeping properties of such an antigen are doubtful. In comparative experiments carried out with a fresh and a stored antigen on the same sera, at the same time and with the same complement, I have always obtained better and sharper results with the fresh emulsion. This has been the case even when the stored antigen was only a week old.

It is necessary to carry out a titration of the antigen each time before use, and the usual method of doing this is to take a fixed dose of complement (generally twice the minimal lytic dose), and to titrate the antigen with this. For the actual experiment the antigen is then usually taken in a quantity equal to half of the largest dose which does not show any trace of "Eigenhemmung" in the titration. This method, as a rule, gives excellent results in connexion with tuberculosis, but occasions arise when the "Eigenhemmung" is so marked that one is forced to use a very minute amount of antigen in the actual fixation experiments, if unspecific summation effects are to be avoided, and I have found that such small amounts of antigen are not sufficient to cause specific fixation in the presence of a weakly binding serum. This phenomenon of "Eigenhemmung" was for a long time a source of difficulty, and it was only when the same antigen was titrated with several complements that it was recognised that it was the guinea-pig serum which was at fault and not the antigen. This difference in complements is important, and is not shown at all in the ordinary titration of the complement. A serum may be very potent in its complementing power, and yet have such a capacity for being absorbed by an emulsion of tubercle bacilli that it is almost useless for complement-fixation work if the titrations are only carried out in the ordinary way. Although complements of this kind are only occasionally met with, it is necessary to have some other method of titration which will enable us to use a large dose of antigen without any fear of unspecific fixation. I think that I have overcome this difficulty by titrating the complement in the presence of a fixed amount (0·5 c.c.) of the antigen, and in this way estimating the amount of complement absorbed by this quantity of antigen. Then, in the examination of sera, a slight increase (say 20 per cent.) of the amount of complement necessary to bring about complete lysis in the titration is used, the dose of antigen remaining the same. Occasionally, also, I have titrated the complement in the presence not only of a fixed dose of antigen, but also of a normal inactivated serum. When this procedure is adopted it is not necessary for the actual experiment to increase the titre dose of complement, but the method is more difficult in actual work because normal sera differ in their effects, some increasing, others definitely decreasing, the "Eigenhemmung" of the antigen. Possibly the use of a "pool" of a large number of normal sera would be free from this objection, and might make the selection of the proper dose of complement simpler and more accurate. When this freshly made emulsion of tubercle bacilli is used as the antigen good results may be obtained whatever method of titration is adopted, but either of the last two methods will give more consistent results, and will enable one to avoid those occasions when all the sera come out negative owing to the very minute dose of antigen which must be employed. Kotzewaloff has lately emphasised this difference in complements in connexion with the Wassermann reaction, but it is even more important when working with tuberculosis.

Results.

Using the technique described above, a number of cases of pulmonary tuberculosis has been examined, with the results shown in the subjoined tables.

A fifth table consists of healthy persons. In all, the serum from 52 healthy persons was examined on 187 occasions and a negative result was obtained on each occasion.

TABLE I.—*Cases of Pulmonary Tuberculosis with Tubercle Bacilli present in the Sputum.* (The cases are arranged in groups according to the Turban classification.)

Groups.	Number of cases.	Complement fixation.	
		Positive.	Negative.
I.	91	79 (88·6 per cent.)	12
II.	260	233 (89·6 ,,)	27
III.	116	92 (79·3 ,,)	24
Totals	467	404 (86·5 ,,)	63

TABLE II.—*Suspected Cases of Pulmonary Tuberculosis but without any Tubercle Bacilli in the Sputum.* (The diagnosis of tuberculosis was supported in each case either by the opsonic index or by a focal reaction to subcutaneous injections of tuberculin, or by both.)

Number of cases.	Complement fixation positive.	Complement fixation negative.
13	9	4

TABLE III.—*Suspected Cases, as in Table II., but where the Diagnosis of Tuberculosis was Negatived by the Opsonic Index and by the Absence of any Focal Reaction to Tuberculin.*

Number of cases.	Complement fixation positive.	Complement fixation negative.
47	1 (?)*	46

* This case gave only incomplete fixation at first. Three days after the last injection of tuberculin (for diagnosis) the fixation result was completely negative, whilst 14 days later it had again become positive.

TABLE IV.—*Containing a Number of Cases which were at first Suspected of being Tuberculous.*

Cases.	Complement fixation.
Sarcoma of lung.	Negative.
Carcinoma of larynx.	,,
Malignant growth in mediastinum.	,,
Carcinoma of liver.	,,
Carcinoma of stomach.	,,
Mediterranean fever.	,,
Aortic regurgitation.	,,
Pyelitis (bacilli coli).	,,

In addition to the results given in the above tables, a number of sera from cases of pulmonary tuberculosis has been examined with other antigens. Although the technique otherwise has been the same as that described, the results are very much inferior to those obtained when a fresh emulsion of tubercle bacilli is used. These antigens were (1) the T.O.I. of Koch, as used in the Institut für Infektionskrankheiten, Berlin, and for which I am indebted to Stabsarzt Dr. B. Möllers; and (2) saline extract of pulverised tubercle bacilli, both alone and with the addition of alcohol or cholesterin.

The saline extract was prepared by emulsifying pulverised tubercle bacilli in salt solution (1 grm. of powder in 1 litre of a 0·85 per cent. salt solution), digesting at 50° C. for 24 hours, and afterwards for 48 hours in the ice-chest, with frequent shaking. The emulsion was then centrifuged and finally filtered through paper. The almost clear filtrate was used as the antigen, alone and also with additions of alcohol and cholesterin.

The results were as follows. 1. With the T.O.I. (Koch) as antigen, out of 50 cases the complement fixation was positive in 18, or 36 per cent., and negative in 32. 2. With the saline extract as antigen, out of 14 cases the complement fixation was positive in 4, or 28·5 per cent., and negative in 10. 3. With the saline extract plus an addition of absolute alcohol as antigen, the alcohol being added in the proportion of 1:60, out of 9 cases the complement fixation was positive in 5, or 55·5 per cent., and in 4 it was negative. 4. With the saline extract plus an addition of cholesterin as antigen, the cholesterin being added as a 1 per cent. alcoholic solution in the proportion of 1:60, out of 19 cases the complement fixation was positive in 8, or 42·1 per cent., and in 11 it was negative. A comparison of these results with those obtained when using a freshly made emulsion of tubercle bacilli as antigen, indicates the definite superiority of the latter.

Value of the Reaction in the Diagnosis of Pulmonary Tuberculosis.

Taking into consideration the high percentage of positive results in cases of pulmonary tuberculosis (with tubercle bacilli present in the sputum), and the fairly definite conformity between the positive results and the ultimate diagnosis in suspected cases, in seems fair to hold the view that, in such suspected cases, a positive finding is of considerable value in establishing a diagnosis.

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CONWAY AND PENMAENMAWR ISOLATION HOSPITAL.—It has always been the custom for the patients who are sent to the Conway and Penmaenmawr joint hospital to be attended by their own medical attendants, for which service a fee of one and a half guineas weekly is paid by the respective district councils. The joint hospital board recently discussed the desirability of altering this arrangement and engaging the services of a local practitioner who for an annual sum should attend those patients who were not themselves prepared to pay for attendance by their own medical attendants. It was pointed out by the medical officer of health, Mr. G. L. Travis, that there might be difficulty in persuading patients to go to the hospital if the medical attendant was also in private practice in the district, so it appears probable that no alteration will be made in the existing arrangements, which are said to have worked satisfactorily hitherto.

SEPSIS IN THE RECOGNITION AND NON-RECOGNITION OF SYPHILIS.

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THE very great importance of sepsis as a complicating factor to the pathological and clinical manifestations of syphilis to the patient and his relatives, his doctors, and also to the human race at large, is admitted. First we may consider in brief detail the subject in the various aspects.

(*a*) As regards the teaching of knowledge of syphilis. At hospitals students are taught to recognise syphilis from the examples of septic syphilis brought to their notice by their teachers. The septic factor in syphilis exaggerates its characters and furnishes some new ones of so great importance that the great text-books have taken such septic characteristics as illustrative of the syphilitic nature of the lesion. For instance, what is more widely accepted and taught to students than that the induration of a chancre is characteristic of it? But the hardness of a chancre is only seen typically when it is septic. Put that chancre on the skin or finger instead of under the septic prepuce and there will be much less, perhaps little or no, induration. Yet the lesion is a chancre and syphilitic. The induration is, therefore, very largely a sign of the accompanying septic inflammation and not of the syphilis. This is an example of how the student is taught to recognise much in syphilis by its septicity and not by its specific characters. With such teaching can he be expected to recognise a clean chancre when he sees it? Hence when the student becomes a doctor he has not been taught to recognise syphilis in the more cleanly class amongst whom he may largely practise. This suggests that the scarcity of syphilis seen amongst the middle and upper classes in general practice may be due to its not being recognised. And such patients as show the results of untreated syphilis—e.g., general paralysis of the insane—come from that very class.

(*b*) As regards the medical man. He may not recognise "aseptic" syphilis, though he is probably familiar with the manifestations of septic syphilis such as he has seen at hospital in his student days and recognised in his post-graduate career.

(*c*) As regards the treatment. I suppose there are few diseases which, if recognised early, are more studiously treated and more uniformly yield good results from treatment than syphilis. The progress of modern knowledge of the treatment of this disease has been remarkable. If only the disease is recognised it can be efficiently treated. It can now be seen clearly how much of the clinical success attainable depends on the recognition of the disease so that no sufferer can remain untreated.

(*d*) As regards the relatives and the community. Syphilis which is not recognised and not treated patients may transmit both to this and to future generations. Then they appear with nervous diseases, such as locomotor ataxia, general paralysis of the insane, or other forms of insanity, and there is no history of syphilis. The histories of patients with negative statements regarding syphilis cannot be relied upon even though patently honestly given.

(*e*) As regards the patient. If belonging to better educated classes, the unfortunate patient is apt to pay a penalty for his cleanliness in the disease not being diagnosed and its nature overlooked. Consequently he has no treatment; or, in other words, his very cleanliness counts against him and his. The virtue which he undoubtedly has is not rewarded properly.

It would be possible, such as by pointing out how many cases of syphilis are recognised for the first time when general paralysis of the insane has declared itself, to multiply the number of examples to which the subject of this paper, the non-recognition of syphilis, has special reference. Reference need only be made in this connexion to the works of Dr. F. W. Mott. Realising that the infection of syphilis is frequently combined with other infections, a mixed infection resulting, and that different varieties of spirochætes may cause different varieties of disease, we begin to understand how it is that pathological tests, such as Wassermann's, so often give variable and doubtful results, and how mercury yields successful treatment in one case, half succeeds in another, and utterly fails in a third. Indeed, in different varieties of spirochætes are seen possible explanations for many clinical variations in the disease. It may be put in another way: we begin to see in what is clinically called "syphilis" many diseases which have similar characters. John Hunter is well known to have put together both syphilis and gonorrhœa. Now we separate them, but it would appear that both known diseases represent several imperfectly known diseases which posterity will differentiate just as surely as we have separated the one disease of John Hunter's time into at least two diseases.

At the present time, when there is sitting a Royal Commission on Venereal Diseases, it is proper that we should set "our house in order" and appreciate the fact that venereal diseases are the varying summation of mixed infections, and according to the predominant factor in that mixed infection they appear as syphilis, gonorrhœa, soft sores, phagedæna, and so forth, and that the septic factor accompanying the mixed infection, according to its degree, modifies the appearances of the predominant disease both clinically and pathologically. It is of the highest importance to patients, doctors, the public, and the legislators that these facts should be thoroughly appreciated. Let them also know that on account of their education doctors not being fully equipped fail to recognise syphilis when it is kept clean, or even aseptic, such as is found in the middle and upper classes. Hence this disease in the middle and upper classes is very apt to be untreated, and will claim its victims in later life.

With regard to syphilis in consulting practice, it is only the unusual which, so to speak, passes the practitioner and reaches the consultant, and the unusual often means simply the absence of sepsis.

Dr. David Watson, of Glasgow,[2] in his recent work on gonorrhœa has given us an idea of the number of organisms to be found in the preputial cavity. He says of the extensive flora present: "It will be seen that we have here a flora with a sufficiently mischievous potentiality requiring only the production of a lesion to give its pathogenic members their opportunity. Regular cleansing has a marked effect in reducing the numbers of these organisms and, on the other hand, phimosis favours their growth." Here is an illustration of how syphilis may be septic or relatively clean. In a more or less aseptic condition a primary sore may be nothing more than a granulating spot with little or no induration, which is slow to heal, with little or no secondarily enlarged glands—a condition which is easily overlooked, particularly on the not easily inspected genitalia of a female. Thus a chancre or primary sore is robbed of the chief features by which it is taught in medical schools it should be recognised. Indeed, I would go so far as to urge that every granulating sore which is slow to heal, and particularly when on a part liable to infection, such as a doctor's finger, should be suspected of being a primary syphilitic sore and examined for the spirochæta pallida. Indeed, it may be needful to make repeated examinations to prove the presence of the spirochæta pallida. To prove its absence the greater the number of examinations the greater the certainty.

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[2] Gonorrhœa and its Complications, 1914, Kimpton, p. 179.

Since it has been proved that the finding of the spirochæta pallida in the secretion of a sore shows its syphilitic nature, a search should be made for this organism in the discharge from a suspicious sore. It so happens that at the present time such an examination is not usually advised until the patient has been referred to a consultant. There is no reason why this should be so, and it would be better for the patient if it was done by his general practitioner. I have found chancres on the finger, nose, tonsil, skin, and inside the urethra, where the condition had not been suspected. But it is not always worldly-wise to prove the nature of such a disease in every case, provided the patients are treated and others are protected from the disease. To have the presence or absence of the spirochæta pallida demonstrated is simpler and less expensive to the patient than to have a Wassermann test done, the reaction of which cannot be expected until the secondary stage has commenced.

To recapitulate, an "aseptic" condition of a primary sore may so mask its nature as to render it and the bubo quite unrecognisable; its nature may be suspected from its slowness in healing; its pathology may be proved by the demonstration of the presence of the spirochæta pallida.

In the secondary stage of syphilis it has long been recognised, "as in a glass darkly," that an additional septic infection makes the secondary symptoms and signs very much worse. For instance, it has long been advised that a subject with primary syphilis should have the mouth and teeth attended to by a competent dentist or the secondary symptoms in the mouth will be much worse. As a striking criticism on smoking, for the same reasons it has long been advised that the practice should be discontinued. Certain it is that the tremendous crops of secondary rashes and condylomata seen in hospital patients are not often seen in consultant practice. Indeed, but for a few transient spots and perhaps a slight transient sore throat, the secondary stage of syphilis may pass away within a day and may very easily be unrecognised.

At this stage it is easier to have a Wassermann reaction demonstrated positive than to find the spirochæta pallida in the sparse secondary signs. But just as the primary stage of syphilis may pass unnoticed in the well-kept and cleanly subject, so may the secondary stage pass unnoticed. In consequence there is nothing to interfere with the transmission of the disease to any offspring. Syphilis without outward lesion is not easily transmitted to the same generation.

In the tertiary stage there is a similar state of things. In hospital practice gummata are usually very obvious and easily diagnosable from their size, shape, the presence of a wash-leather slough, &c. In the generally less septic people of private practice a gumma is often a shallow clean ulcer with a well-defined margin, roughly circular in shape and with sharp margin; its base is formed of red healthy granulations, no slough is present, the sore is slow to heal, and when it does so easily breaks down again and again, unless iodide of potassium has been given. I could give examples, save that the details might be inconvenient, of private patients whom I have seen in consultation with unusually competent practitioners—old hospital officers—where persistent symptoms yielded to iodide of potassium, syphilis having been previously unsuspected.

At the present time, if the Wassermann test is negative, the fact is relied upon by many to demonstrate that syphilis is absent. Conversely a positive Wassermann test is held to show the presence of syphilis. Yet when a sample of a patient's serum is sent to several independent pathologists instances have been known where some have said that syphilis was certainly present, while others have been as equally certain that it was not. Hence there is an enormous personal factor in the interpretation of Wassermann's reaction. So much so that no reliance can be placed on the result unless unanimously confirmed by several pathologists working independently. Evidence from repeated examinations by the same pathologist is, as a rule, less worthy of trust.

Even in cleanly subjects tertiary syphilis, when suspected, is easily recognisable, and much could be done to prevent the spread of the disease if only all syphilitics had tertiary syphilis. But only a percentage of those infected show such manifestations. In the tertiary stage Wassermann's blood reaction is positive, and the spirochæta pallida has been demonstrated to exist in gummata. The latter observation is very important, because hitherto it has been taught that the tertiary stage is not contagious. But if the spirochæta pallida is present it must be contagious.

From these observations it will be seen that in the more cleanly classes of the community syphilis can be quite overlooked or not recognised in its primary, secondary, or tertiary stage; and consequently its transmission may be unchecked and its dissemination unimpeded. When we are first qualified we see but little of the disease. As we grow older we see more and more, and we appreciate that it exists untreated in many houses. In this, syphilis is similar to insanity, the spring and the winter of the disease meeting.

In the very places where the medical student is taught to recognise syphilis the superadded septic factor predominates, making the primary sore hard and characteristic, and its bubo obvious; the secondary signs are multiple and patent, and the tertiary signs glaringly unmistakable. When that student qualifies as a medical man he practises amongst more cleanly and relatively aseptic people, where the primary sore may be easily overlooked, the secondary signs are sparse, and only a proportion of the sufferers get gummata; yet it is his business and duty to recognise, treat, and prevent the transmission of the disease.

From such considerations as these it is easy to understand that some instances of syphilis, both acquired or congenital, go unrecognised and are transmitted unchecked through the community.

Harley-street, W.

THE IMPORTANCE OF A VERY THOROUGH EXAMINATION IN CASES OF FOREIGN BODY ALLEGED TO HAVE BEEN SWALLOWED OR INHALED.

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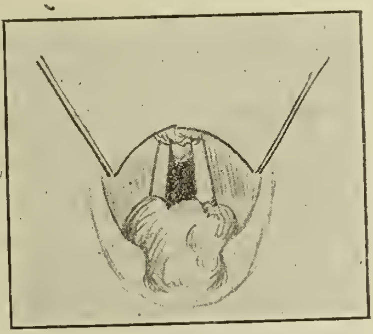
THIS paper is written with the purpose of calling attention to the serious results which may arise from delay or failure to recognise the impaction of a foreign body in the air or food passages. A few of the cases, seen or recorded, are briefly recited below, and clearly indicate what frequently happens.

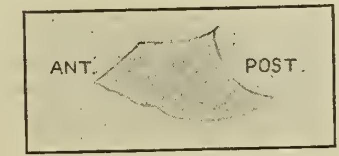
CASE 1.—On July 3rd a little girl, aged 7, was sent to me by Dr. J. D. Rolleston, of the Grove Fever Hospital, who suspected a foreign body in the air passages. Four months before I saw her she swallowed a rabbit bone and was taken to a hospital casualty department. As there were neither symptoms nor signs of the presence of the bone after the examination of the throat she was sent home, and the mother was told to bring the child again if anything untoward occurred. Three and a half weeks later the child returned with cough, stridor, and dyspnœa, and she was admitted and treated for bronchitis for three weeks and then discharged as improved. One week after her discharge she was said to have laryngeal diphtheria and was sent to the fever hospital. The symptoms and signs were stridor, croupy cough, aphonia, and recession of the chest. The fauces and epiglottis were clean, but the diphtheria bacillus was present in the faucial cultures. Two doses of antitoxin were given with improvement. As the stridor and aphonia persisted and the breath became offensive a foreign body was suspected.

FIG. 1.



Sketch of larynx made immediately after removal of bone.

FIG. 2.



Fragment of bone, actual size.

The child was discharged from the fever hospital on July 2nd, four months after the alleged swallowing of the rabbit bone, and sent to Charing Cross Hospital. At that time she looked thin and undersized, and the original symptoms were marked. Her mother repeatedly stated that the stridor, cough, and loss of voice were present before she swallowed the bone. Examination of the larynx at the first attempt was difficult; the stridor and dyspnœa increased when the child cried, and only a fleeting glimpse of the glottis was obtained. I was inclined to diagnose recurrent laryngeal paralysis from pressure of mediastinal glands, as the case appeared to be identical to two cases of that nature previously seen, and there was considerable enlargement of the cervical glands. However, at a second examination of the larynx some 10 minutes later a better view was obtained, and a greyish-white object, surrounded by granulation tissue, was seen in the glottis, and I felt confident that this was the lost rabbit bone. The child was admitted, and the case dealt with by Killian's suspension method under chloroform, ♏ viii. of syrup of codeine having been given one hour before the commencement of the anæsthetic. The bone (see Figs. 1 and 2) was found lying in the glottis with the posterior sharp point firmly imbedded in a mass of granulation tissue on the posterior commissure and the shorter anterior point buried in the epiglottis. The vertical projection was easily seized in the forceps, and the anterior point of the bone was then disengaged and the posterior end pulled out. The whole operation was performed in less than two minutes, but during her recovery from the anæsthetic I kept the child in the suspension laryngoscopy position in order to watch the breathing and to ascertain whether the large mass of granulation tissues caused sufficient obstruction to necessitate either its excision or tracheotomy. No respiratory embarrassment occurred and recovery was rapid and uneventful.

Professor Killian has stated that several cases of foreign body in the air passages have been mistaken for diphtheria and *vice versa*.[1]

CASE 2.—A few hours after the occurrence of the above I read the account of a similar case recorded by Dr. Dan McKenzie and published in THE LANCET.[2] A baby, aged 2, inhaled a rabbit bone into its larynx and was treated at a hospital for three months for bronchitis. Eventually the bone was successfully removed by suspension laryngoscopy.

CASE 3.—Before the invention of the present bronchoscope a girl, aged 3, was admitted to hospital with a temperature of 103° F. The parents said that one month previously she had contracted broncho-pneumonia, but they denied all possibility of the inhalation of a foreign body. The physical signs were limited to the base of the right lung and were definitely unilateral. After exploration of the chest with a needle empyema was diagnosed, and resection of a rib exposed a normal pleura. Ten days later the child died suddenly in less than half an hour with dyspnœa following a fit of coughing. A necropsy revealed a bean in the left bronchus with diffuse bronchiectasis of the right lung. The bean apparently had been coughed from the right into the left bronchus.

A case of sudden death from this cause has since been recorded, in which a foreign body was being extracted from the right bronchus when it slipped out of the grasp of the forceps into the left bronchus and killed the patient within a few minutes.

CASE 4.—A newsvendor inhaled a half-sovereign, and whenever he was "hard up" he would go to a hospital to see if it could be recovered. Nearly two years after its loss, and after visits to many hospitals, the coin was recovered from the right bronchus by Mr. Somerville Hastings at the Middlesex Hospital, but death occurred from pulmonary tuberculosis ten days later.

Many other similar cases could be cited, but it would waste too much valuable space to repeat them here. Enough has been said to emphasise the fact that mistakes are frequently made in these cases, and can easily be made. In children particularly foreign bodies appear to be tolerated in the larynx, trachea, or bronchi without causing suspicion. It frequently happens that a patient comes to the casualty with the history of having inhaled or swallowed something. There are no symptoms, and a superficial examination is negative; the patient is told to eat some bread or porridge and sent home. A foreign body in the larynx may produce laryngeal obstruction, and the condition resembles diphtheria or the various inflammations or paralyses of the larynx. The symptoms—hoarseness, aphonia, stridor, dyspnœa, &c.—are common to many such affections. If an object is impacted in a bronchus an obscure chest condition arises in which the physical signs are limited to one lung—usually the right. A provisional diagnosis of empyema may be made, or even bronchitis and broncho-pneumonia, although these two latter generally have bilateral physical signs. In adults there may be an offensive purulent expectoration, with loss of weight, fever, &c., symptoms which resemble pulmonary tuberculosis. Bronchiectasis resulting from the inhalation of a foreign body has been known to simulate phthisis. Where unexplained symptoms and signs occur which may be due to an unsuspected foreign body, especially if they are unilateral and in a child, a careful history should be obtained and due importance attached to an account of the inhalation of something. Skiagrams should be taken and the bronchoscope employed.

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[1] International Congress, 1913, Section XV.
[2] THE LANCET, July 4th, 1914, p. 28.

The previous cases concern the respiratory tract. Similar instances occurring in the œsophagus may be mentioned and are as follows.

CASE 5.—A boy, aged 9 months, swallowed a farthing. One month later he appeared to be unwell, wheezy, and frequently vomited. A skiagram showed the farthing in the position of the left bronchus. By œsophagoscopy the farthing was discovered in the œsophagus at the bifurcation of the trachea, and was easily extracted.

CASE 6.—A child, aged 5, swallowed a halfpenny. One week later an X ray photograph showed the coin in the gullet. It was removed by a skilled œsophagoscopist, but ulceration into the left bronchus had occurred, and the patient died from broncho-pneumonia on the next day.

CASE 7.—A halfpenny present for five years in the œsophagus ulcerated into the aorta causing sudden death. A similar case of a pin is recorded.

CASE 8.—Sir StClair Thomson reports the successful extraction of a vulcanite toothplate from the œsophagus after $2\frac{1}{4}$ years. The patient had been X rayed and examined by bougies and the œsophagoscope at two other hospitals.[3]

I have removed by the œsophagoscope coins from the gullet which had been swallowed 8 days, 10 days, 17 days, 1 month, &c., previously—much too long a delay for safety. These are only a few examples of the cases which I have seen or heard of.

The serious results produced by the delay in extraction of foreign bodies can be avoided by more accurate diagnosis followed by adequate treatment, and in both respects we are now fully equipped. The history of the accident and the description of the lost article are always obtained, and I find that the patient frequently can accurately localise the foreign body. If it is out of sight by the ordinary examination of the pharynx and with the laryngoscope, an X ray photograph should be taken and the stools watched. Skiagrams, however, even of metal bodies, have been known to fail. If it is still unaccounted for, the gullet and air passages should be searched carefully by suspension laryngoscopy, œsophagoscopy, and bronchoscopy. If the presence of a foreign body in the air or food passages is in any way possible, there should be no delay in searching for it, and this opinion is supported by the record of the above cases.

The bougies and probang more often than not fail to detect a foreign body. They also, unfortunately, push it further down, making it more inaccessible, and may even push it through the wall of the œsophagus. Bougies have also burst through the œsophagus into the pleura, particularly if ulceration has occurred. The coin catcher has been known to tear the œsophagus, and in one case the instrument broke in the gullet, leaving the fragment behind, which caused the death of the patient. It is much simpler and safer to pass bougies or probes by the direct vision of the œsophagoscope.

Œsophagotomy for a foreign body should be extinct, as no difficulty has been experienced in extracting several toothplates, two of them having four teeth, by the same path as they entered, and with the aid of the œsophagoscope. In the case of a firmly impacted tooth-plate there are scissor forceps for use with the œsophagoscope to cut up the plates to facilitate extraction. When pins are swallowed they are very commonly passed per rectum, but should always be found, for I have known them to have become impacted in the bronchus or œsophagus. More frequently pins and fish-bones stick in the lower lobe of the tonsil, in the base of the tongue or pyriform fossa.

Owing to the ingenuity of Professor Killian, of Berlin, and others, a foreign body can be extracted from almost any position in the air or food passages with negligible danger to the patient and consequent saving of life. The mortality of patients with foreign bodies in the air passages in the laryngoscopic period was as high as 30 per cent. (Killian). Since the introduction of the bronchoscope only 3 out of 182 died (Chevalier Jackson).

If the object is in the pharynx or larynx—i.e., above the upper edge of the cricoid—suspension laryngoscopy is by far the easiest way of finding and removing it. One cannot be too enthusiastic in stating the merits of Killian's suspension laryngoscopy, more particularly for children, in which a comprehensive and clear view of the pharynx and larynx is easily obtained and is decidedly better than that of the smaller tubes of the bronchoscope. To quote the words of a well-known laryngologist: "Suspension laryngoscopy makes laryngeal operations easy for the man in the street to perform." If it is below the cricoid, the bronchoscope or œsophagoscope can be passed with the patient in the suspension position.

In the air passages particular attention should be paid to the smaller bronchioles of the right lung. For bronchoscopy and œsophagoscopy the largest tube possible should be used, and its progress carefully watched so that it is not allowed to slip past the foreign body, which in the case of the gullet may be hidden under cover of the lower edge of the cricoid cartilage, especially a flat object like a coin. In the œsophagus, at the bifurcation of the trachea, is another favourite spot for impaction, the gullet being slightly constricted by the aorta and left bronchus, a dangerous position for ulceration. The cardiac end of the œsophagus is also a probable site.

The technique of suspension laryngoscopy, bronchoscopy, and œsophagoscopy is not difficult. The instruments are well lighted specula which require gentle manipulation, and any surgeon could use them with success. Cases of impaction of foreign bodies are so common and the removal by the bronchoscope or œsophagoscope so efficient, that the method should not be confined to the specialist.

To summarise briefly. The cases recorded above show that it is easy to make an inaccurate diagnosis and that the resulting delay may have serious consequences. The frequency with which these mistakes are made suggest that a very thorough examination should be carried out whenever articles are alleged to have been inhaled or swallowed, and that when the object is not found the bronchoscope and œsophagoscope should be employed. The more modern methods described above, which are not difficult to use, are far superior to the obsolete bougie, probang, or coin-catcher.

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[3] THE LANCET, Jan. 4th, 1913, p. 16.

In conclusion, there is no class of case in medicine or surgery which gives greater satisfaction to those concerned than the successful removal of a foreign body which imperils the life of a patient or causes a long period of ill-health, resulting too often in death.

A CASE OF CONGENITAL ATRESIA OF THE BILE-DUCTS.*

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ALTHOUGH cases of this disease are not of extreme rarity, few records have been published on the pathological—more especially the microscopical—alterations that occur. In view of the fact that such details are much needed[1] I have called attention to this case.

The patient, a female infant, first came under observation in the out-patient department of the Victoria Hospital for Children in April, 1913, when aged 4 months. She had been jaundiced for the past three months; the motions were pale, and the urine stained her napkins. A rash was present, especially about the buttocks. Snuffles were observed. The liver was then much enlarged, but the spleen could not be felt. In July, 1913, she was admitted as an in-patient. The history obtained showed that at birth her colour was normal, but when three weeks old she became yellow. The motions were clay coloured from that time onward. The degree of jaundice varied from time to time, but was much more marked during the few weeks previous. After separation of the cord the umbilicus healed well. Feeding was artificial, with cows' milk and barley water. She vomited frequently from birth, and there had been profuse sweating for the past two weeks. The mother had had five other children who were all well, and one miscarriage six years ago. The condition on admission was fairly good, and she was fairly well developed. Jaundice was marked, the skin being deep yellow and the sclerotics very yellow. No abnormality was found in the heart or lungs. The liver was enlarged and reached two finger-breadths below the costal margin. A hernia had occurred through the umbilicus. The temperature was normal. No alteration was noticed during the next 14 days, and she was then discharged.

In October a little free fluid was found in the peritoneal cavity, and afterwards it gradually increased in amount until December, when she was again admitted to the ward. The jaundice was now very intense. The enormously distended abdomen caused considerable respiratory distress. Numerous distended veins were apparent in its anterior wall, and in them the blood flowed upwards. The peritoneal cavity contained much free fluid and the liver was felt to be enlarged, extending three fingers-breadth below the costal margin. The spleen, also much enlarged, extended the same distance on the other side. The ribs showed marked beading. Very numerous râles and crepitations were heard over the right side of the chest in front, but none elsewhere. The heart gave no abnormal physical signs. The anterior fontanelle was very large—enough to have admitted five fingers. No œdema was anywhere found. On the following day the infant was much worse, and râles were heard all over the chest. The temperature rose from normal to 101·6° F., and on the morning of the third day to 103°, when death occurred.

Post-mortem examination.—A deeply jaundiced infant, extremely emaciated. The abdomen was very distended, with large veins coursing over it. On opening the belly a large quantity of bile-stained fluid escaped. The alimentary canal presented no abnormal appearances. The mesenteric glands were enlarged and dark-coloured. The liver weighed 12 oz. The surface was nodular, the nodules being small. It was firm in consistence and tough on section. Its colour was a very deep green. A cut surface presented a mottled appearance. The strands of fibrous tissue stood out plainly, somewhat paler than the rest of the substance. They cut the organ up into small islets, about 1 mm. in diameter. These were circular, the circumference being a deep green colour, while the centre was paler and yellowish. The fibrous tissue was much greater in amount at the hilum where the strands were of great thickness, gradually becoming narrower as the periphery of the organ was reached. The hepatic ducts were completely obliterated, and at a very short distance from their junction faded away into the connective tissue of the gastro-hepatic omentum, so that they could not be traced to the duodenum; not even a fibrous cord remaining to represent them. The gall-bladder was merely a fibrous cord deeply buried in the liver substance. Like the common bile-duct, the cystic duct was lost in the gastro-hepatic omentum, and could not be traced to its junction with the common bile-duct. The vessels, hepatic artery and portal vein, were normal. The spleen weighed 3 oz. It was firm in consistence, but presented no abnormality on section. The splenic vessels were patent and healthy. The pancreas, kidneys, and adrenals were all normal. There was very marked œdema of the retroperitoneal and perirenal tissues. Both lungs were deeply congested and œdematous. The heart was normal.

Microscopic examination.—The organ is extremely and markedly fibrosed. The normal lobulation is entirely lost and the hepatic cells show all stages of degeneration—all that is left of them in some places being a granular débris. Those which retain some vitality are generally crowded with small brownish granules of bile pigment. There is a slight degree of fatty degeneration. Some of the cells contain minute fatty droplets (demonstrated by Sharlach R), but in no case is any great distension of the cell brought about in this way. The fatty degeneration is confined to the hepatic cells and cannot be found in the cells of the pseudo-bile canaliculi. The nuclei are round and large as a rule, though some have become irregular in shape. They do not take up much stain and are poor in chromatin. There is no evidence of proliferation of the liver cells. Towards the centre of the organ the cells are somewhat healthier in appearance and the deposit of pigment less.

Strands of fibrous tissue are present throughout the organ, forming a fine network, in the meshes of which are small isolated groups of liver cells. The individual cells are also surrounded and separated from each other by fine fibrils of connective tissue, so that a mixed condition is present, a perilobular and a pericellular cirrhosis coexisting. Towards the periphery some of the fibrous-tissue cells are younger in appearance and show some evidence of active proliferation, but towards the centre of the organ they are older and show no such signs. The process has, however reached an almost stationary stage. There is no active inflammatory change nor any leucocytic infiltration. In the fibrous tissue very numerous mast cells can be demonstrated by Pappenheim's methyl green pyronin stain or by polychrome methylene blue. They vary much in shape, contain somewhat deeply staining nuclei which are eccentric in position, and show in their cytoplasm closely packed, coarse, orange-red granules. Generally they are seen on or very near a vessel-wall. They are never seen among the liver cells proper. They occur in small numbers near the hilum, becoming numerous towards the periphery where in some sections great numbers are seen. No plasma cells have been found. There is very little subcapsular fibrosis. The vessels appear throughout normal. The finer bile-ducts—those at the periphery of the organ—are patent and many are filled with inspissated bile. Pseudo-bile canaliculi are present and are often a feature of the part under examination. As the hilum is approached they increase in number while the bile-ducts disappear, and within a short distance of the hilum none can be found, nor any bile. Often the fibrous tissue can be seen surrounding and cutting off groups or columns of liver cells from the periphery of a lobule, which then present all the appearances of pseudo-bile canaliculi. The wall of the gall-bladder is much thickened and composed of young connective tissue cells. It is very vascular, and contains several large vessels—arteries and veins—the walls of which are normal. The cavity remains, though very small, and is lined by a healthy endothelium of cubical cells. The round ligament presents no abnormality.

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* Shown before the West London Medico-Chirurgical Society on Jan. 16th, 1914.

Upon the etiology of this interesting condition the present case throws no light—syphilis, as usual, appears to play no part, and no hereditary influence is shown. On turning, however, to its pathogeny one or two points may be considered. Dr. Rolleston[2] believes that the fault is with the mother, that from her a toxin is derived which, passing through the placenta and its vessels, reaches the liver, where it causes a cirrhosis. The primary fœtal condition is thus an irritative change in the liver. But some of the blood passes on by the ductus venosus into the general circulation. Later it returns by the hepatic artery to the liver. Here the toxin is excreted in the bile and sets up a descending cholangitis. He also suggests that the toxin may be analogous in its action to toluylenediamine. The action of toluylenediamine has been very fully described by Hunter.[3] He finds that animals under the influence of this drug suffer from a descending cholangitis involving primarily the bile-ducts at their origin. Later the whole of the bile radicles and the smaller ducts are simultaneously affected. Sometimes the process stops here, though in other cases the catarrh may extend to the common bile-duct and even to the duodenum itself. The point I wish chiefly to emphasise is that the inflammation affects first and with the greatest intensity the finest bile capillaries.

From this description I think it fair to conclude that the excretion of any other irritating substance into the bile would produce a cholangitis affecting first and chiefly the smallest bile channels. But in the case under consideration the exact reverse holds—the finest bile capillaries are patent and show less affection than the largest vessels. *Prima facie*, then, an ascending cholangitis would appear the more likely lesion. Is this possible? A gastro-enteric inflammation travelling from the duodenum up along the common bile-duct would be capable of producing all the appearances found here. The inflammation would be most intense the nearer it was to the duodenum, and diminish in intensity in direct proportion to its distance therefrom or to its approach to the periphery of the liver. Furthermore, the resistance of the patient's body may to some extent limit the spread. The post-mortem appearances indicate a stationary or almost stationary condition; and also the fact that life was prolonged for 12 months points to some such protective reaction.

The existence of a toxin is, at the best, purely conjectural; its presence or absence cannot be demonstrated. May it not, then, be supposed to be a constituent of a pathological liquor amnii? It is known that the fœtus in utero ingests quantities of this liquid which might thus reach the duodenum.[4] The origin of such a body in the liquor amnii would appear to be maternal, passing through the placenta as do some of the normal constituents of the liquid.[5] It is difficult to imagine any process by which the fœtus could produce in utero a toxin inimical to itself. The presence of such a pre-natal affection would, moreover, lay the patient more freely open to the post-natal attack of other pathogenic agents.

Cirrhosis is in adult life probably due to a toxin elaborated in the gastro-intestinal tract.[6] At the same time Lissauer[7] finds that cirrhosis of the liver can be produced by ligation of the common bile-duct or its branches without other cause. The changes produced are, in his opinion, identical with those found in human cirrhosis. But he also finds that experimental data prove the change following ligature of the duct to be largely influenced by infective processes. Thus in this case it seems possible that the same agent which by direct extension causes an ascending cholangitis, at the same time, by absorption and circulation in the blood through the liver, initiates a cirrhosis which is aided and increased later by the obliteration of the ducts.

Thomson,[8] in his original paper on this condition, believed that a necessary factor in its pathogeny was a maldevelopment by which the ducts were narrowed; while the imposition of an inflammatory swelling on such a developmental constriction produced complete obstruction. In a later article[9] this view, though not contradicted, was dismissed as having nothing in its favour. Yet later[10] he revives it and states that it must be held to play a part. The cirrhosis he considers secondary to the biliary obstruction. The present case adds no data on either side.

In the clinical course and appearances of this case nothing is remarkable except the duration of life. Hitherto it has been said that no child proved to have this complaint has ever lived 11 months,[11] whereas another month must now be added to that period. The average length of life is 2½ months. Finally, the development of ascites in this condition is rare. I have to thank Dr. J. W. Carr and Dr. A. C. D. Firth for the clinical notes of this case and for permission to use them.

Bibliography.—1. Thomson: Allbutt and Rolleston's System of Medicine, 1908, vol. iv., Part I., p. 104. 2. Rolleston: Diseases of the Liver, &c., p 643. 3. Hunter, Wm.: The Action of Toluylenediamine, Journal of Pathology and Bacteriology, vol. iii., 1896; Allbutt and Rolleston's System of Medicine, 1908, vol. iv., Part I., p. 41 et seq. 4. Eden: A Manual of Midwifery, p. 39. 5. Jellett: A Short Manual of Midwifery. 6. Rolleston: Loc. cit., p. 195. 7. Lissauer, Max: Quoted by Brit. Med. Jour., April 25th, 1914, p. 922 D. 8. Thomson: Edinburgh Medical Journal, vol. xxxvii., Part II., p. 734. 9. Thomson: Allbutt and Rolleston's System of Medicine, 1897, vol. iv., p. 256. 10. Ibid., 1908, vol. iv., Part I. 11. Thomson: Clinical Examination and Treatment of Sick Children, p. 173.

Vaccination in Ireland.—The Registrar-General for Ireland has recently issued a return dealing with the statistics of vaccination of children born in Ireland in 1912. It discloses a grave and growing neglect of vaccination. Of the total number of children born in 1912 it appears that only 66·3 per cent. have been successfully vaccinated; of the remainder, 3·3 per cent. were postponed on account of ill-health, 0·1 per cent. were insusceptible of vaccination, 5·7 per cent. died without being vaccinated, 3·1 per cent. were unaccounted for, and 21·5 per cent. were returned as defaulters. The disquieting factor is that the number of defaulters is increasing in accelerated proportion. In 1905 82 per cent. were vaccinated, as against 66·3 per cent. in 1912. There is no doubt that the falling off in vaccination is due to the active campaign against vaccination, for it is precisely in those districts where the campaign is most active that the falling off is most marked. In Leinster the vaccinations represented only 45·8 per cent. of the births registered. In county Wexford, where the campaign began, there were only 301 children successfully vaccinated, while there were 1700 defaulters, and in the neighbouring county of Wicklow there were 464 successful vaccinations and 587 defaulters. A grave responsibility rests with the Local Government Board for permitting the boards of guardians to connive at the constant breaches of the vaccination laws.

Reviews and Notices of Books.

Aspects of Death in Art and Epigram.

By F. PARKES WEBER, M.A., M.D. Cantab. London: T. Fisher Unwin and Bernard Quaritch. 1914. Pp. 461. Price 10*s.* 6*d.* net.

THIS work is an expansion of a previous work by the same author, entitled "Aspects of Death and their Effects on the Living as Illustrated by Minor Works of Art," a review of which appeared in THE LANCET of Dec. 17th, 1910. The expanded edition contains a far greater number of pictures and of illustrations from Latin and other authors dealing with death.

The original work contained 58 pictures, while the work now before us contains 125. The original introduction has been enlarged from 26 pages to 84 mainly by giving a more detailed description of the engravings, carvings, pictures, and poems mentioned in the original book, and a new section dealing with sepulchral monuments and inscriptions. Three new chapters treat respectively of the attributes and pomp of death, of funerals and the fear of death, and of skulls and animated skeletons in grotesque art. Another addition is a selection of quotations from the various mediæval poems "De Contemptu Mundi," wherein we note that Dr. Weber refers to St. Bernard's (of Clairvaux) "Rhythmus de Contemptu Mundi," beginning "Homo miser cogita, Mors omnes compescit," a fine but little known poem, remarkable for its subtle change of metre in the passage dealing with the world's great ones who have passed away:—

> "Quo Caesar abiit, celsus imperio,
> Vel Dives splendidus, totus in prandio?
> Dic, ubi Tullius, clarus eloquio,
> Vel Aristoteles, summus ingenio?
>
> Tot clari proceres, tot rerum spatia,
> Tot ora præsulum, tot regna fortia,
> Tot mundi principes, tanta potentia,
> In ictu oculi clauduntur omnia."

Death is now presented, not to this nation only, in far other guise than art and epigram, and the last stanza will come home to many hearts with sad insistence.

In primitive Christianity there was nothing horrible in death, as is evident by the numerous inscriptions preserved in the Lateran Museum. The painful aspects of death came in with the Middle Ages, and the sixteenth century perhaps gave death the worst aspect of any time. Not that death, even in the Middle Ages, was always horrible, though inexorable—witness his personification in the old play *Everyman;* but from 1600 to 1800 few except enlightened souls could regard death as a friend in the sense that Schubert illustrates in his wonderful setting of "Der Todt und das Mädchen." We are grateful to Dr. Weber for a most interesting book upon a subject which must always have an interest for humanity.

The Prevention of Dental Caries and Oral Sepsis.

By H. P. PICKERILL, M.D., Ch.B., M.D.S. Second edition. London: Baillière, Tindall, and Cox. 1914. Pp. 374. Price 12*s.* 6*d.* net.

DR. PICKERILL, in the present edition, has included an account of additional experiments made by him and gives an interesting account of observations made on a thyroidectomised rabbit with a view of ascertaining the influence of thyroid insufficiency on caries. The observations are interesting but not conclusive. The author expresses the opinion that tough food tends to narrow the jaws, as the muscles brought into play in the mastication of such food act in this direction. The book shows evidence of the large amount of experimental work carried out by the author, the results of which are mainly negative in character. We think he would do well to give more consideration to the views expressed by other authors in papers published prior to the publication of this work.

Manual of Anatomy, Systematic and Practical, including Embryology.

By A. M. BUCHANAN, M.A., M.D., C.M. Glasg., F.R.F.P.S. Glasg., Professor of Anatomy in Anderson's College, Glasgow, &c. With 631 illustrations, mostly original and in colours. Second impression. University Series. London: Baillière, Tindall, and Cox. 1914. Pp. 1559. Price 21*s.* net.

THIS is a new impression, hardly a new edition, of Buchanan's Anatomy, for no very important alterations have been made pending the issue of a second, thoroughly revised, edition. As we reviewed the first impression, which appeared in two volumes, in THE LANCET of Oct. 13th, 1906 (p. 1000), and June 1st, 1907 (p. 1496), in some detail, it is unnecessary here to do more than state that many of the errata and omissions noted in the first edition have been put right—particularly we may mention that a notice of the auriculo-ventricular bundle of His is now included, as well as one of the islands of Langerhans. The special point about this book is that it claims to be the only English text-book of anatomy retaining the old nomenclature, which is still official, and speaking generally seems to be much preferred by students as being more simple and quite correct enough for all practical purposes. A large number of terms of the Basle nomenclature is given for reference, however, in an appendix. The book will retain the popularity which it has gained.

Sclero-Corneal Trephining in the Operative Treatment of Glaucoma.

By ROBERT HENRY ELLIOT, M.D., B.S. Lond., Sc.D. Edin., F.R.C.S. Eng., &c., Lieutenant-Colonel, I.M.S. Second edition. London: George Pulman and Sons, Limited; The Ophthalmoscope Press. 1914. Pp. 187.

THE second edition of this book has been called for within a year. We found reason to review the first edition favourably. We then said: "It is too early yet to cry 'Eureka,' but in our opinion trephining, as advocated and carried out by Colonel Elliot, offers the best hope of success in combating chronic glaucoma." The experience of another year has not led us to modify the opinion we then expressed.

The enthusiasm which pervades the writings of Colonel Elliot and many other ophthalmic surgeons is both a good and a bad sign, for it tends to obscure the critical faculties. On the whole, the results of the operation have been favourable, but for our own part we are not prepared to admit that it is by any means the last word on the question. It has occasionally been the experience of surgeons that the operation has failed to stop the progress of the chronic glaucoma, though sometimes a second operation of the same nature has proved successful. A number of cases of late infection after trephining and several cases of detachment of the choroid, some of which proved disastrous, have been recorded. It is still too early to know the ultimate fate of the method, but we continue to hold that it is the most serviceable yet devised for this intractable disease.

The second edition is larger than the first by 70 pages. We do not notice any radical change in technique, and the new matter deals chiefly with the results, opinions, and suggestions of ophthalmologists from all parts of the world. We have no hesitation in saying that the book should be carefully studied by every ophthalmic surgeon.

Handbuch der Vergleichenden Physiologie.

Herausgegeben von HANS WINTERSTEIN. Lieferungen 42 and 43, pp. 1447–1760. Band III. *Physiologie des Energiewechsels und des Formwechsels.* Mit 40 Abbildungen im Text. Jena: Gustav Fischer. 1914. Price 5 marks.

IN No. 42 Professor R. F. Fuchs continues his admirable disquisition on the colour changes and the chromatic cutaneous functions of animals. An exhaustive account is given as to changes in colour which are produced through the eyes. It requires nearly 90 pages to describe what is known as to the colour changes in amphibia alone. The remainder of the text (45 pages) deals in the same exhaustive and lucid manner with the reptiles. The subject is continued in No. 43, in which Professor Fuchs completes his most interesting, elaborate, and painstaking account. This article should prove of great interest to all zoologists as well as physiologists. It is the most complete in any language. About one-half of the text is devoted to the colour and markings of insects by Professor W. Biedermann, of Jena, than whom no one is more capable of dealing with such a fascinating subject. The exposition is at once attractive and masterly.

MISCELLANEOUS VOLUMES.

THE child builds up the State, and when the birth-rate is falling in all civilised countries his quality no less than his quantity becomes of particular importance in both sexes. The child remains a child until he reaches an age when he is more or less able to act independently of the guidance of grown-up people, and each group of ages—the infant, the child on the border of school age, and the child after leaving school—presents its own difficulties of treatment. These groups again subdivide themselves according as we have to deal with the orphan, the waif and stray, and the mentally defective, so that the whole question of the best management of childhood is very complicated. In the class for which it is necessary to provide homes, such as the destitute and the mentally defective, among the questions to be considered are the merits or demerits of existing institutions, the advantages or otherwise of the boarding-out systems, recreation, inspection, and so forth, while the inadequacy of provision for special classes, such as epileptics and cripples, must not be forgotten. Again, there is the question of feeding and proper dietary. All these things are ably dealt with in a valuable report, *Voluntary Homes and Orphanages* (published at Salisbury House, London Wall, E.C. Price 6*d.*), by a special committee of the Social Welfare Association appointed to inquire into the welfare of poor children, which provides much information of a kind that probably cannot readily be procured elsewhere. It deals with 82 homes within the radius of Greater London, and the appendices include a classified list of homes and a useful diet table drawn up by Dr. Robert Hutchison.——With regard to the question of dealing with children after they have left the elementary school, Germany appears to be ahead of this country in recognising the need for fitting such children for work useful to the community. In this connexion *The Problem of the Continuation School and its Successful Solution in Germany: A Consecutive Policy*, by R. H. BEST and C. K. OGDEN, B.A. With an Introduction by Dr. GEORG KERSCHENSTEINER (London: P. S. King and Son. Price 1*s.*), may be studied with interest and profit. In England large sums of money are annually spent, and some of it badly spent, on elementary education, and many boys after being employed in "blind-alley" occupations go to swell the army of casual labourers and unemployed. The last-mentioned book shows how this wasteful state of things may to a considerable extent be avoided. For example, it is stated that in Munich, a city of nearly 600,000 inhabitants, all boys, with the exception of 8 per cent., when leaving the elementary schools at the age of 14 go straight to definitely taught trades and attend a trade continuation school for four years. The illustrations in the book point to the thoroughness with which this form of education is carried out.

A little book whose purpose may be summed up in its closing words—"health is a duty. A man's first duty"—is *Pride of Body* (London: The St. Catherine Press. Pp. 63. Price 1*s.* net), by HUGH DE SÉLINCOURT. It is a brightly written argument for physical training gladly undertaken as a personal, family, and racial duty, and concludes with seven very simple exercises reduced to their lowest terms from standard systems, especially Müller's. This little book may attract many to the practice of physical and moral discipline who are dismayed at the complexity of more elaborate systems.——*Why Early Death?* (same publishers. Pp. 54. Price 6*d.* net) by M. C. SYKES, M.D., F.R.C.S. Edin., consists of 35 sets of moral physiological precepts for the most part sound enough but of no special originality, enunciating the principles of hygienic living. The author discusses the question when one is to retire from active professional or commercial work. His answer amounts to this: never, unless you have ample interests to give you continued occupation and ample means to pursue them.——There are so many books nowadays dealing with dietetics and food preparation for popular use, some of them written in support of particular dietetic theories, vegetarianism, fruitarianism, and what not, that they must be bewildering to the public. The new edition of the *Apsley Cookery Book* (London: J. and A. Churchill. 1914. Pp. 268. Price 3*s.* 6*d.* net), by Mrs. JOHN J. WEBSTER and Mrs. H. LLEWELLYN, is stated to contain 503 recipes for the "uric acid-free diet." Without entering into any discussion of the uric acid-free theory of dietetics, we may state that a perusal of the recipes themselves holds rather fascinating possibilities for the housewife, and one need not be a "martyr to uric acid" thoroughly to enjoy many of the dishes here presented. They certainly contain sufficiently varied and pleasant things to satisfy everyone. Moreover, the recipes for the most part are consonant with a very limited financial budget. The hints on cooking are obviously the production of one practised in the art.

JOURNALS AND MAGAZINES.

Quarterly Journal of Medicine. Edited by WILLIAM OSLER, J. ROSE BRADFORD, A. E. GARROD, R. HUTCHISON, H. D. ROLLESTON, and W. HALE WHITE. Vol. VII., No. 28. July, 1914. Oxford: At the Clarendon Press. London, Edinburgh, New York, Toronto, and Melbourne: Humphrey Milford. Subscription price 25*s.* per annum; single numbers 8*s.* 6*d.* net each.—The contents of this number are: Aggressins in Appendicitis and Some Other Varieties of Peritonitis, by A. D. Gardner. The question of aggressive action has been studied in a number of peritoneal exudates. The property of aggressiveness is regarded as the direct consequence of a profuse multiplication of bacteria. Dr. Gardner concludes that in the treatment of some varieties of peritonitis closer attention should be paid to the question of bacterial multiplication, and he suggests that a discriminating use of bactericidal chemicals, such as ether and colloidal silver, might be of great value in the surgical treatment of peritonitis.—The Leukæmias: An Analysis of Fifty-nine Consecutive Cases, by P. N. Panton, H. L. Tidy, and G. H. Pearson. Some interesting observations are given upon 59 cases of leukæmia, 16 of which are classed as acute myeloid, 29 as chronic myeloid, 8 as acute lymphoid, and 6 as chronic lymphoid leukæmia. The authors find that the clinical picture of leukæmia varies with the acuteness or chronicity of the disease, and not with the lymphoid or myeloid origin of the cells. They find that the effect of treatment on the acute cases has been negligible, in the chronic lymphoid cases very slight changes have been observed, while in the chronic myeloid cases some have changed little and others to a remarkable extent. Some interesting tables and a coloured plate accompany this article.—The Fragility of the Red Blood Corpuscles in Physiological and Pathological States, by Alfred Douglas Bigland. A method is described for determining the fragility of red blood corpuscles towards the hæmolysing agent saponin, and the state of the corpuscles in various abnormal conditions is studied. The resistance of the washed red corpuscles is diminished in jaundice, increased in all the anæmias, except pernicious anæmia, in which it is normal or slightly diminished. In exophthalmic goitre and paroxysmal hæmoglobinuria the corpuscular fragility is normal, in polycythæmia it is increased.—Study of a Case of Very Prolonged Cheyne-Stokes Breathing, by W. Hale White, J. H. Ryffel, E. P. Poulton, W. Johnson, and R. A. Chisolm. An interesting case is recorded in which Cheyne-Stokes breathing lasted for six months and probably for much longer. The case was carefully studied, and certain observations showed that the blood was of abnormal acidity and that this abnormal or increased acidity was not due to lactic acid. Histological examination of the respiratory centre showed certain changes which were regarded as evidence of exhaustion of the nerve cells in it, but the authors are of opinion that at present it is impossible to state if these changes, which are similar to those found by other observers in such cases, are the result or the cause of the Cheyne-Stokes breathing.—The Importance of Functional Activity in the Ætiology of Nervous Diseases, by W. Johnson. An interesting study of Edinger's theory that symptoms in nervous diseases are in a large part exhaustion phenomena and closely associated with the nature of the patient's activities is given. Dr. Johnson concludes that there is a close association between a patient's symptoms and the nature of his activities, and that various poisons, although widely different in nature, tend to produce clinical conditions which nearly approach each other.—Blood Pressure Estimations in Disease by the Oscillatory and Auditory Methods, by G. Spencer Melvin and J. R. Murray. Considerable discordance in results was found on comparing the records of blood pressure obtained by the auditory method, the tactile method, and the graphic method of the Erlanger sphygmomanometer. The writers prefer the auditory readings and regard them as the most reliable. —The Formation of β-Iminazolylethylamine in the Ileum of certain Constipated Subjects, with a Note on the Urine in Constipation, by N. Mutch.—Family Cerebral Degeneration with Macular Change (so-called Juvenile Form of Family Amaurotic Idiocy), by Frederick E. Batten. Some cases are recorded demonstrating that there is a form of familial cerebral degeneration which occurs at a later age than "family amaurotic idiocy," and has no race proclivity. The typical features are loss of intellectual faculties, loss of vision, and loss of motor power. The paper is illustrated by some admirable plates.—Critical Review: The Diagnosis of Pancreatic Disease, by Arthur F. S. Sladden. A valuable summary and criticism of the various tests proposed for the discovery of pancreatic disease are given.

British Journal of Surgery. Vol. II., No. 5. July, 1914. With 105 figures (6 in colours) and a frontispiece. Pp. 188. Issued quarterly, 25*s*. per annum. Bristol: John Wright and Sons, Limited.—In the present issue is an editorial article on the need for coöperation in surgical enterprise, which foreshadows the formation of an association of British surgeons, and this is followed by a short notice of Sir James Paget, with a reproduction of Millais's painting. A long and exhaustive article by R. C. Elmslie deals, under the name of fibro-cystic disease, with the subject of benign cysts of bones. Many illustrations of this disease from the museums of the various London hospitals are given. Finkelstein writes on the surgery of the spleen, based upon a personal experience of 66 cases of splenectomy. Loughnane has collected a number of cases of renal sarcoma in children, in which the after-history has been followed up; of these, only 3 out of 35 presented long periods of survival after nephrectomy. A new operative treatment for certain cases of the outward dislocation of the patella is described by Whitelocke, who uses the gracilis tendon transplanted into the ligamentum patellæ to counteract the outward displacement. Gunn and Whitelocke make some interesting observations on the movements of the vermiform appendix and the way in which these are affected by various drugs.[1] Gwynne Williams describes the localisation and treatment of acute osteomyelitis in adults. A practical article by Hogarth Pringle on the treatment of open fractures, based upon 230 observations, shows what good results are obtained by immediate operative treatment in these cases. Childe contributes a paper on a modified form of panhysterectomy in which the division of the tissues is made by the actual cautery, and gives a list of 18 cases treated by this method. Other articles of interest are: A Visit to the Surgical Clinics of Sir John Bland-Sutton and W. J. Mayo; A Critical Review of Pyelography, by Thomson Walker; A Review of Contemporary French Surgery, by Professor Tuffier; and an account of some instructive mistakes and rare cases.

Knowledge.—In the August number Mr. Israel Cohen continues his articles on the Physical Condition of the Jewish Race. He points out that as the Jews practise vaccination regularly they suffer less from small-pox than other people. They are less liable to pneumonia but, being mostly town folk with indoor occupations, are very liable to bronchitis and asthma, while heart disease claims many victims. The position of the Jewish child in regard to disease is strikingly favourable, great devotion and care being exercised by the mother. On the other hand, the frequency of mental diseases among Jews is from two to five times higher than among Gentiles. Among other articles in this issue is one on wireless telegraphy in aeronautics, which has a particular interest at the present time, as the illustrations accompanying it include a map showing the chain of wireless telegraph stations round Germany, to determine the position of air-ships by night or during fog.

# Reports and Analytical Records
FROM
THE LANCET LABORATORY.

HEROGEN.

(THE BRITISH DRUG HOUSES, LIMITED, 20 TO 30, GRAHAM-STREET, CITY-ROAD, LONDON, N.)

ACCORDING to our examination herogen is a malted food reinforced with lecithin. As much as 91 per cent. of the preparation, which is a dry powder of the colour of pea flour, is soluble in cold water. This is not surprising since the bulk of the food consists of malt sugar. Further results of analysis were as follows:—Moisture, 0·50 per cent.; mineral matter, 7·50 per cent. (containing 3·20 P_2O_5); proteins, 10·14 per cent.; fat, 3·05 per cent. On extraction with ether a yellowish oil was obtained which contained lecithin. The amount of lecithin in this oil was estimated to be 0·735 per cent. in the food, the phosphoric acid determination giving the figure 0·0735. The interesting contents of this food are the important amount of proteins which are largely soluble, a rich proportion of phosphates, and a definite amount of lecithin. The food is therefore of value chiefly in those cases in which it is desirable to augment a phosphorus and protein intake. The reparative power of lecithin is well-known, particularly in nervous diseases.

(1) "TABLOID" XAXA COMPOUND; (2) "TABLOID" COLCHICINE AND NUX VOMICA COMPOUND; (3) "SOLOIDS" SABOURAUD'S MEDIUM AND MICROSCOPIC STAIN TOLUIDINE BLUE.

(MESSRS. BURROUGHS WELLCOME AND CO., SNOW HILL BUILDINGS, LONDON, E.C.)

(1) The tabloid Xaxa compound presents a formula of admitted value. It contains acetyl salicylic acid combined with phenacetin and caffeine. This combination of antirheumatic, antipyretic, and analgesic agents will be appreciated. (2) Another useful

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[1] THE LANCET, August 8th, 1914, p. 403.

formula is the tabloid colchicine and nux vomica compound, which contains, in addition to colchicine and the extract nux vomica, hyoscyamine and gentian. The combination is intended for the treatment of gout, the presence of nux vomica being regarded as counteracting any depressing effect of the colchicine. (3) "Soloid" Sabouraud's medium provides a very convenient method of preparing a culture medium. It takes up little space, and from it a clear firm medium is easily obtained. The organisms of favus and ringworm and the "bottle bacillus" are said to cultivate well in this medium. The soloid containing toluidine blue represents a recent addition to histological stains in this form. It provides a positively diagnostic stain for the diphtheria bacillus, but can be used also as a general agent in histology.

EURESOL HAIR TONIC.

(Messrs. Sangers, 258, Euston-road, London, N.W.)

We have already reported upon euresol, the active principle of which is the mono-acetate of resorcin. This substance appears to act as restrictor to the blood-vessels and as a stimulant to the epidermis. It possesses the advantage that, unlike resorcin, it does not colour the hair. Its application in seborrhœa and alopecia is interesting, and favourable results are recorded even with a short trial. Euresol has now been made the basis of a hair tonic. Apart from its stimulating action in promoting the growth of hair this salt of resorcin is an antiseptic of decided power.

WATERPROOF SURGEON'S APRON.

(Messrs. Arnold and Sons, Giltspur-street, London, E.C.)

We have examined this material and have submitted it to certain tests, the results of which confirm its claims. We have submitted it to the action of a number of antiseptic fluids such as are used in surgical practice. The majority of the antiseptics tried appeared to have no action at all. Iodine produced a slight staining, and corrosive sublimate a grey colour. The material is certainly waterproof, while it is extremely pliable and soft to the touch. It appears to consist of a fabric with a rubberproof dressing on its serviceable side. Two samples submitted to us consisted of a thin delicate material and another of a stouter description. Washing with ordinary soap readily cleanses the material without injuring it or altering its desirable qualities. It seems to us to be an excellent material for surgeons' aprons, bed sheets, and so forth, in which a waterproof fabric is desirable.

BEEHIVE BRANDY.

(Messrs. Macminn, Richardson, and Co., St. Dunstan's Buildings, St. Dunstan's-hill, London, E.C.)

This is a product of the Associated Vineyard Cultivators Company, and is said to have its origin in the genuine Cognac district. It has the characteristics of a fine delicate Cognac brandy, and the results of analysis in regard to secondary products show that it has the same composition. The results were as follows: alcohol by volume, 47·13 per cent.; extractives, 1·24 per cent.; mineral matter, 0·01 per cent.; volatile acidity reckoned as acetic acid, 0·03 per cent. The secondary products given in parts per 100,000 of alcohol present were as follows: aldehydes, 29; furfural, 1; higher alcohols, 108; ethers, 103. This brandy has a delicate characteristic flavour.

IODOSTARIN.

(The Hoffmann-La Roche Chemical Works, Limited, 7 and 8, Idol-lane, London, E.C.)

We have examined this compound in regard to its contents of iodine, and have found that the claim that it contains 47·5 per cent. of iodine in an active and available form is true. It occurs in the form of a tablet of a white colour. It is an organic combination of iodine, the element being associated with a fatty acid group of the higher series. In spite of the large quantity of iodine which it contains it is stated that the administration of this compound, even in large doses, does not cause iodism. Its indications are the same as for the ordinary iodides.

ROSKROW NATURAL WATER (RADIO-ACTIVE).

(W. Martindale, 10, New Cavendish-street, London, W.)

The essential property of the water is its radioactivity, and it is stated that its strength is 26 times as radio-active as the most powerful natural water so far examined in this country. Further, it is practically free from mineral matters. We found only 15·2 parts per 100,000, and these consisted practically of half sodium chloride and half calcium salts, including the sulphate and the carbonate. It is not a mere emanation water (niton), for it is stated that examination shows actual radium to the extent of 3·6 milligrammes per 10^6 litres. The emanation content in equilibrium with this would be on calculation 90 Mache units per 10 litres. Its use is suggested for promoting healthy metabolism, and sufferers from gouty affections are reported to derive benefit from it. In this connexion the non-mineralised condition of the water is probably of importance.

BRITISH MEDICAL ASSOCIATION.

EIGHTY-SECOND ANNUAL MEETING AT ABERDEEN.

THE SECTIONS.

GYNÆCOLOGY AND OBSTETRICS.

Wednesday, July 29th.

President, Dr. F. W. Nicol Haultain (Edinburgh).

Discussion on the Treatment of Fibromyomata.

The President, in welcoming the members of the section, said that it was not his intention to deliver any introductory address. The subject which had been selected for discussion was of such importance that it would occupy fully the whole time allotted to it, and therefore he would call upon Dr. Archibald Donald to introduce the discussion forthwith.

Dr. Archibald Donald (Manchester) said that the subject selected for discussion had always been of very great importance, and at the present time it was of more than usual interest because of the new views that had been brought forward, more particularly with regard to radiotherapy. In the time at his disposal it was quite impossible to deal with the matter in all its bearings, and he intended, therefore, to limit his remarks to certain points only. The treatment of uterine fibromyomata might be classified under the following headings: (1) Expectant; (2) palliative; (3) curettage; (4) operative; and (5) radiotherapy. As regards expectant treatment, it should be given up in all cases where a neoplasm was producing symptoms. It was also a mistake to think that relief from symptoms was always produced by the climacteric. In many cases this was not so, and various degenerations and other complications occurred, notably malignant changes. Even if shrinkage did take place, a fibroid occasionally became incarcerated from this very cause. Concerning palliative methods, he had nothing to say beyond the fact that he had no faith in drugs in the treatment of fibromyomata. Curetting could not be recommended as a routine method, although one was sometimes tempted to employ this measure to check severe hæmorrhage at the time of the menopause and possibly avoid a more radical operation in an unfit subject. Operative treatment was to be preferred to-day before all other methods in the cure of uterine fibroids, and the speaker advocated the abdominal route in preference to the vaginal path. In fact, the latter should be abandoned except in exceptional cases such as a polypoid, submucous or sloughing tumour. The removal of large tumours per vaginam by "morcellement" was not good surgery, and even in the case of small tumours the abdominal route was to be preferred. Turning to the abdominal operations for fibroids, Dr. Donald advocated myomectomy whenever possible, and particularly during the childbearing age. Although the neoplasm was large it was often good practice to commence by enucleating the same, even if a hysterectomy was required later, since the subsequent operation was rendered much easier by this means. As regards the question of subtotal versus total hysterectomy in those cases where myomectomy was impossible, the matter must be left very much in the hands of the individual operator. Personally the speaker preferred the subtotal operation. Double oöphorectomy without removal of the uterus or neoplasm was useless and should not be performed. The risks of the operation were as great as hysterectomy or myomectomy, and the method was not curative. As regards mortality after hysterectomy for fibroids, the speaker submitted the following figures from his case-books :—

	Cases.	Deaths.
At the Royal Infirmary, Manchester ...	101	3
At St. Mary's Hospital	108	5
At nursing homes (private)	100	1
Total...	309	9 (2·5%)

Of the 9 deaths 6 only could be really attributed to the operation, and included such causes as embolism (1 case), secondary hæmorrhage (1 case), peritonitis, septic (2 cases), and intestinal obstruction. Private patients appeared to have less mortality (1 per cent.) than hospital cases (2·3 per cent.), possibly because the general condition was defective in the latter from deficient feeding, housing conditions, &c. In discussing points of technique Dr. Donald advocated the "clamp" method and removal of the uterus before the application of any ligatures. He also deprecated the use of a continuous suture, since if one knot slipped the whole ligature became loose. Concerning the question of the removal of one or both ovaries, his own practice was to remove both, since the organs not infrequently became cystic or adherent if left. Furthermore, he was quite convinced that menopausal symptoms were not so severe after double oöphorectomy as had been commonly supposed. Of a long series of cases carefully investigated only 3 per cent. complained of acute symptoms. He firmly believed that the type of patient had much more to do with the question of a severe artificial menopause than the operation itself. With regard to the dangers after operation, the greatest risk to-day was undoubtedly that of thrombosis and embolism in very anæmic subjects. Sepsis was probably at the bottom of this unfortunate accident, and the important points in obviating the same could be grouped under two headings: (*a*) the most strict observance of every aseptic precaution known to modern science; and (*b*) the development of "team" work in operating. With reference to the employment of X rays in the treatment of uterine fibromyomata, Dr. Donald expressed himself as holding very strong views. He objected on many grounds to the routine use of the rays in these cases. In the first place, it was frequently extremely difficult and sometimes impossible to diagnose correctly the nature of a pelvic swelling. This was particularly the case with pelvic inflammatory masses, tense or solid ovarian tumours, sarcomata or adenomyomata of the uterus, carcinoma or sarcoma complicating a uterine fibromyoma, or a fibroid undergoing degeneration. Out of a series of 201 cases of uterine fibroids, 44, or nearly a quarter, were complicated by other lesions, and this appeared to be a very strong argument against the employment of radiotherapy as a routine method. Furthermore, sufficient time had not yet elapsed to show whether trouble, particularly degenerations of the growths, would occur later in those cases treated by X rays. Operation, should it become necessary subsequently, was likely to be more difficult and hazardous if any criterion was to be gathered from the experience of surgeons in the case of the thyroid. The mortality to-day after radical operations for fibromyomata was so small, and also the patient was relieved of her trouble once and for all, that the advantages which were said to accrue from radiotherapy appeared to be a very doubtful quantity. The only field in which the rays might have a use was to check hæmorrhage in cases of chronic metritis.

Professor GAUSS (Freiburg), in a paper communicated by Dr. A. MITCHELL (Aberdeen), honorary secretary to the section, said that it was now the custom at Freiburg to treat all cases of uterine fibromyomata by X rays rather than operation. The results appeared far to surpass those obtained by surgery, particularly as regards the question of mortality. If the figures were not modified the mortality risk after operation was practically always from 3 to 5 per cent. With radiotherapy, on the other hand, a fatality practically never occurred. The mortality was certainly below 0·5 per cent. When the method was first adopted at Freiburg it was only used in those cases where operation was contraindicated, particularly advanced degrees of anæmia. The good results obtained in these very grave cases stimulated further research which conclusively proved the excellence of the method. When first employed in 1906 the technique had to be discarded owing to the severe burns produced. In fact, radiotherapy was entirely given up in the case of fibroids for this reason. It was not until a method was discovered of throwing large doses of rays into the deeper tissues without the production of superficial burns that any success in this method of treatment was obtained. By the employment of filters and a system of "cross-fire" the desired end was attained. In spite, however, of the uniformly good results from the new technique the method did not receive any general attention from the body of the profession for fully five years. In Germany to-day, however, it was advocated in most clinics and was daily receiving fresh support. As regards the results obtained in a series of 400 cases of fibromyomata and "metropathie," the first 205 were of doubtful value inasmuch as the technique was continually being altered. In the last 195, however, the methods had never varied and the results had remained as good as previously. Thus in 169 cases complete amenorrhœa was produced, and in only 0·17 per cent. of the cases did the hæmorrhage recur. As a rule four applications of the rays sufficed to bring about the desired result. These, however, were usually augmented by a further two "consolation" sittings. Although the great majority of fibromyomata were suitable for, and should be treated by, radiotherapy, Professor Gauss did not recommend its employment in the following three groups: (*a*) submucous fibromyomata; (*b*) "sanious" neoplasms; and (*c*) where signs of acute compression were present.

Dr. E. HASTINGS TWEEDY (Dublin) thought that Dr. Donald had voiced the general opinion of the country as regards the general principles that he had laid down. He personally was quite in accord with what he had said. He had been particularly interested in the paper read from Professor Gauss, and although views from Germany could not be lightly dismissed he wished to lodge a definite protest against the employment of X rays in the treatment of uterine fibroids. He quite agreed with what Dr. Donald had said about the difficulty of diagnosis, and it must also be remembered that the mortality from malignancy complicating fibromyomata was 2 per cent.—quite as great, in fact, as that from operation. Where was the malignancy in the series of cases quoted by Professor Gauss? The speaker considered that there was a great danger in trifling with these cases with X rays. Furthermore, Professor Gauss had spoken about hæmorrhage as though it was the only symptom caused by fibroids and the only one that required treatment. It was a pity that he was not there to amplify the paper, which in its present form did not contain sufficient facts to make him enthusiastic on the method. As regards the selection of cases for operation, personally he would operate in every case in which symptoms were present. He thought that in the past they had been greatly misled by the hopes that had been held out of cessation of hæmorrhage, diminution in size, and absence of degeneration after the menopause. As to the removal of both ovaries, Dr. Tweedy differed from Dr. Donald's views concerning the menopause. The moral effect of double oöphorectomy upon a patient was, in his opinion, a very important factor in the production of symptoms attributed to the artificial menopause.

Dr. J. NIGEL STARK (Glasgow) thought that practically all in this country were agreed upon the advantages of the operative treatment of fibroids. He emphasised what Dr. Donald had stated with regard to degenerations and malignant changes occurring after the menopause, and was quite averse to the employment of radiotherapy. In fact, he considered that some of Professor Gauss's statements were so extraordinary that it was impossible to place any reliance upon them, and for the present the British Medical Association would do right to pin its faith to operation in these cases. Dr. Stark advocated subtotal hysterotomy as the method of choice, and stated that in his own series of cases the mortality of this operation was a little over 2 per cent.

Professor MURDOCH CAMERON (Glasgow) thought that too much stress was laid upon the question of rubber gloves in the conduct of operations. Personally, he never used them, and he got quite as good results as other surgeons who interfered with the sense of touch by this means. He noted that Professor Gauss did not advise radiotherapy in the case of submucous tumours. If there was anything in the method why should it fail here? Professor Cameron concurred in the difficulty of diagnosis of uterine fibromyomata, and cited several instances in support of the thesis.

Sir JOHN W. BYERS (Belfast) emphasised the importance of strict asepsis in all operations for uterine fibromyomata and did not agree with the previous speaker's remarks on the question of gloves. He also drew attention to the improved methods of anæsthesia and the bearing these had upon the reduction of mortality in severe operations. His feeling towards X rays in the treatment of fibroids was one of honest scepticism. At the present juncture they did not know sufficient to condemn the method absolutely and it was necessary to "wait and see." Some years ago Apostoli boomed the electrical treatment in precisely a similar manner and time proved its true value. For the present he thought that it was the duty of the profession to recommend operation in all cases requiring treatment. If this was refused it was necessary to keep the patient under close supervision owing to the complications which so frequently and so rapidly developed.

Professor J. A. C. KYNOCH (Dundee) agreed that all fibromyomata which gave rise to symptoms were best removed by abdominal hysterectomy or myomectomy. He had completely discarded the vaginal route, and as regards abdominal hysterectomy he preferred the subtotal to the total operation as being simpler and therefore more rapid. The old objection as to the development of carcinoma in the cervical stump did not upon published facts and his own experience appear to have much weight. When possible he preferred to leave a portion of the endometrial tissue also, as advocated by Abel and Zweifel, and in this country by Alban Doran. He quite agreed with Sir John Byers's remarks upon the importance of a skilled anæsthetist. In his own cases he obviated shock by the previous administration of veronal, scopolamine, and morphia. He had recently had the opportunity of visiting Freiburg and seeing Professor Gauss's work, and he was not prepared to admit as some previous speakers had done that there was nothing in radiotherapy as applied to fibromyomata. At present there was no gynæcological clinic in Germany which did not possess the necessary equipment for this method of treatment. In some centres the method is used with caution and with good results. Probably at Freiburg it is employed to excess. Professor Kynoch thought that it would eventually be found to have a limited field of usefulness, and he certainly should not be antagonistic until he had heard more facts.

Professor B. P. WATSON (Toronto) was of opinion that radiotherapeutic treatment of uterine fibromyomata was simply "harking back" to the old days of double oöphorectomy, since it was through the action of the rays upon these organs that the favourable results were obtained. One of the strongest arguments against the method was the impossibility at present of knowing what changes would occur in fibroids as a result of the artificially induced menopause. As to the routine removal of ovaries in operations for uterine fibromyomata, the speaker thought that everything depended upon the condition of these organs. If they were diseased little need be anticipated in the way of an artificial menopause. With healthy organs, on the other hand, serious symptoms might develop.

Dr. C. E. PURSLOW (Birmingham) agreed with Dr. Donald as to the matter of technique and never employed the vaginal route. He also performed subtotal hysterectomy unless a cervical erosion was also present. In such cases he performed the total operation. He was glad to hear that Dr. Donald advocated the removal of both ovaries. This was his usual practice, and he certainly had had no reason to regret the same. In those cases where symptoms of an "artificial menopause" developed he thought that "suggestion" had frequently much to do with it. As regards the X ray treatment of fibroids he had had little experience. Certainly in one case the hæmorrhage had ceased and the tumour appeared to be diminishing in size.

Mr. H. BECKWITH WHITEHOUSE (Birmingham) also referred to the debated point of the removal of the ovaries. Where it was necessary to remove the whole uterus he was of opinion that best results were obtained when both organs were sacrificed. The ideal treatment, in his opinion, was to conserve both ovaries and a portion of the endometrium. From experiments that he had performed upon rabbits and described elsewhere he thought that a definite correlation existed between the internal secretion of the ovaries and the secretion of the uterine endometrium. The exact nature of this relationship was somewhat obscure, but for the present it certainly pointed to conservation of both endometrium and ovaries as being the ideal to aim at. With regard to the X-ray therapy advocated for fibromyomata he referred to the discussion between the combined sections of gynæcology and electrotherapeutics held at Brighton in July, 1913. Here Professor Gauss, in reply to a question, had definitely stated that fibroid tumours were reduced in size by the treatment quite apart from any question of the cessation of hæmorrhage.

The PRESIDENT said that the discussion had raised several points of very great importance. One of the most important points to decide was what patients should be operated upon. He certainly did not agree that every patient with a fibromyoma should be submitted to operation. As a matter of fact unless symptoms were present a patient very rarely came under observation. An exception to this occurred in the case of young women who were sterile. If the tumour was small an attempt might be made to relieve the sterility by other means, such as cervical dilatation. If this failed and the tumour was not causing other symptoms the decision as to operation should be left in the hands of the patient. If, on the other hand, a fibromyoma was causing well-marked symptoms it should be removed by all means. The relationship of these neoplasms to the menopause was somewhat complicated. It was uncommon for symptoms to arise *de novo* after the climacteric, and if hæmorrhage was present it usually pointed to malignant changes. Concerning the question of technique the President thought that the subtotal operation was to be preferred. He fully endorsed the value of gloves and other strict aseptic precautions in operating, and emphasised the importance of rapidity in technique in order to avoid shock. It was here that the value of a trained assistant was shown so conclusively. As to the question of the removal or not of both ovaries he had not fully made up his mind. His usual practice was to remove the organs in patients over 40 and to conserve them under this age. In a few cases he had transplanted ovarian tissue but had since regretted doing so, because upon more than one occasion he had had to remove cysts later, which had developed from the graft. As regards radiotherapy, the speaker drew a parallel with the electrical treatment of fibroids advocated in the past by Apostoli. When this method was first introduced it was good treatment owing to the high existing operative mortality (10–20 per cent.). To-day this mortality was reduced to 2 per cent., and therefore there was no place for a method which was so uncertain in its action. Recently Professor Haultain's assistant had visited Professor Gauss's clinic and he was disappointed in what he saw. The tumours did not disappear, and the method was in fact only a means of sterilisation and induction of an artificial menopause.

Dr. DONALD, in reply, said that in Professor Gauss's absence it was perhaps unfair to criticise his views very strongly. At the same time, from a perusal of German literature there appeared to be an extraordinary diversity of views upon the question, and these were mutually destructive. With regard to the debated question of removal of the ovaries the whole matter turned upon what he would call the curse of gynæcology—viz., the eternal reasoning from theory to fact, rather than from fact to theory. Fact had conclusively proved to him that a patient was better without her ovaries when it was necessary to sacrifice the uterus. He referred his hearers to Dr. A. E. Giles's work upon the "After-results of Abdominal Operations," in which the point was discussed fully. Dr. Donald endorsed all that had been said upon the value of skilled anæsthesia in abdominal surgery.

THURSDAY, JULY 30TH.

Dr. **HENRY JELLETT** (Dublin), in opening a discussion on

The Management of Pregnancy and Labour in Contracted Pelvis,

said that from a clinical standpoint contracted pelvis might be divided into two main classes—symmetrical contractions and asymmetrical contractions. The former included two main groups—the simple flat pelvis in which the conjugate was the only diameter shortened, and the generally contracted pelvis showing diminution of all the diameters. Symmetrical contractions might be divided into four degrees based on what experience showed was the necessary treatment of each. In the first degree the true conjugate measured 3¼ inches at least, and one might assume that the child would be delivered spontaneously if of normal size and the uterine contractions were sufficiently strong. In the second degree, with a conjugate measuring from 2¾ to 3¼ inches it might be assumed that delivery of a living child per vaginam was only possible if the size of the child was below normal or the size of the pelvis increased. In the third degree, the conjugate measuring from 2¼ to 2¾ inches, spontaneous delivery through the pelvis of a viable child was impossible. In the fourth degree, with a conjugate below 2¼ inches, delivery through the pelvis was impossible, even if the child be reduced by a destructive operation to the maximum extent, and therefore Cæsarean section was the only treatment possible, whether the child was living or dead. Since it was impossible to discuss the whole question in the time at his disposal, the speaker confined his remarks to a consideration of the treatment of contraction in the second degree, and contrasted in connexion with it delivery through the pelvis by the induction of premature labour or pubiotomy or symphysiotomy and Cæsarean section at full term. The advantages of induction were chiefly its ease in accomplishment and that usually a living child was obtained. On the other hand, the objections to induction were the risk of septic infection during the necessary manipulations, the uncertainly of the operation, and the fact that the child was small and naturally delicate. With regard to Cæsarean section, Dr. Jellett pointed out in its favour the simplicity of technique, the certainty which attended the operation, the absence of all laceration of the genital tract, the easy labour with quick recovery, and finally an improved fœtal prognosis. Nevertheless, certain definite disadvantages were present. In the first place, when once a Cæsarean section was done it would probably always have to be repeated in subsequent labours. The reason for this lay in the fact that in order to get the best results the operation must be done at the beginning of labour, and therefore no time could be allowed to see if the patient could deliver herself. Pubiotomy, therefore, in the speaker's opinion, appeared to be the operation of choice in this group of cases. It was not such a severe operation as Cæsarean section in a favourable case. Furthermore, it could be left until a late stage in labour and so give the patient every chance to deliver herself. The great advantage, however, lay in the fact that the operation tended to cause and practically always did cause a permanent enlargement of the pelvis. This allowed a patient in the majority of cases to deliver herself spontaneously in subsequent pregnancies. The disadvantages cited by Dr. Jellett were the possible laceration and injury to the surrounding tissues, the prolonged and painful labour, and the fact that the fœtal prognosis was worse unless the condition of the fœtus was very carefully watched. The speaker then brought forward tables showing the statistics of 19 cases of pubiotomy performed at the Rotunda Hospital by Dr. Hastings Tweedy or himself. All the patients recovered, and in all the child was born alive. These 19 patients had had 29 labours previously, which had resulted in a total of only 7 living children. Subsequent to pubiotomy 15 labours had occurred, resulting in 12 living children. Of the 3 deaths 2 were due to complications in no way associated with pelvic contraction. Regarding the operations 10 were uncomplicated. Of the remaining 9 laceration of the bladder occurred in 1, necrosis of bone in 2, labial hæmatoma and crural phlegmasia in 1, and external hæmorrhage from laceration of the vulval veins in 5. No subsequent alteration of or interference with locomotion was noted in any instance, even in the two cases complicated by osseous necrosis. The general conclusions formulated by the speaker were that in the second degree of contracted pelvis (1) pubiotomy was the operation of choice; (2) it was especially indicated in the case of young primiparæ; (3) Cæsarean section was indicated in the case of elderly primiparæ owing to the rigidity of the tissues and the risk of serious lacerations; (4) the induction of premature labour was only indicated under special conditions; and (5) craniotomy was only permissible when the child was dead.

Professor **FRANK** (Cologne), speaking in German, said that 100 years ago people tried by law to prohibit the operation of symphysiotomy as if it were an attempt to murder. To-day he thought that it was the most successful operation in the whole of midwifery and one that should be brought to the notice of every accoucheur, because it was so simple and free from danger. Nevertheless, the tendency appeared to be to regard it as more of historical than of scientific importance. This opinion was almost universal, and had its basis in the unfavourable results which attended the older methods. As regards the original technique the danger of severe hæmorrhage, septic infection of a hæmatoma, or severe laceration of the tissues was a very real one, and even masters of their art like von Rosthorn were unable to avoid all deaths. Professor Frank observed that in the subcutaneous method devised by him these dangers were eliminated. He then proceeded to demonstrate his operation by means of diagrams. Hæmorrhage was prevented by pulling the clitoris downwards from under the pubic arch by means of the left hand, whilst the actual division of the symphysis was performed with a bistoury. The second risk, infection, was obviated by the fact that the operation was completely subcutaneous. In fact, the external wound must not be larger than the breadth of the narrow knife, which was the only instrument employed. The speaker impressed on his hearers the fact that when the knife left the wound the operation must be entirely finished. The opening in the skin was immediately sutured with catgut and a hæmatoma prevented by compression. If care was taken not to operate in cases of too great disproportion between the head and the pelvis and to control the position of the legs before and after the incision there need be no danger of lacerating the soft parts. Professor Frank had performed the operation in his clinic 155 times without mortality as a direct result of the technique. Two deaths which occurred in the series had nothing to do with the operation. One patient was infected with gonorrhœa and died on the eleventh day of the puerperium with a right pyosalpinx and gonococcal peritonitis. The second fatal case was admitted with severe nephritis and died 11 days afterwards from uræmia. No hæmatoma or any other complication was noted. The speaker noted as contraindications to the operation extreme narrowing of the conjugate and the absence of complete dilatation of the os. Pyrexia was no contraindication if it was desired to save the child. After division of the symphysis it was desirable as far as possible to leave the birth to nature. Statistics had shown most encouraging results in the diminution of fœtal mortality. In the case of mothers who had already borne children, only 23 per cent. were live births. With symphysiotomy, on the other hand, the percentage of living children was raised to 94 per cent. Professor Frank, therefore, came to the following conclusions regarding the treatment of pelvic contraction: 1. In cases with large disproportion classical Cæsarean section was advised, if strict asepsis could be guaranteed. 2. If the asepsis was in doubt delivery by the suprasymphyseal extraperitoneal route was advocated. 3. In moderate degrees of narrowing subcutaneous symphysiotomy was to be preferred in multiparæ. In primiparæ with a narrow vagina suprasymphyseal delivery was advised if there was any suspicion of infection.

In "clean" cases classical Cæsarean section should be performed. 4. If the delivery to obstruction was only slight symphysiotomy should be considered. With regard to suprasymphyseal delivery, the speaker emphasised the fact that the uterus must be opened without injury. Should trauma occur the wound must be carefully sutured. The suprasymphyseal operation was undoubtedly more difficult than classical Cæsarean section, but it could be performed when the latter was contraindicated. Professor Frank's statistics included 100 cases, 52 being primiparæ and 48 multiparæ. Two patients died, one from puerperal sepsis and the other from septic peritonitis the result of a laceration in the peritoneum at operation. All the children were saved with the exception of four.

The President then called upon Dr. David Shannon (Glasgow) to read his paper upon

The Cases of Contracted Pelvis admitted to Professor Kerr's Clinic in the Glasgow Maternity Hospital between the Years 1909 and 1913.

Dr. Shannon, after referring to the unusual facilities afforded in Glasgow for the study of contracted pelvis, probably the result of rickets, said that his paper was based upon a statistical study of 355 cases of pelvic contraction admitted to the Glasgow Maternity Hospital during the last five years. These cases formed about 27·5 per cent. of the total admissions during this period. The average weight of the children was 7 lb., and the figures appeared to show that not infrequently when pelvic contraction was present the child was below the average weight. It might almost be said that the smaller the pelvis the smaller the fœtus. In fact, in all the spontaneous cases the children were quite below the average. The speaker next discussed at some length the question of diagnosis, and emphasised the fact that no criterion could be drawn from the pelvic measurements as to the influence of the bones upon labour, except in cases of extreme contraction. For the borderline cases measurement was only of value in showing the type of contraction present, but was useless for estimating the degree of difficulty that was to be apprehended. The important factor in such circumstances was the comparison of the size of the fœtal head with the pelvic brim. This was best obtained by Munro Kerr's modification of Müller's impression method. The patient should be anæsthetised, and to avoid error care must be taken during the manipulation to avoid lateral displacement of the head. Three degrees of contraction might be recognised based upon the clinical data obtained by this method. In Group 1 the overlapping of the fœtal head was very marked. In such cases Cæsarean section was indicated. Group 2 included those cases where the overlapping was of a moderate degree only. Many such patients delivered themselves, others required forceps, and all might be treated successfully by pubiotomy or symphysiotomy. In Group 3 the overlapping was but slight and delivery was always spontaneous. With regard to the question of spontaneous delivery in pelvic contraction, Dr. Shannon remarked that in the series he brought forward the percentage of unassisted births was 2·5. This was probably a low estimate, since forceps were frequently employed in cases of inertia, which would undoubtedly, if left, terminate naturally. In some instances, even with children weighing 9 lb. and 10 lb., it was surprising how short the second stage might be. The most difficult factor to estimate in any case was the power of the uterus. For this reason whenever a waiting policy was adopted a very careful watch must be exercised over both the fœtal and maternal pulse-rate and the maternal temperature. If any rapid rise was noted delivery must be effected at once. Otherwise as long a period as possible should be allowed for complete moulding of the head to take place. It was the speaker's opinion that many practitioners applied forceps too early in the case and so produced unnecessary difficulties. Traction should be only slight, and it was not good practice to exercise strong and severe pulling. The practice at the Glasgow Maternity Hospital in Professor Munro Kerr's clinic was to avoid any interference until the test of labour had occurred. In many of the cases it was a matter of surprise how easily the labours terminated even when all preparations had been made for symphysiotomy. When forceps were applied if three or four pulls failed to deliver pubiotomy or symphysiotomy was performed. Pubiotomy was preferred to symphysiotomy, but neither operation found much favour in the clinic. Discussing the operation of craniotomy Dr. Shannon remarked that in the figures he submitted this procedure had been adopted more often than desirable, because the cases were admitted to the hospital at such a late stage of labour. Many were infected, and in some the uteri were tetanic. This unfortunate occurrence, he thought, was largely due to the existence of untrained midwives. In all 46 cases were recorded. Of these, 32 operations had been performed in the case of dead children and 10 living. In 4 cases no records were found in the notes. The operation was always carried out with reluctance, but in these badly infected and urgent cases it appeared preferable to Cæsarean section or pelviotomy. The maternal mortality registered 6·5 per cent., and the morbidity 25 per cent. In conclusion, Dr. Shannon referred to the frequency of albuminuria noted in the present series of cases of pelvic contraction. Of the 355 patients, 51 showed marked albuminuria and 3 were complicated by eclampsia.

Dr. Hastings Tweedy (Dublin) congratulated the Master of the Rotunda upon the way in which he had marshalled his facts. The difficulties in the past with regard to the treatment of contracted pelvis might be said now to have disappeared. Exact rules for guidance had been set forth, and the results, based upon statistics, fully upheld the views set forth. He wished to enter a protest against the organised hypocrisy of the profession with regard to the exact measurement of the pelvic diameters. In hospital reports and so forth it was not unusual to see measurements recorded to fractions of a centimetre. On inquiry he had invariably found that measurements of the true conjugate thus recorded were obtained from the diagonal conjugate. As a matter of fact, it was just as difficult to estimate correctly the true conjugate from the diagonal conjugate as it was to obtain a true reading of the latter. He protested strongly against the routine use of the fingers in measuring the diagonal conjugate. The method was entirely fallacious, and the only means that could be recommended was by the use of Schultz's pelvimeter. The speaker was pleased to see that in the papers read inches were used to express the various measurements rather than centimetres, since the degrees of contracted pelvis naturally fell into groups of ½ inch.

Professor Murdoch Cameron (Glasgow) expressed contempt for statistics and in his practice always relied upon Müller's method and an exploration of the pelvic cavity with the whole hand to diagnose the degree of pelvic contraction. He was not in accord with the view that had been expressed that two or three vaginal examinations should serve as an excuse for craniotomy. His favourite operation in any case of well-marked contraction was Cæsarean section. Professor Cameron then demonstrated the types of forceps he used in overcoming obstruction in moderate degrees of contraction.

Professor Kynoch thought that in minor degrees of pelvic contraction the aim of the obstetrician should be to obtain a spontaneous delivery. This could only be done by disregarding the finger of the clock and paying more attention to the general condition of mother and fœtus. In primiparæ he was of opinion that the first labour should form a "test" case upon which the conduct of subsequent pregnancies might be based. With regard to pubiotomy and other widening operations it seemed that the tendency was to put aside good methods for others not so well known. For instance, Professor Kynoch thought that the induction of premature labour had been too severely criticised. The failures attributed to this operation were not really due to the method but rather to the technique employed. The speaker then drew attention to the deficient education of medical students with regard to the diagnosis of pelvic contraction. They were taught much about pelvic measurements and very little about estimation of the size of the child's head and its adaptability to the pelvis, a matter of far greater practical importance. A method which he personally had found to be of considerable service was to take the measurement between the tip of the last lumbar spinous process and the front of the child's head at the point of greatest overlapping and contrast it with the external conjugate. If the difference between the two measurements was greater than 3 cm. delivery was impossible and Cæsarean section was indicated. On the other hand, if the difference was only 1 cm. or less delivery might be expected to be spontaneous. With regard to symphysiotomy as advocated by Professor Frank, the speaker said that he had had an opportunity of visiting his clinic and seeing the operation performed. As carried out by him it certainly possessed points ahead of any other method that he had seen and he could strongly recommend it.

Sir **JOHN BYERS** (Belfast) considered the teaching and conduct of difficult labour, more particularly with reference to the State. Professor Kynoch had drawn attention to one aspect of the case when he referred to the teaching of students. Another, and perhaps more important, factor was the present lack of arrangements for compelling women to seek advice before labour occurred. It was here that the 30*s.* benefit of the Insurance Act failed in its application. If, instead of being wasted, it had been applied to the provision of pre-maternity services, a very great advance would have been made. The speaker then referred to the large number of Cæsarean sections in Dr. Shannon's statistics and thought that an investigation should be made as to the cause of so much rickets in Glasgow. With regard to the operation recommended in any particular case Sir John Byers said that whatever method a particular surgeon preferred he became an adept at it. Whatever method was selected craniotomy upon the living child should be entirely eliminated. In conclusion, the speaker entered a strong plea for the establishment of pre-maternity State hospitals. At present very great difficulties existed, since the panel doctors were even now unable to cope with the necessary work. In fact, this pressure of work quite precluded any systematic examination of pregnant women.

Dr. **H. OLIPHANT NICHOLSON** (Edinburgh) preferred induction of labour to any operation at full term, and demonstrated his method of performing the operation by packing the uterus. Induction seemed to him to possess advantages over operative measures because it could be carried out with safety by the general practitioner.

Dr. **JELLETT**, in reply, said that under suitable circumstances and in the hands of a competent man the induction of premature labour could not be compared with pubiotomy. With regard to the arguments which had been advanced as to methods suitable for the general practitioner, he would say that the treatment of these difficult cases should not be in the hands of the practitioner at all. His paper had dealt entirely with modern midwifery and not midwifery adapted to the requirements of the practitioner. As to the remarks that had been made, almost all the speakers had referred to the disproportion between the child's head and the pelvis as being the all-important factor in diagnosis, but few had suggested the means to rectify it. Pubiotomy did it, and the great value of the operation was that it lowered the risk for all subsequent labours. In fact, Dr. Jellett expressed the view that the time would come when pubiotomy would be advocated before labour as a prophylactic measure rather than as a means to combat an emergency.

FRIDAY, JULY 31ST.

Dr. **H. LEITH MURRAY** (Liverpool) read a paper upon the

Nitrogen Metabolism during Pregnancy Based upon a Series of Investigations upon the Ammonia and Total Nitrogen Output in the Urine.

The speaker commenced by expressing regret that even in maternity hospitals the routine examination of the urine was not so full as it might be. Beyond the qualitative investigation for albumin and acetone and the quantitative examination of urea little else was done. These tests gave information which was only of slight value at best. It was of much greater importance to have a correct quantitative estimation of the ammonia and total nitrogen and degree of acidosis. Dr. Murray then described three simple quantitative tests which could be applied by a relatively inexperienced worker in a clinical laboratory: (1) Mathison's method of ammonia estimation; (2) Groat's method of total nitrogen estimation; and (3) Hart's colorimetric method for estimating the acidosis index. The first was performed by shaking for two minutes 25 c.c. of urine with 15 grammes of *neutral* potassium oxalate and 50 c.c. distilled water. The solution is neutralised with N/10 soda, using phenolphthalein as an indicator; 5 c.c. of neutralised commercial formalin were added and the solution again titrated with N/10 soda until neutral. Each cubic centimetre represented 0·0014. Groat's method consisted of adding to 2 c.c. of urine 6 c.c. concentrated sulphuric acid and a few crystals of potassium sulphate in a Kjeldahl flask. The mixture was boiled in a fume-cupboard until clear, cooled, washed thoroughly into a large flask, and the total nitrogen estimated as ammonium sulphate by Mathison's method. For the estimation of the acidosis index by Hart's method two solutions were necessary: (*a*) ethylacetoacetate 1 c.c., alcohol 25 c.c., distilled water 1000 c.c.; and (*b*) ferric chlorid 100 grammes, distilled water 100 c.c. Into each of two test-tubes of equal calibre were placed 10 c.c. of solution (*a*) and 10 c.c. of urine respectively. To each was added 1 c.c. of solution (*b*). The tube containing urine was diluted until the two matched. The acidosis index per litre then measured 1/10th of the volume (cubic centimetres) in the tube of urine. To obtain the index proper, which represented the total acidosis estimated in terms of grammes of β-oxybutyric acid, the above was multiplied by the number of litres of urine passed in 24 hours. The speaker discussed the possible value of the data obtainable by these tests at some length. An increased ammonia coefficient did not necessarily indicate an acidosis, but might, and often did, represent a change in the liver either degenerative or necrotic. The coefficient normally rose as pregnancy advanced, and was highest during labour. It dropped immediately after labour. It should be noted, moreover, that a trace of albumin had no relation to a high coefficient of ammonia. In discussing the subject of acidosis Dr. Murray raised the question as to whether even an estimation of the acetone bodies was a true measure of the condition. He was inclined to agree with Sellard as opposed to Williamson that the only true test was one of tolerance to alkali. If the organism were in no need of fixed bases any alkali introduced would be eliminated and the urine become alkaline; if, on the other hand, there were a need for fixed bases it would remain in the body and the reaction of the urine would remain unchanged. Sellard's test of administering repeated doses of sodium bicarbonate and investigating the reaction of urine at stated intervals appeared to be a satisfactory, valuable, and easy method for testing the degree of acidosis. The test was in addition a therapeutic measure and gave a clear indication of the cause of a raised ammonia coefficient, whether from a disorder of protein metabolism or as a purely compensatory process. The speaker then gave the results in 80 cases of normal and toxic pregnancy investigated by the above tests. In symptomless pregnancy it appeared that the coefficient rose steadily towards the end, varying between 2·2 and 12 per cent. Occasionally even higher ratios were observed during labour. Hyperemesis, eclampsia, pre-eclampsia, and nephritis complicating pregnancy were discussed in turn, and a comparison made between the ammonia ratio, the acetone bodies, and in some cases Sellard's tests. In hyperemesis (1 case) the urine showed an absence of albumin and acetone, and yet the ammonia coefficient was raised to 25 per cent. Greatly increased tolerance to sodium bicarbonate was present. In eclampsia the ammonia coefficient varied from 13–18 per cent. All the cases, however, were in labour at the time. In one instance mental symptoms remained and the coefficient persisted high. In the case of two pre-eclamptics no acetone was present, and the ammonia coefficient was low. There was, in fact, no evidence of the condition apart from the clinical signs. Dr. Murray admitted the difficulties in the interpretations of the results, and concluded by putting forward a plea for a further and more extended study of the whole subject.

Mr. **BECKWITH WHITEHOUSE**, in congratulating Dr. Leith Murray upon the value and interest of his paper, said that the author was undoubtedly correct in his statement that the routine examination of the urine in most cases consisted of the simplest tests only. Dr. Murray had attempted to prove that these tests were of very little real value in estimating the actual condition present. If his views were correct, then undoubtedly it was their duty to arrange that the more elaborate tests which he had described should be carried out. This work could only be carried out in a properly equipped laboratory, and Dr. Murray's paper had served to emphasise once more the great importance of clinical pathology in modern medicine and the urgent necessity for equipping hospitals, and particularly maternity hospitals, with the means for applying the results of the new work and extending the knowledge already gained. If he might offer any criticism he would suggest that with regard to the value of the new tests in pathological pregnancy they should not draw any conclusions until a longer series of cases had been brought forward. The majority of Dr. Murray's investigations had been made in the cases of normal healthy pregnancies. In the few figures submitted of pathological conditions the results were a little confusing. No doubt with longer series of cases these difficulties would disappear and clear deductions made possible.

Dr. A. W. RUSSELL (Glasgow) expressed his great interest in the paper and said that it was of particular value to him inasmuch as at the Maternity Hospital, Glasgow, a clinical and chemical laboratory would soon be available where work of this nature could be conducted. From 60–70 cases of toxæmic pregnancy were admitted every year to the hospital, and therefore if the tests described by Dr. Murray were of value it was a matter of considerable importance to him. In cases of toxæmic vomiting Dr. Russell's practice was to estimate the ammonia output, and he was convinced that the criterion supplied by Whitridge Williams was a good one, to empty the uterus if the coefficient was high.

Dr. A. TENNYSON SMITH (Orpington) described

A Case of Rupture through the Scar of a Previous Cæsarean Section

occurring in a gipsy aged 22. The patient had a markedly contracted pelvis of the "flat" type. Her first pregnancy was terminated by Dr. Smith by means of Cæsarean section. The placenta occupied an anterior position, but delivery was effected without great difficulty and the uterus closed by a double row of sutures. The first layer included submucous and peritoneal layers, the second peritoneum only. The patient made an uninterrupted recovery and left the hospital at the end of a fortnight. A year later Dr. Smith was again called to the same woman and found her pregnant and in a moribund condition. A diagnosis of ruptured uterus was made, and upon opening the abdomen this was confirmed by finding a fœtus lying free in the peritoneal cavity surrounded by much blood clot. The fœtus was dead and in the right sacro-iliac position. The placenta also was completely detached, having been extruded through a rupture four to five inches long in the uterus in a line with the incision of the previous Cæsarean section. Any attempt to approximate the edges of the wound with sutures failed, and hysterectomy was therefore performed. The patient did extremely well and left the hospital at the end of 14 days. A month later she was known to be working in the fields!

The PRESIDENT said that Dr. Smith had brought forward a very interesting case and one of extreme rarity. He could not think that the placental site was a contributory factor in the accident, and he was more inclined to attribute it to thinning of the uterus and rupture at a weak spot due to a prolonged and obstructed labour.

Dr. C. E. PURSLOW (Birmingham) asked what material had been used to suture the uterus at the Cæsarean section. Personally he always employed silk in the case of the uterine wall.

Dr. DONALD spoke in favour of catgut as the suture material.

Dr. SHANNON recalled two cases of rupture and one of thinning of the scar after the operations of Cæsarean section. He did not think that the method of suturing had much to do with the accident. Personally he always employed catgut, and he did not think that those of his colleagues who used silk as the suture material had had better results. The healing of the uterine wound after Cæsarian section was in a very different position to other wounds owing to the retraction taking place. The constant movement would favour the development of fibrous tissue. Probably sepsis had much to do with weakening of the scar and the predisposition to subsequent rupture.

The PRESIDENT read a brief paper upon

The Treatment of Eclampsia by Means of Veratrone.

A year ago in a communication to the Edinburgh Obstetrical Society he had first drawn attention to the subject.[1] Since then five other cases had been attended with marked success and the present paper was based upon the results obtained. In the first case the patient was admitted to hospital with a blood pressure of 160 mm. Hg. and a pulse-rate of 64. Severe headache was present and much albumin was noted in the urine. 1 c.c. of veratrone was administered, followed by an immediate fall in the blood pressure to 120. Subsequent rises of pressure were on each occasion reduced by administration of the drug, with relief of headache. In all 7 c.c. of veratrone were given. Induction of labour was required in the end, but the patient made an excellent recovery. The second patient was admitted to hospital after a succession of 12 fits. Considerable œdema of the face and arms was present, and the blood pressure registered 175 mm. Hg. The pulse was 100. Only 4 ounces of urine were present in the bladder. 1 c.c. of veratrone produced a fall in the blood pressure to 110 mm. Hg. Although subsequent rises occurred, after each dose of the drug there was a corresponding drop in the arterial pressure. A living child was born, and the patient made a good recovery. A third instance was given of a multipara who had in previous labours suffered from symptoms of an eclamptic nature, and who was admitted to hospital with a blood pressure of 200 mm. Hg. 1 c.c. of veratrone produced a fall of pressure in ten minutes to 125 mm. Hg. Eventually it was reduced to 100 mm., but as no further evidence of improvement was noted in spite of a rigid milk diet, labour was induced. A living child was born. Details of two similar cases each attended with a successful termination were recorded. In discussing the cases the President noted the fact that the severe headache always disappeared when the blood pressure was reduced. On the other hand, if the pulse-rate fell rapidly severe vomiting occurred. In a general survey the outstanding feature of eclampsia was the raised blood pressure. It was always present, and was probably one of the factors responsible for the convulsions. It could not be the *only* cause, however, since fits do not occur when the pressure rose subsequently to the administration of veratrone. As a general rule depression of the pressure by means of this drug was accompanied by a slow pulse-rate and increased urinary secretion. From experiments performed upon cats, the speaker had found that in small doses it produced a fall of blood pressure and a slowing of respiration. If the vagi were cut no difference was noted, and adrenalin and pituitary extract still exerted their usual effect upon the capillaries. The increased urinary secretion was probably due to removal of spasm in the renal capsules. It was possible at the same time that veratrone acted as a direct antidote to the eclamptic toxin. Altogether he (the President) had used it in 17 cases with inhibition of the fits in every case. Only one fatality occurred. The treatment that he adopted might be summarised briefly as a combination of milk dietary, free purgation with calomel, hot packs, and lowering of the blood pressure by means of veratrone in repeated doses of $\frac{1}{2}$–1 c.c.

Professor R. G. MCKERRON (Aberdeen) said that he had listened to Dr. Haultain's paper with great interest, and thought that it formed a very fitting conclusion to a most successful meeting. He had been present when Dr. Haultain had first advocated the veratrone treatment, and as his previous results had been attended by such a high mortality he had since adopted the drug. He was not altogether hopeful that veratrone would prove to be a specific for eclampsia, but he intended to give it a fair trial. The varying results obtained after almost any treatment of this condition suggested that there must be more than one kind of eclampsia. In one type morphia was successful, in another evacuation of the uterine contents was required, and so on. The difficulty was to know in any particular case what was the ideal treatment. At the same time he would for the present impress upon his hearers the great importance of adopting one course and adhering to the same.

Dr. JELLETT referred to Veit's method of treating eclampsia. He had successfully employed the same method during the last three years. In it morphia was used as an adjunct, but it was not the "morphia treatment." He would be inclined to employ veratrone in the same way—viz., as an adjunct to other treatment and to be applied when necessary. Eclampsia could not be regarded as a specific disease. Probably many different causes were involved, requiring as many different methods of treatment. Referring to the results obtained at the Rotunda Hospital during the last six or seven years, Dr. Jellett observed that next to those obtained by Professor Stroganoff the results had been better than any of those attributed to operative treatment.

Professor KYNOCH had tried the veratrone treatment in two cases with very gratifying results. At the same time he sounded a note of warning with regard to the markedly depressant action of the drug. Constant attention was most requisite after its administration, and therefore the method was perhaps more suitable for hospital than private practice.

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[1] THE LANCET, July 26th, 1913, p. 222.

Emeritus Professor W. STEPHENSON (Aberdeen) expressed his great interest in the paper, inasmuch as the experiments had very largely confirmed the work that he had done some years ago upon veratrum viride in the treatment of eclampsia. The preparations that he had used had failed because he found it impossible to keep them for any length of time. Veratrone, on the other hand, was a reliable preparation with a specific action and one that could be admininistered hypodermically. The marked depression which sometimes accompanied its use might be overcome by combining it with an injection of morphine. He did not think that it was necessary to have recourse to veratrone in every case of eclampsia.

The PRESIDENT, in reply, said that he did not consider veratrone a panacea in any way. All he asserted for the drug was that it had a distinct pharmacological action in reducing the blood pressure and therefore the number of fits. He was of opinion that the statistics brought forward by the Rotunda Hospital could not be applied to cases in Scotland, the reason being that in all probability a different disease was under discussion.

MEDICAL SOCIOLOGY.

President, Dr. JOHN GORDON (Aberdeen).

WEDNESDAY, JULY 29TH.

The PRESIDENT, in opening the proceedings of the section, touched upon the closer connexion now existing between the medical profession and the State, beginning with the introduction of the Poor-law in 1842 and culminating in the National Insurance Act. One of the most promising features of recent legislation was that the medical expert had been incorporated into the educational system. It was on the practical experience and everyday knowledge of medical officers of health and general practitioners that social reform and new legislation dealing with public health must be principally based.

A discussion then took place on the Responsibility of the State in Connexion with Venereal Disease. Dr. A. K. CHALMERS (Glasgow), in introducing the subject, discussed

The Relevance of Available Statistics.

He doubted if anyone could say definitely the amount of venereal disease in this country at present; death returns gave no direct help, and applying to the population as a whole the ratio of positive reactions obtained from selected populations was misleading. Moreover, an examination of special data gave considerable variations in the results. Attempts to ascertain the prevalence of the disease should distinguish between acquired and congenital syphilis. An application of the Wassermann test to children suffering from scarlet fever and measles admitted to the Ruchill Hospital, Glasgow, gave a proportion of 8 per cent. positive reactions. This might be compared with 3 per cent. representing the proportion of infants displaying clinical evidence of the disease in over 4000 brought to infant consultations. There was a contrast presented between both these rates and the results in over 700 samples of blood examined by the Wassermann test from patients whose symptoms were obscure; this percentage amounted to 38. Of the three he thought the 8 per cent. the more likely as an index of congenital syphilis. Ophthalmia was present in from 9 to 11 per 1000 births, and of these 13·7 per cent. were complicated with syphilis. The means of diagnosis and treatment of the disease must be made free to the whole population, and though local authorities should organise the facilities, a considerable proportion of the cost should be supplied by the State. An estimate of the probable cost might be made by assuming the 8 per cent. ratio just mentioned, applying it to the population generally and taking 20*s.* as the average cost of salvarsan for an adult. The cost of salvarsan would then be £80,000 for every million of the population, and the total cost to the country in one year might readily run into £3,750,000. If drastic treatment of this sort could be relied upon as likely to protect the population from the worst effects of the scourge he believed the national advantage would well outweigh the cost.

Dr. ERIK PONTOPPIDAN (Copenhagen) gave an account of

Public Measures against Venereal Disease in Denmark.

He said the principle of public and free treatment of venereal patients had been the rule for more than a century, but until 1906 little more was done than to provide for the police supervision and sanitary control of prostitutes. The unsatisfactory results, and the growth of enlightenment and of sound medical criticism, led to the passing of the 1906 law, by which all control over prostitution was abolished and replaced by strict rules, enforced upon all venereal patients. Unfortunately, the medical profession was not consulted, and the law contained many provisions to which the profession strongly objected. Only the readiness of the profession to seize on the good points and ignore the bad had made the law work reasonably. The law laid down rules to secure public order and decency and provided that any person "knowing or supposing" himself to be suffering from venereal contagious disease who had sexual intercourse with another should be liable to imprisonment; the clause extended also to married intercourse. The difficulty of proving cases rendered this clause practically a dead letter. The right of free treatment and the obligation to submit to it were continued in the new law. The doctor in attendance was required, if a patient did not attend in accordance with his instructions, to notify the health authorities. This arrangement, which would make of the physician an informing police inspector, met with strong disapproval from the profession, and most practitioners did not notify cases, nor did the police enforce the rule. Provision was made in the law for means of treatment, and in Copenhagen alone about 4000 men and 1000 women had been treated each year at a cost of about 40,000 kroner a year. Hospital facilities had been augmented. The results obtained had not realised the hopes of the promoters of the new sanitary system; the number of cases of syphilis and venereal disease in Denmark had not been reduced. He believed the lesson to be learned was that the fight must be left to the trained medical army, with the least possible help from the penal code and the police.

Dr. A. LOUISE MCILROY (Glasgow) suggested that a system of confidential notification was necessary, but that for this purpose the Royal Commission should be continued for some years and be authorised to receive confidential notifications of hospital cases. A blood test of gynæcological cases at the Glasgow Royal Infirmary showed that in the first 100 cases the Wassermann test gave a positive reaction in the enormous percentage of 43 instances. At the end of the third hundred the percentage was reduced to between 30 and 40. Every stigma should be removed from treatment of venereal disease, and treatment should not be restricted to special hospitals or specially named wards of general hospitals. Some control should be exercised over patients in a highly infectious state.

Dr. LACHLAN GRANT (Ballachulish) urged that the extirpation of venereal diseases was bound up with the prevention of prostitution, and that this evil could be prevented. With a few exceptions it was due to poverty and ignorance, and a reform of social and economic conditions, including housing reform and the institution of a minimum wage, in his opinion would reduce to a negligible quantity the demand for illicit and unnatural sexual indulgence.

Dr. HELEN M. WILSON (Sheffield) said the community should attend to the moral as well as the physical sanitation of streets, factories, and places of amusement. Beside diagnosis and treatment, doctors owed to patients the warning necessary for guarding against future consequences. A woman should be told if she became infected through married intercourse. The fear of breaking up a home deterred physicians from telling a married woman, but in a great many cases, though indignant, the wife would forgive, and the modern woman wanted to do her own forgiving and not have it done for her by a doctor.

Mr. T. JENNER VERRALL (Bath) urged that the profession must be quite sure of its position in regard to the treatment of venereal disease before it attempted to form or lead public opinion. The public would submit with reluctance to these matters being dealt with openly, and a false step—for instance, in dealing with statistics—might put the whole question back a hundred years. More outspoken treatment as between doctor and patient was not only justifiable but a duty. He was prepared to go to the fullest lengths in open treatment, provided the advance were cautious and the profession did not run the risk of being charged with acting in panic.

Dr. L. A. PARRY (Brighton) entered a caveat against Dr. McIlroy's figures, relative to the examination of a special class, being used for any general purpose.

Dr. LAURA S. SANDEMAN (Aberdeen) approved of the removal of the stigma from treatment of venereal disease, especially since, in so many cases, the disease had been acquired innocently. She thought sickness benefit under the Insurance Act should not be refused to venereal patients; the present policy tended to discourage treatment. The number of acute cases was small as compared with paralytic and chronic rheumatic cases, mainly syphilitic in origin, and for which the societies paid without question. She was in favour of confidential notification, and thought the State should make itself responsible for treatment as a valuable investment from a national point of view.

Sir JOHN COLLIE (London) stated, as a member of the Royal Commission on Venereal Diseases, that the question of confidential notification was being seriously considered. He was opposed to it on the ground that it would tempt sufferers to consult quacks instead of qualified practitioners. It needed serious consideration whether notification would not tend to spread the disease, thus counterbalancing the advantages of getting statistical information.

Dr. S. D. CLIPPINGDALE (London) contributed a historical note showing that the town council of Aberdeen was the first public authority in these islands to attempt by legislative edict to arrest the spread of syphilis. The disease came to Scotland direct from France, and the town council in 1497 issued an injunction to infected persons to abstain from visiting meat and other markets and laundries.

THURSDAY, JULY 30TH.

The proceedings opened with a discussion on a State Medical Service *versus* a Panel System.

Sir JOHN COLLIE read the opening paper in support of

A State Medical Service.

His first point was that no Government was likely to extend medical benefit to the dependents of insured persons on the basis of the panel system at the present rate of remuneration for medical practitioners. Next, although thousands of practitioners were giving good service under the Act, he suggested that for the peculiar difficulties of medical practice in the poor districts of large towns and the thinly populated areas of the Highlands of Scotland a State medical service would be the most satisfactory means of providing treatment. He was adverse to the nationalisation of medicine, and saw no necessity at present for a wholesale State medical service. A part-time service would work in certain districts contemporaneously with the panel system. He deprecated violent changes, but he believed developments in this direction were bound to come and that they would lead to the coördination of public health services. When these changes did come vested interests must be recognised; those who elected to join a State medical service and failed to sell their private interests must be compensated. Under a State medical service salaries must be good and the number of patients allotted to a doctor must not be excessive. Salaries would be graduated and there would be positions of increasing responsibility and remuneration. Facilities would be provided for modern methods of diagnosis, the advice of consultants, and for the augmentation of the present inadequate hospital accommodation. Doctors paid fixed salaries by the State would be more independent of the general public; they would also have regular hours and regular holidays, more time for the home and for post-graduate study, freedom from the commercialism of the present system, and a pension at the end of service. He believed the training of a doctor would prevent his becoming a mere official under such a system; he would still be a clinician, not an administrator. Sir John Collie concluded by criticising an uncompromising insistence on the principle of "free choice," and pointed to the various classes of practice in which no free choice of doctor by patient existed.

Dr. H. H. MILLS (Kensington) followed with a paper in support of

The Panel System.

He urged that it had not yet had a sufficiently long trial for a judgment on its working to be formed. The panel system, which had been advocated by the British Medical Association in theory before the Insurance Act was introduced and approved by the Association when a concrete proposal was before the country, furnished an elasticity of working most closely approaching to the best traditions of the medical profession. Launched in the career of a State doctor, a practitioner would see nothing before him except a number of years' work at a fixed salary with a pension, and this would tend to make work mechanical, mental and professional activities being atrophied because of the limited range of outlook. The panel practitioner, on the other hand, had acquired a new independence; he felt that he was a factor in the social development of the people amongst whom he worked, and that he was destined to mould the social legislation of the near future. As to the difficulties in industrial areas of large towns, there was evidence in London at least of a migration of doctors into densely populated neighbourhoods hitherto insufficiently supplied with medical practitioners. In four London boroughs, with a population of 700,000, where nearly all the doctors were on the panel, 17 new practices had been started since the Insurance Act came into force. In the country generally there were not great numbers of insured persons on single lists; special difficulties had occurred in London in this respect owing to the action of the "die-hard" section of the profession. Lapses on the part of the individual doctor would occur under any system; they were brought to light because for the first time the poor had a tribunal easy of access.

Dr. R. C. BUIST (Dundee) discussed in a somewhat academic paper

The Psychology of Medical Practice.

He argued that the work the doctor rendered must be fairly balanced by an adequate share of the satisfactions of life. If this foundation were unevenly laid any superstructure would be unstable. Nevertheless, the more constantly this foundation were present to consciousness the less satisfactory was the structure. If its science was safe and its compassion inevitable the profession need not trouble itself overmuch about subsidiary issues.

Dr. MICHAEL DEWAR (Edinburgh) described the arguments for a State medical service—regular hours, time for research work, and so on—as simply an alluring bait dangled before the profession. The uncertain nature of the work prevented regular hours; the other advantages could only be enjoyed by a section of the profession. Considering the short time that had elapsed and the magnitude of the undertaking, he thought that the panel system had been a wonderful success. The conditions were not unduly irksome or burdensome and the remuneration was fairly good having regard to the usual charges per visit in a working-class practice and the absence of book-keeping or bad debts. The existing mileage rate was one of the blots of the system; if this were reconsidered the system would even be thought fairly satisfactory by practitioners in country districts. Too much regard should not be paid to difficulties in a few districts; in the country as a whole the system was working well. It was almost a shame that before the present arrangements had been in force a sufficient time to prove their worth a number of practitioners could be found who hurriedly condemned them and sought to replace the panel system by one not favoured by a large majority of thinking men. A State service would abolish the principle of free choice, and judged by other State services, such as the Poor-law, it must not be taken for granted that a State service was necessarily the best. Linking up and coördination of existing services, of which State Medical Service advocates made so much, could be accomplished under the panel system, and was, in fact, about to be undertaken. It was said that a State Medical Service would be of a preventive character; private practice, and especially insurance practice, was largely preventive in character at present.

Dr. A. C. FARQUHARSON (Durham) thought the panel system was to be preferred to the fetters of a wonderful arrangement providing regular hours and pensions but taking away the individuality that had come down to the medical profession through the centuries. If a State service were established, would it be in competition with the general medical profession? If so, the State would derogate the right of individuals to enter into contracts with one another and thus interfere with personal liberty. He was not convinced that coördination and efficiency would, in fact, be the result of a State service. He was a firm believer in the panel system; the Act was working with huge success in Durham.

Mr. MILSON R. RHODES (Manchester), whose communication was read in his absence, declared that the principles of a State preventive medical service were that the medical profession should become the servant of the community and not of the individual patient. When the nation realised that the general practitioner should be the household teacher of preventive treatment and medicine, and not stand merely for the principles of curative and palliative treatment, he hoped the profession would lead rather than be driven by the inevitable process of collective action.

Mr. E. B. TURNER (London) thought that a State service would not get the best out of the individual practitioner; a civil service department was not the best method of Government control of an individualistic profession such as that of medicine. A State service overlooked the personality of the medical man—an enormous factor. If promotion in a State service were by nomination the door would be opened to political favouritism; if by the ordinary routine of a Government office, the man who gave least trouble to superiors and proved himself a docile machine would come to the top. Panel work was partly a State service, but it was far more elastic. Mr. Turner indicated that although he thought a panel system preferable to a State service his sympathies lay with free untrammelled practice in which a practitioner could give of his best under the stress of strenuous competition and in intimate relations with his patients. There were still thousands of doctors striving for this ideal and who said, as to the two systems under discussion, "A plague on both your houses."

Dr. CHARLES FORBES (Aberdeen) thought a State medical service was rapidly becoming a question of practical politics, because treatment of the dependents of insured persons at the same rates as under the present agreements would cost a greater sum than the country would pay. The approved societies would support a State service on grounds of economy, and he believed three-fourths of practitioners on the panel would accept a State service if the terms were satisfactory.

Dr. J. C. MCVAIL (Edinburgh), vice-chairman of the Scottish Insurance Commission, thanked the Association for the invitation to be present, and remarked that under the Insurance Act the doctor came in as a private practitioner with the primary object of doing his very best for the patient; the medical practitioner was always at his best when dealing with a patient as an individual. Taking it for granted that a majority, as indicated by the discussion, were in favour of a continuation of a panel system, it was important they should do their utmost to make the system a success. In this connexion Dr. McVail emphasised the importance of careful certification. It must be made clear when cases really came under the Workmen's Compensation Acts rather than the Insurance Act, and diseases of misconduct must be set down unflinchingly by their real names. A doctor must be careful to certify a man as fit for work on the very day that he decided the person to be in that condition; the workman must not be given till the following Monday to avoid a broken week's work. Every day of sickness was a heavy charge upon the Insurance Fund.

Dr. L. J. PICTON (Stockport) said that little as he sympathised with the exponents of a State medical service, they did at least attempt to deal with the question of taking in the dependents. Supporters of the panel system must say how they would deal with this class. The question was entirely one of expense, and he could not see how the dependents were to be included under the present system, except at a cost that the community could not bear. A source of heavy claims might be eliminated by requiring the individual to bear the cost of short illnesses, the State only coming in after the first days of sickness.

Mr. WISHART (chairman of the Aberdeen Insurance Committee) expressed the opinion that medical practitioners themselves must deal with the defects of the present medical service, especially with the existence of large lists. Otherwise the Approved Societies would press for a State medical service. Why did not practitioners avoid the difficulty of inadequate waiting-room accommodation by grouping themselves and combining to maintain a well-built waiting-room with a nurse and dresser?

Sir JOHN COLLIE, replying on the discussion, said he did not think the profession realised the difficulties that would arise when the extra half-crown voted by Parliament came up for revision, and the dependents were proposed to be included under the Insurance Act.

Two papers were read dealing with

Medical Certification other than Under the Lunacy Acts.

Mr. C. SANDEMAN, K.C., made a contribution in which he explained why, in his view, doctors who signed certificates under the Insurance Act ran no practical risk. There was no breach of confidence in telling a man himself what one thought of him, especially when the man asked for an opinion, and the Insurance Act certificate was addressed to the patient himself. Any publication was made by the patient and he could not recover damages. In Scotland he could sue for injury to personal feelings by the statements in the certificate, but the damages for this were usually assessed at a nominal sum. A doctor warranted his skill, but the warranty only carried him to the point of due care, and one saw very few actions against doctors for malpraxis. If a doctor gave reckless wrong certificates he would be liable to damages for fraud or, if the examination had been careless, to damages for malpraxis.

Dr. FARQUHARSON dealt with the position that under the Insurance Act the doctor was at once the confidential and possibly sympathetic agent of the patient and in some degree the trustee of the State. That flexibility which formerly existed in granting certificates must now practically disappear. Opportunities of illegally sustaining claims were found (1) in the first week and (2) in the weeks of convalescence. An initial certificate merely stating the fact of illness should be followed by another within a week if genuine incapacity resulted. For these cases the practitioner should unhesitatingly accept the fullest responsibility, but for the second group the societies should share in supervision, exercised through the professional referee and the sick visitor. Many doctors sought discretionary powers in regard to post-dating or ante-dating certificates. In his view the system gave no scope for flexibility in this matter; the discretion of the honest practitioner so easily became the indiscretion of the dishonest one.

FRIDAY, JULY 31ST.

The last meeting of the section was devoted to a consideration of

The Duty of the State towards the Early Environment of the Child.

Dr. W. LESLIE MACKENZIE (medical member of the Scottish Local Government Board) reviewed existing legislation directed to the ante-natal care of the child, the control of the conditions of its birth, provision for health visiting, infant clinics, milk depôts, &c. He pointed out how little was being done during the pre-school age, when the environmental dangers to a child life were very great. A more workable system of notification of infectious diseases amongst children was greatly needed, and a primary need was a pure milk-supply.

Dr. THOMAS DEWAR (inspector to the Scottish Local Government Board), whose paper was read in his absence by Dr. MACKENZIE, also laid emphasis on the importance of the pre-school age both in regard to health and the fundamentals of education. He advocated the association of children of from 2 to 5 or 6 years of age for a few hours a day on the kindergarten principle. This would enable medical inspection to begin at an earlier age and would allow influence to be brought to bear on the child's development at a most susceptible and impressionable age.

Mrs. OGILVIE GORDON (London) advocated greater insistence by the State on the practical training of girls in routine duties of home life and the intelligent handling of babies and young children. She urged the members of the British Medical Association to throw their influence into the work of arousing public sentiment on this matter and as to the abolition of child labour. Progress might be more easy in matters relating to children and adolescents if the administrative machinery of the State were simpler. At present nearly every Government office had some concern with the child, but there was no central coördinating body. There were serious gaps in the efforts of the State, viz., in the susceptible years of early childhood and the most critical years of adolescence, with overlapping in the case of some children.

Dr. A. **Rudolf Galloway** (Aberdeen) read a paper on the Care of the Eyes and Eyesight of Children during the Pre-school and the School Periods. For children in the first class it was satisfactory to note that measures for dealing with ophthalmia neonatorum were now becoming general; this disease was held responsible for over one-tenth of all cases of blindness in Europe. Dr. Galloway discussed methods of overcoming the ill-effects upon eyesight often arising from school conditions, and suggested that much wasted time and effort would be saved if boys were subjected to colour-perception tests before choosing occupations in which normal sight was essential.

Dr. J. **Sim Wallace** (London) dealt with the care of dentition. He urged that in regard to dental disease prevention was infinitely cheaper and better than cure. In the past there had been no recognition of the fundamental principle of dietetics that food should be of such a nature that the mouth would be left physiologically clean after each meal. He thought that medical officers of health and public health authorities should take the problem of public education on this matter seriously in hand, for by this means dental maladies could be most easily and economically abated.

Miss J. C. **Barron** (Aberdeen) urged that more should be done to overcome the special educational difficulties of deaf children.

Dr. **Harry Campbell** (London) described the condition of the teeth of the people of these islands as appalling, and agreed that errors of diet were responsible. Masses of starch were poured into the stomach absolutely unmasticated, and that was the cause of the ill-developed jaws which were so common.

Dr. J. **Hamilton** (Hawick) agreed with Mrs. Gordon as to the duplication of authorities and the need for a central authority for child welfare.

Dr. W. E. **Henderson** (school medical officer for Westmorland) remarked that though the fathers of the children were clamouring for an eight-hours day there was no word of an eight-hours day for childhood. It was a poor and mean thing to filch from children their childhood. Although one heard so much about teaching girls in preparation for motherhood nothing was said as to teaching boys the duty of fatherhood. The only man doing that was a soldier, Sir R. Baden-Powell, whose scout movement he regarded as a great educational factor.

Dr. A. **Dingwall Fordyce** (Edinburgh) expressed surprise that the opening papers did not give the official view of the possibility of a central authority for the care of children.

The section unanimously passed a resolution asking the council of the British Medical Association, in view of the confusion of State, municipal, and voluntary methods of dealing with children, to press for the development of a central bureau to have control over all matters relating to child welfare.

THE NATIONAL RELIEF FUND.

There is one simple answer which can be given to a universal question now being addressed to editors of journals. The question is, What can I do to help? and the answer is, Subscribe to the Prince of Wales's National Relief Fund.

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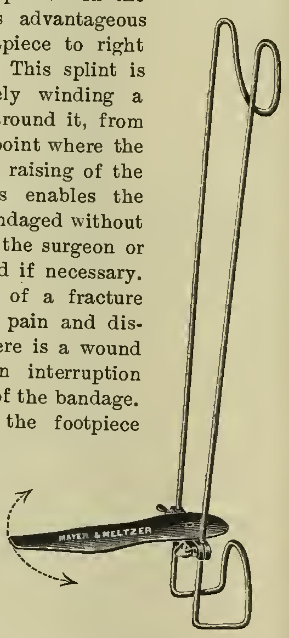
New Inventions.

A NEW FORM OF LEG SPLINT.

The splint shown in the illustration is a modification of one which I have used for about 20 years, and it has many advantages over the ordinary back splint. It is made of round wrought iron, 5/16ths of an inch in diameter, and the ends of the bars which make the sides of the splint are bent underneath and joined together, forming a horse-shoe support both top and bottom, so that the proximal end of the splint is raised about an inch from the surface on which it rests, and the distal end three or four inches. Two short bars of rectangular wrought iron (3/4 × 5/16 in.) grooved, so as to grip the sides of the splint, are clamped together, one above and one below, and carry a footpiece made of sheet steel, so that it may be moved up and down the splint and fixed at various angles in a plane at right angles to the long axis of the splint. In the larger sizes it is sometimes advantageous to be able to move the footpiece to right or left of the middle line. This splint is very easily padded by merely winding a flannel or domette bandage around it, from the top to an inch from the point where the footpiece is to be fixed. The raising of the splint on its horse-shoe ends enables the limb to be bandaged or unbandaged without lifting it off the bed, so that the surgeon or nurse may work single-handed if necessary. There is also much less risk of a fracture becoming displaced, and less pain and discomfort to the patient. If there is a wound at the back of the limb an interruption can be made by omitting part of the bandage. The angular movement of the footpiece enables the splint to be used for either leg with the limb in what Sir Arbuthnot Lane has pointed out to be the natural position of rest—viz., with some rotation outwards. Indeed, it was to allow of this outward rotation that I originally devised the splint. The sliding upwards and downwards of the footpiece enables the same splint to fit legs of very different lengths; it is also advantageous to be able to remove the footpiece if one desires to work the ankle-joint while the limb is resting on the splint. In fractures of the leg, whether one adopts the plates and screws of Sir Arbuthnot Lane or the massage and movement of Lucas-Championnière, this splint has distinct advantages over any other with which I am acquainted. It is very useful in many affections of the knee, and after excision of that joint, also after plating fractures of the femur. I have one in use at present on a patient whose femur had to be plated for a simple fracture just above the condyles, while he had a compound fracture of the tibia and fibula in the same limb. It can be used in place of a Hodgen's splint in fractures of the shaft of the femur if plating is contraindicated. Limbs on this splint are easily handled, and patients find it comfortable. I believe that it would be very useful for military purposes.



The splint has been made for me by Messrs. Mayer and Meltzer, Great Portland-street, London, W.

R. D. **Mothersole**, M.D., M.S. Lond., F.R.C.S. Eng.

Bolton.

THE LANCET.

LONDON: SATURDAY, AUGUST 22, 1914.

Food and War.

ALL the news which we receive from different sources, all the official intimations, and all the inferences to be drawn from price lists point alike to the happy conclusion that this country may for a long time expect to escape the grip of hunger that is so regular an accompaniment of war. Comparative plenty as yet prevails, a fine harvest has, we understand, every prospect of being successfully gathered, and the national position on the sea has been grandly established by the maintenance of most of the trade routes. The duration of the struggle no man can estimate, and it behoves us all to assist in a strict national economy of food, while the money so saved wherever possible should be employed to meet the needs of those who are especially suffering. But national economy is directly opposed to individual hoarding. Let anyone re-read in the light of present events the story of the lynching of FOULON as narrated by CARLYLE, and having done this a feeling of profound thankfulness will be experienced on hearing that the House of Commons has armed the Government with the power to nip in the bud that which might lead to similar excesses in this country. The Reign of Terror itself might not have come about but for the misdeeds of the *accapareur*, the eighteenth-century precursor of the man who thrives on the "ring," "corner," or "combine." At the Board of Trade leading dealers in foodstuffs have been gathered together by Mr. RUNCIMAN, and on all sides it was agreed that the rise in the price of food which occurred rather suddenly just after the outbreak of war was not due to scarcity or to legitimate apprehensions of scarcity, but had been caused, as stated in the House, by the "greed of better-to-do people, who had really disgraced themselves by placing long queues of motor-cars at the entrances of stores and carrying off as many provisions as they could persuade the stores to part with." This long sentence is fully summarised by the one French word of sinister historical significance, *accapareur*. The evil, therefore, was among us, and it was quite time that precautionary measures should be taken; for here and there the crowd had commenced to take the law in its own hands. In several districts shops were sacked, and in some instances the greedy purchasers of food in bulk were menaced.

The meeting at the Board of Trade showed that the wholesale distributors and the retailers were, like their customers, suffering from inflated prices; the individual pig was the sinner and not the public purveyor. The producers and importers who, in the face of a sudden influx of orders, raised their prices, though no lack of provisions justified such an increase, may not escape blame, but they have repudiated such tactics for the future. Now that the Government is endowed with the right to requisition foodstuff, it must exercise this power to prevent any rise in prices due, not to the absence of supplies, but to the greed for profit. A long war is a grave trial to the poorer classes. The public spirit being manifested is quite admirable, as shown by the spontaneous cessation of strikes and lock-outs, and the abeyance of political struggles in Ireland; and the Government, by the amnesty granted to workmen imprisoned for deeds of violence during strikes and to suffragettes for still greater deeds of violence, has shown that our rulers recognise the prevailing spirit. By one and all the need during war time of absolute union and harmony among ourselves is unanimously recognised. But hunger is an unruly councillor, and measures of repression or reprisal cannot be lightly contemplated if national scarcity should call for them. The opening of the war has shown us some of the best troops in Europe breaking down and failing in their duty for want of food. Obviously, therefore, an undisciplined industrial population should be submitted to such strains as little as possible. Those who have means must suffer with their poorer brethren.

If these considerations are obvious to all, to us, whose concern is mainly the physiological and medical point of view, their importance becomes more and more pressing. Those who do not rebel against hunger become through starvation useless citizens. We may be but at the opening of a war period destined to remould the whole condition of Europe. The last war of this description was prolonged with but brief intervals of peace from 1792 to 1815. But whether it be quick peace or lengthy war we have to take thought now; we have to see now that nothing happens to affect the vitality and stamina of the British people. We know from the results of school inspection and the returns of recruiting officers—and know it much more in this way than from the bleatings of half-informed orators—that we have among us too many persons who default from a reasonably high physical standard, and here the respective parts played by bad housing and bad food can be largely estimated. Legislation exists to meet these troubles in various ways, and the present war provides an excellent opportunity for insisting that the people must be fed. Even in times of peace medical treatment is of sadly less use if the patient has not sufficient air, light, warmth, and food. If the healthy are to a marked extent deprived of these, or any of these, they soon fall ill. But if food, cheap food, is so needed in times of peace, this necessity becomes much accentuated in times of war. The Government has already taken measures to prevent famine prices. We cannot all go to the fighting line, but we can all help, in one way or the other, to maintain the vigour of the nation by mitigating the depressing effects of poverty and want.

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The English Milk and Dairies Act.

THE Milk and Dairies Bill, introduced by Mr. HERBERT SAMUEL in May last,[1] occupied several days of a Standing Committee of the House of Commons, and has since passed both Houses of Parliament. It is to come into force next year, unless, as seems probable, the Local Government Board exercises its power to postpone the date on which the Act will take effect. Many changes were introduced in the Committee, but these were essentially on matters of detail, and the general effect of the measure has hardly been altered. An important provision was added, at the instance of Mr. WALDORF ASTOR, to enable the Local Government Board by regulation to prescribe the conditions under which milk is permitted to be sold as "certified milk" and to prevent the use of the term "certified" in the sale of milk which does not comply with these conditions. Some changes were also introduced in the Bill so as to require regulations to be made for the inspection of imported milk and milk products, while the clause authorising sanitary authorities to maintain depôts for the supply of milk for infants was amended so as to require that the sale should not be at a rate under cost price. The smooth passage of the measure, which touches acutely a large number of different trading interests and seriously affects an agricultural industry well represented in Parliament, is highly creditable to the persistence and industry of the present President of the Local Government Board, and a testimony to the Parliamentary skill which he is well-known to possess. The new Act is one which, so far as legislation will carry, marks a great advance on the present unsatisfactory state of affairs, while if properly administered it should do much to promote the public health, particularly of infants and children. Mr. SAMUEL deserves the thanks of the medical service and the public for having removed a defect in the public health law which has for years called in vain for remedy.

New regulations are authorised by the Act for the prevention of infection, the inspection of dairy cows, the prevention of the contamination of milk in transit or delivery, and various other matters. These will need to be carefully framed, and the Local Government Board has to obtain the consent of the Board of Agriculture to their issue. We see no reason to fear that public health interests will be jeopardised by this arrangement, as it is clear that the better class of dairymen and cowkeepers fully recognise that their interests lie in the production of pure milk. The Board of Agriculture, which already has special powers for dealing with tuberculosis in cattle, may be expected actively to promote any measures which diminish the infectivity of tuberculosis among dairy stock, while Members of Parliament who, like Mr. C. BATHURST, are identified with agriculture have given very active support to the Bill. One serious difficulty, however, is likely to confront the local authorities administering the Act. Its operation, particularly as regards bovine tuberculosis, is dependent on a sufficient staff of capable veterinary officers being available. The whole-time veterinary officer in the service of public authorities has evidently a good future before him, and the veterinary profession is likely in consequence of this prospect to have a considerable accession of younger men who will be trained in scientific diagnosis of animal disease and in pathology. They cannot, however, be at once created, and those municipalities which at present have special veterinary officers who are free to go to country districts supplying their towns with milk will look with some apprehension at the loss of these powers of "invasion" under the new Act if the new country veterinary service is not efficient. These special powers will, however, remain for 12 months after the Act has come into operation.

Annotations.

"Ne quid nimis."

PROPRIETARY INFANT FOODS.

IN a report issued this week by the Local Government Board Dr. F. J. H. Coutts discusses the use of proprietary foods for infant feeding, and Mr. Julian L. Baker, F.I.C., describes the analysis and composition of some proprietary foods for infants. According to this report the proprietary infants' foods sold in this country, apart from special preparations of cow's milk, such as humanised milk, condensed milk, and dried milk, may be grouped in five broad classes as follows: I., Foods with a basis of dried cow's milk, but mixed with flour; II., foods consisting mainly of flours, the starch of which is practically altered or altered only by heating; III., foods consisting mainly of flours mixed with a proportion of malt flour or malt extract, but containing much unaltered starch which is not converted during the process of preparing the food for infants in accordance with the directions given on the package; IV., foods containing flours, but also containing active diastase or pancreatic ferment, so that if the food is carefully prepared according to the directions on the package the starch is appreciably altered; and V., foods manufactured from flours, the starch of which has been mainly or partially converted into soluble products during the course of manufacture. Of the number of samples of infants' foods procured for the purposes of this report over 70 per cent. belonged to Classes II. and III., which therefore contain material quantities of starch which remains practically unchanged when the food is prepared according to directions. The general conclusion drawn from the evidence summarised in this report is that many proprietary infant foods are not in fact suitable for the feeding of infants under 7 or 8 months of age, and that they may cause injury: firstly, from the presence of starch in greater or less amount; secondly, from the presence of excess of carbohydrates—starch or sugar—with relation to the protein and fats; and thirdly, from a deficiency in fat. Dr. Coutts concludes that there is evidence to show that the extravagant statements of some manufacturers and dealers with regard to the value of the infants' foods they sell do in fact mislead many poor people to entertain an exaggerated belief in the virtues of these foods, and to use them for very young infants for whom they are entirely unsuitable or even injurious. Legislative action is suggested which may require that all preparations offered or sold as food for infants should be certified by a Government analyst as non-injurious, and that each packet should contain its analysis. This recent report is a valuable addition to the series issued by the Local Government Board on "public health and medical subjects," and it discloses a good deal of painstaking work.

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[1] THE LANCET, May 23rd, 1914, p. 1474.

INFECTION FROM IMPORTED TONGUES.

IN recent years a good deal of attention has been directed at our principal ports to the subject of the possible importation of diseased meat into this country. The importance of this work has been aptly illustrated by a very interesting report presented lately by Dr. E. W. Hope to the Liverpool Port Sanitary Authority, in which it is stated that in consequence of the food inspectors having about the middle of 1913 come across certain indications of disease in frozen ox-tongues imported from South America a systematic examination was ordered of all such consignments arriving at Liverpool. Up to the end of February, 1914, no fewer than 147,501 tongues had been carefully examined, and 3809, or 2·5 per cent., were found diseased. The services of Professor J. M. Beattie and Dr. D. Moore Alexander, of the Bacteriological Department, Liverpool University, were secured to conduct the strictly scientific portion of the inquiry. The number of tongues affected in different consignments varied to a great extent, some being practically free, while other consignments showed a comparatively high percentage of infection. The lymphatic glands at the root of the tongue were chiefly affected, being approximately three times more frequently involved than the "blade" of the tongue. The glands were found softer and more easily broken down than usual, and in some pus had formed, while in others caseation or calcification was taking place. The diseased conditions were shown to be mainly due to actinomycosis, but in some cases tuberculous glands were found, inoculation from which was followed by tubercle infection in experimental animals; in a few instances a mixed infection of actinomycosis and tuberculosis was present. It may be also mentioned that imported ox-cheeks from South America with the submaxillary glands attached have been found showing evidence of actinomycosis. Most of the tongues imported from South America have the lymphatic glands attached, but those from the United States are trimmed, and exported after the removal of the glands; so that it is more difficult in the latter case to find whether the tongue is or is not diseased. As actinomycosis and tuberculosis are known to affect cattle in the United States as well as in Argentina and other parts of South America it is important that the glands should in all cases remain attached to the tongues, so that they may be examined before they are admitted into this country. Actinomycosis, or ray-fungus disease, is produced by the growth of a highly developed bacterial fungus belonging to the group trichomyces; it is mainly seen in cattle and pigs, more rarely in man. It is originally found in plants, barley, and other grasses on which cattle feed; it may occur in animals fed on dry fodder. It can hardly be regarded as a contagious disease of animals. When it attacks man it probably arises from a similar source as that which affects cattle. Abrasions or ulcerations in the mouth predispose to the infection, and it is said to occur frequently in some countries after outbreaks of foot-and-mouth disease. Cases are on record where the bite of an animal has conveyed the malady to man. It is, however, reassuring to learn from Dr. Hope that no human instances have come to light where the sufferer had consumed infected meat. Nevertheless, these imported tongues, if they show signs of disease, should not be admitted to this country whether they cause actinomycosis or not. There is undoubtedly danger of tuberculosis infection in some cases, so that it would be advisable to reject every imported tongue that affords any evidence of glandular infection of whatever sort. It is satisfactory to hear from Dr. Hope that recent consignments of tongues from South America bear evidence that the majority have been more carefully inspected before exportation than was the case in previous years. We understand that Dr. W. J. Howarth, medical officer of health of the City of London, and Dr. Herbert Williams, port medical officer, have issued a joint report on this subject, their conclusions being in the main in the same sense as those of Dr. Hope.

POLYURIA AND BASAL BRAIN LESIONS.

THE pathology of diabetes insipidus remains obscure, but there is some evidence that in certain of these cases there has been a lesion in the neighbourhood of the pituitary gland. This has been shown both by the growth anomalies allied to acromegaly which often accompany descriptions of diabetes insipidus cases, and also by the fact that in many cases there is some limitation of the field of vision, a state of affairs of frequent occurrence with pituitary lesions. Some experiments have been made[1] which throw some light upon the relation of polyuria to brain lesions. Dogs were operated upon, and in different animals various portions of the brain were destroyed, and the effect upon the urine secretion was noted. The areas thus destroyed were those in the immediate vicinity of the hypophysis; in some animals the hypophysis was also destroyed, either at one operation or subsequent to a previous destruction of brain tissue. Some 18 animals were used. The important fact comes out that polyuria may result even when the lesion is not limited to the hypophysis. In five instances the experimental puncture did not touch the hypophysis, yet polyuria resulted. The type of polyuria thus produced differs in no respect from pituitary polyuria. There is a limited area of brain tissue, situated in the vicinity of the hypophysis, ablation of which induces polyuria. Anteriorly it appears to be bounded by the optic chiasma and posteriorly by the protuberance; the area exists in the vicinity of the infundibulum. An observation was that if the hypophysis were removed but the infundibulum preserved there was no polyuria. Basal destruction affecting this special area, following a previous hypophysis ablation, increased the degree of polyuria. The writers consider that this zone of tissue appears to regulate the retention of water in the organism. They found also that this mechanism was less perfect in young animals than in old. It is a function which seems to have some general controlling effect upon water retention, and which assumes a greater significance and value as age advances. It is possible that observations of this nature may aid in furnishing additional data for the localisation of basal tumours.

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[1] Camus, J., and Roussy, G.: Comptes Rendus de la Société de Biologie, 1914, lxxvi., pp. 773 and 877.

DIET AND TUBERCULOSIS.

WE have received an interesting report upon an investigation into the dietary of the labouring classes of Birmingham with special reference to its bearing upon tuberculosis. It has been carried out by Dr. A. E. A. Carver and published by authority of the Public Health and Housing Committee of the corporation of Birmingham. The questions to which the investigation was directed are especially the following: Can the labouring classes, with their present means, obtain a proper dietary? If proper dietary is within their reach, do they obtain it? Has their dietary any bearing upon the prevalence of disease, particularly tuberculosis, among them? Comparisons were made upon 80 families in Birmingham or its immediate neighbourhood, the heads of which were willing to supply the necessary information. In 40 of the families the members were healthy, and in the other 40 one or more of the members were suffering from tuberculous disease, so that the families are divided into two main classes—the tuberculous and the healthy. They are subdivided into five groups according to the income, the first being composed of families whose total weekly income was under 25*s*. a week, the second those with weekly incomes from 25*s*. to 29*s*. 6*d*., the third from 30*s*. to 35*s*., the fourth from 36*s*. to 42*s*., and the fifth with incomes over 42*s*. a week. Almost all the necessary visiting was done by the nurses of the General Dispensary's Tuberculosis Department, who were equipped with tested spring balances and specially prepared note-books. A daily visit was paid during the whole period of the study to each family, and every article of food brought in was weighed and the price noted. Tables showing the foods in most general use, with their composition, energy value, and predominating price per pound in Birmingham during the time of the investigation, are given. Some very interesting results were obtained in regard to the energy value of the dietaries. It was found that the last three healthy groups obtained a dietary with a caloric value approximate to that generally recognised as sufficient for a man doing moderate work, which is given as between 3000 and 3500 calories—the highest of them giving an average of 3178 calories. The two poorer divisions of the healthy group are slightly below 3000. It is somewhat significant to notice that in all five divisions of the tuberculous series the energy value of the food is on an average below 3000 calories, the average for all the groups being 2667 calories. Dr. Carver summarises his conclusions by pointing out that the total energy value of every tuberculous group is below the standard which he advocated—namely, 62 grammes of protein, 110 of fat, 425 of carbohydrate, giving a total energy value of 3020 calories, a standard which is by no means a liberal one, more especially in protein. He also points out that in every tuberculous group it is below the standard obtained in the healthy groups. The quantity of protein shows but little variation, and that an irregular one, in all of the groups. It is always below Atwater's standard. There is apparently a most unmistakable craving for more fat. The healthy groups always succeed in getting more fat than the corresponding tuberculous groups. In regard to carbohydrate the experience of the healthy groups shows that about 425 grams is a suitable quantity for a moderate worker. None of the tuberculous groups attained to this standard. The deficiency in the energy value in the tuberculous groups is due to shortage of fat and carbohydrate. From a careful analysis of his results and from the experience afforded through his visitors, Dr. Carver concludes that the labouring classes both need and desire instruction in food values, and he recommends that such instruction should be given to girls from the ages of 12 to 14 at elementary schools and to mothers at special classes, at mothers' meetings, and at their homes, by competent district visitors. At the present time such information would seem to us to be of a special value when the question of husbanding the national food-supply owing to the exigencies of war is desirable.

WOUNDS IN THE REVOLUTIONARY WARS.

Alsace and Lorraine were the scene of perpetual combats between the Napoleonic forces and the Austrian and Prussian armies. In Erckmann-Chatrian's "Histoire d'un Paysan," an admirable sequence of romances dealing with the wars between 1780 and 1815, the horrors of that time are depicted with masterly fidelity. But surgery has wrought one great change. The soldiers' greatest foe after battle a hundred years ago was not famine or pestilence, or the wandering and starving village dog, not the forest wolf, nor even the camp follower so vividly described in Hugo's "Les Misérables"; it was the putrescence of wounds. The *paysan* of the famous French romancists, who was assuredly an actual person, describes with much vividness and detail how he encounters an old comrade lying under the colonnades of the town hall at Phalsbourg in 1795. The man has been wounded in the hip by a "biscayen," and his wound is so offensive as to cause nausea to those near him. He is carefully nursed in a private house, but his presence there is such a danger to health that only the brave Dr. Steinbrenner—surely a historic personage—and the peasant and his wife can venture near him. The local midwife, acting as nurse in those days before the Red Cross was known, is driven away from her improvised bed on the landing. The drawing forth of the "biscayen" causes the sick man to groan so loudly that his voice is heard through the floor of his room. Surely a vivid touch. The horrible carnage of battle continues to-day, but modern surgical science has triumphed marvellously over the still greater horrors that in old times were wont to follow.

A RESPIRATORY TRACT IN THE MID-BRAIN.

IT has for some time been suggested by Marckwald and others that there exists in the brain of the higher animals a centre which in some way regulates respiration. The exact location of such a centre has not as yet been forthcoming, but it was supposed to be probably in the formatio reticularis at the level of the posterior colliculi. In the *Journal of Physiology* (1914, vol. xlviii., p. 32) Dr. Graham Brown records an observation which goes strongly to prove the presence of such a respiratory controlling area. The animal used was cercopithecus callotrix. The brain was exposed and divided in the region of the thalamus. On a certain area, to be presently noted, rapid faradic stimulation by the unipolar method resulted in immediate gasping of the animal. There was also rapid panting, and the abdominal muscles contracted and relaxed strongly and rhythmically each second. That these effects were due to the particular site and character of stimulation was shown by the fact that withdrawal of the stimulation caused immediate cessation of the movements. There was also no after-discharge. The area, too, was very limited, and stimulation 1·5 millimetres away from it showed no effect. The site of this "respiratory" area was 3 mm. from the aqueduct, just to the side of it, at a point on the efferent tract (recto-bulbar ?) of the anterior corpora quadrigemina. This is an isolated observation, but if confirmation is forthcoming it will add still another nervous centre to those already located as responsible for certain coördinated and automatic actions.

FOR several years the medical profession in Canada have hoped for a Department of Public Health in the Dominion Government, but it has now been practically decided that public health matters can be best prosecuted by the Public Health Branch of the Canadian Conservation Commission, which is under the control of Dr. Charles A. Hodgetts.

JULY AT HOME AND ABROAD.

At Home.

ALTHOUGH last month was far brighter than the July of 1913 in this country it was relatively dull when compared with the average, as well as showery. Over England generally there was at least an hour per day less sunshine than that given by a normal July. There were many days with only an hour or two, and several with less than an hour, but an absolutely sunless day was very rare. At the Kew Observatory the dullest day was the 3rd, when the sunshine was less than a quarter of an hour, and the brightest the day following, when the sun shone in a cloudless sky and yielded a total exceeding 14 hours. The aggregate number of hours for the month was only 152, against an average of 204 hours. The more central districts of London recorded a similar total; at South Kensington the figure was 155 hours. Along the south and south-west coasts, and also on the south-east coast, the sun was more generous, but nowhere was the sky as clear as usual. At Newquay the total was 174 hours, and at the Scilly Isles 170 hours, or 48 hours less than the average, while on the other side of the Channel, at Jersey, the total figure, 200 hours, was 47 hours below the normal. A similar divergence was general inland; at Nottingham the sun shone for 139 hours instead of for 190 hours, and at Bath for 180 hours instead of 204 hours. The hottest days of the month were quite at the beginning, when the temperature rose to nearly 90° in London and to far above 80° over a considerable portion of the country beyond. Thunderstorms arrived, however, followed by a much lower temperature, and subsequently the thermometer only made a few feeble attempts to rise above the normal. During the last ten days or so the air was decidedly cool for the time of year, the thermometer failing to reach the moderate level of 65° on some days. At Kew the mean maximum temperature was a little below 71°, a figure just equal to the normal, while the mean minimum, 55°, was nearly a degree above it. Over the country as a whole there was little difference from the average in the mean temperature, in spite of the fact that on most afternoons the maximum was rather low for the time of year. At Harrogate the mean maximum was 67° and the mean minimum 52°, both values being just 2° above those at Buxton; and on the south coast, at Brighton and Bournemouth, the mean maximum was almost identical with that at Harrogate and the mean minimum some degrees higher. At Brighton the mean minimum was no lower than 58°, 3° higher than that at Kew, and the mean range of temperature for the month was unusually small—only 10° against 16° at Kew and Bath.

The month as a whole was not wet. Although rain fell on many days the quantity was seldom large, the chief exceptions accompanying the occasional thunderstorms during the first fortnight. At Kew the aggregate was no more than 1·70 inches, whereas the average for July is 2·30 inches. In the south-west of England, however, several localities received considerably more than the normal, although not nearly enough to counterbalance the drought of the three months preceding.

Abroad.

Over the nearer regions of the continent, in the Netherlands and the greater part of France, extreme heat was very rare, and rain quite as frequent and generally heavier than in the south of England. At Paris there were few afternoons with the thermometer above 80°. The first day was the hottest, as in London, and a maximum of 90° was recorded, but on several days towards the end of the month the thermometer remained below 70°, and the mean maximum was only 73°, 2° higher than at Kew. The temperature of the nights was practically the same as in London, the mean minimum value being 55°. At Brussels the temperature as a whole was identical with that at Paris, although on several individual days there was a striking difference. On the seaboard of northern France and of Belgium and Holland the general state of the weather differed little from that along the southern and south-eastern coasts of England, and the temperature of the day-time was usually several degrees lower than in the inland cities. In central Europe the weather conditions were more settled and the temperature appreciably higher. Maximum readings above 80° were the rule instead of the exceptions, and on more than one occasion the figure of 90° was recorded. At Berlin the mean maximum was as high as 79°, and had it not been for some much cooler days during the last week the figure of 80° would have been surpassed. The nights were also much warmer than those at Paris and Brussels. Several nights were no cooler than 65°, and the mean minimum temperature was 61°.

ASYLUM REPORTS.

Brighton County Borough Asylum, Haywards Heath (*Annual Report for the Year ending Sept. 30th, 1913*).—Mr. Charles Planck, the medical superintendent, reports that the number of patients in the asylum at the end of the year was 802, the average daily number resident being 819. The direct admissions amounted to 156, of which 42·1 per cent. were deemed curable. There were 99 discharges, with a percentage of 31·7 recoveries on the direct admissions. Ninety-four deaths occurred, the death-rate amounting to 11·5 per cent. Of these, 10 were due to tuberculosis and 3 to dysentery.

Royal Eastern Counties' Institution for Idiots, Imbeciles, and the Feeble-minded, Colchester (*Annual Report for the Year 1913*).—The total number of patients under care was 421, the average daily number in residence being 383, which is 50 per cent. more than it was nine years ago. Such an increase is exceptional among charitable institutions, and is evidence that the public think that the institution is doing useful work in the Eastern counties. The number of admissions was 48. The average age on admission was

13 years. The discharges amounted to 13. During the last ten years, omitting cases which have been sent to other institutions, only 1·1 per cent. of the patients have left permanently. Dr. F. D. Turner, the medical superintendent, remarks that this institution provides almost complete permanent care, to a far greater extent, he believes, than any other charitable institution for defectives in England. The number of deaths was 20, with a percentage of 15 from tuberculosis. An epidemic of scarlet fever occurred; there were 11 cases at irregular intervals in six months. Dr. Turner notes the curious fact that, according to his experience, the incubation period of scarlet fever among mentally defectives may be anything up to 23 days. With regard to the training of the children, Dr. Turner is convinced of the importance of beginning of manual training at an early age, but he is not among those who believe that the ordinary defective will ever become largely self-supporting. If the high and low grade cases be taken together, an average net profit of 1*s.* per week per head would be evidence of good work, and in most cases it is doubtful if this result would be obtained. Speaking of the Mental Deficiency Act, Dr. Turner says that it is an astonishing fact that these institutions, which for years have been doing the State's work of looking after these poor people, are not to be directly assisted in their work by the Government, and it cannot be too widely known that the new Act only provides for limited classes of defectives, and only for these classes under special circumstances.

Barnwood House Hospital for the Insane, near Gloucester (*Annual Report for the Year 1913*).—The number of patients in the hospital on Dec. 31st, 1913, was 157, and the number of boarders was 1. The daily average number in residence was 150. There were admitted 8 males and 25 females. Over 75 per cent. of the patients are likely to be under care for the rest of their lives. Speaking of etiological factors, Dr. J. G. Soutar, the medical superintendent, says that the systematic study of instability of character in children affords scope for investigation which may prove of great service to the community. It is not enough for the criterion of mental efficiency to be a purely intellectual one. The brain faults which most surely lead to wreck of mind are those which reveal themselves in what we speak of as character. The character training of the unstable child is thus of the utmost importance. There were 22 discharges, of which 2 were typical examples of dementia præcox. Dr. Soutar remarks that these cases may become free from all manifestations of active mental disorder, yet according to his experience they never completely recover in the scientific sense, and that sooner or later there is always a recrudescence leading to profound dementia. These cases must be differentiated, not by the result only but by the features of the disorder, from the cases of mania, melancholia, confusional and delusional insanity occurring at the period of adolescence. There were 4 deaths, the death-rate on the daily average number resident being 2·66 per cent.

Public Health.

ANNUAL REPORTS OF MEDICAL OFFICERS OF HEALTH.

Metropolitan Borough of Woolwich.—Dr. Sidney Davies includes in his report for 1913 the results of inquiries as to the habits of persons in Woolwich suffering or dying from cancer during two years, particularly in regard to their consumption of alcohol, tea, meat, and tobacco and the existence of constipation. The series relates to 120 cases, and the information obtained is compared with corresponding data in a sample population of 108, made up of persons dying from other causes than cancer at ages over 50, or still alive at advanced ages. The comparison showed an incidence of cancer which was heavier among users of alcohol and tobacco in excess, though it was not great when cancer of the mouth and throat were excluded. The figures are too small to be of value in themselves, but a collection of similar data among a larger population and over a more extended period might yield useful results. For such information to be obtained, however, some system of notification of cancer would be needed; inquiries made of relatives and others after a man has died as to his personal habits can seldom be very reliable. Referring to the excessive prevalence of diphtheria in the parish of Woolwich, Dr. Davies refers to the fact that this disease is liable to haunt a particular locality persistently for several years. Ten years ago the same parish was conspicuously free from diphtheria by comparison with the rest of the borough. At each period the localisation of the disease seemed to be due to its having become endemic in certain of the elementary schools, and the high rate in Woolwich parish in 1913 is attributed to the invasion in this way of the Wood-street school, the largest in the parish area. As the borough of Woolwich is noted in the Local Government Board tables for 1913 as having shown the highest sickness rate of diphtheria (3·3 per 1000) in any London borough, it is interesting to note that Dr. Davies finds that many deductions have to be made for wrong diagnoses, and that the corresponding rate stated in the report is only 1·9 per 1000. The figures in the report, however, are somewhat puzzling, as when the 244 notified cases of true diphtheria are added to 77 notified cases excluded as not diphtheria, the total of actual notifications, 321, is still less than the total of diphtheria cases removed to hospital, which was 370. Particulars are given with regard to the "High Street Flats" area, which appears to contain much unhealthy slum property, in which some 273 persons are lodged. Attempts to get the owners to take joint action for the improvement of these dwellings failed, and the medical officer of health represented the area to the London County Council as "unhealthy" under Part II. of the Housing of the Working Classes Act. The report states that the County Council has refused to take action; it would have been interesting to know the grounds on which the refusal was based. A considerable number of houses in North Woolwich are being demolished to make room for the extension of the South Albert Dock, and the provision of houses for the persons displaced has been made a condition precedent to demolition. The houses let in lodgings in Woolwich are many, but only 432 are registered, the public health committee apparently considering that a larger number would not add to the improvements which can be obtained by registration. Dr. Davies considers that inspection of these houses ought to be made by a woman inspector, and regrets that no such inspector is available. The provision by the borough council of baths for workmen at their dust destructor has not proved a great success, and the report suggests that if spray baths were substituted greater use would be made of the washing facilities. In 202 routine investigations made in respect of zymotic enteritis in houses of all classes in the borough special note was taken of the accommodation provided for food storing. In 111 cases food was stored in unventilated cupboards, usually in the kitchen near the fireplace; in 61 cases there was no provision at all, and food was kept on open shelves; in 20 cases it was kept in a safe provided by the tenant; and in only 10 cases was there any efficient larder accommodation.

Metropolitan Borough of Holborn.—Dr. W. A. Bond has to deal with a part of London which is becoming more and more important as a business centre, and steadily diminishes in resident population. The latter is somewhat cosmopolitan; the 49,357 inhabitants at the Census of 1911 comprised 1488 Italians, 956 Germans, 709 French, 487 Russians, 294 Austrians, and 288 Swiss. More than 300 of the worst houses in the borough have now been reported on in detail under the Housing Regulations, and action has been taken on these reports. In many cases the owners agreed to close the premises for reletting on building leases, and it was only necessary to make closing orders in four cases. Negotiations for the erection by the council of working-class dwellings in Shorts Gardens—formerly a particularly unwholesome corner of central London—are now practically completed. The Passmore Edwards Settlement School for Mothers was opened during the year, and includes a "baby clinic" held every Monday afternoon. This is organised in close association with the Holborn public health department, and is attended by the lady sanitary inspector. In order to encourage a continuance of breast-feeding amongst poor and deserving mothers 96 dinner tickets were distributed to enable them to obtain a sixpenny dinner at a restaurant in the borough. The register of houses let in lodgings includes 641 houses, 41 having been added during the year. Notices were served for 24 overcrowded rooms, and 222 notices for other breaches of by-laws applicable to this class of house. The report refers to the reasonable demand of the borough councils in London for powers to compel occupiers of premises to place house refuse in proper receptacles in such convenient positions for removal as the sanitary authority may require. Ice-cream making, which formerly was carried on in this district under very unsatisfactory conditions, is now closely supervised, but occasional infringements of the regulations are still met with, and the report refers to two prosecutions for preparing ice-cream in bedrooms.

Metropolitan Borough of St. Pancras.—During the autumn of 1913 a special inquiry was instituted into all shops in St. Pancras where milk is sold, and Dr. T. Shadick Higgins reports that the results were far from satisfactory in the case of shops selling milk as part of their general trade. There were 389 shops at which milk was sold by registered persons; 93, or 24 per cent., sold usually one gallon or less per day, and 109, or 28 per cent., from one to two gallons. The principal type of shop at which these small quantities are dealt with is the chandler's or huckster's shop, which have no milkround attached to the business. Most of these were so lumbered with articles or goods that the floor could not be kept clean; in many a large number of dirty goods were kept for sale, and the premises were quite unsuited for the milk trade. The milk vessels were not properly covered or protected from flies, a defect also observed on premises of the regular dairyman. Some of these general shops were in direct communication with sleeping rooms. Dr. Higgins concludes that in over 100 of the shops the conditions are very bad, and so long as the class of trade that is carried on in them remains as it is they can hardly be made suitable for the sale of milk. Conversation with the shopkeepers made it clear that the majority of those who sell only small quantities of milk do not do so for the doubtful profit which they make, but in order to attract customers for their other goods, and many would even be pleased to give up the trade if their competitors did the same. Quite apart from the powers which local authorities generally will obtain under the new milk legislation, those which at present exist in London are ample to provide a remedy for the state of affairs described in this report. The borough council has only to enforce, strictly and impartially, the power of removing unsuitable premises from the register which it possesses under Section 5 of the London General Powers Act, 1908. The report states that the St. Pancras council has removed from its register a number of milk-sellers with unsuitable premises during the present year, no doubt in consequence of this investigation. No borough scheme for the dispensary treatment of tuberculosis had been formulated in 1913, but two tuberculosis dispensaries were in active work, the St. Pancras dispensary, the committee of which includes representatives of the borough council and the medical officer of health, and that at University College Hospital. The first of these institutions has received formal approval from the Local Government Board and grants in aid, the borough council undertaking to take over the dispensary if the committee fail to maintain it to the Board's satisfaction. At the end of 1913 formal approval to the second had been withheld until the dispensary had come to some arrangement with the councils of the boroughs in the neighbourhood, with a view to its serving a definite area of local government.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In the 97 English and Welsh towns 7478 births and 4164 deaths were registered during the week ended Saturday, August 8th. The annual rate of mortality in these towns, which had been 11·6, 11·3, and 12·1 per 1000 in the three preceding weeks, declined to 12·0 per 1000 in the week under notice. During the first five weeks of the current quarter the mean annual death-rate in these towns averaged 11·7, against 11·4 per 1000 in London. Among the several towns the death-rate ranged from 2·2 in Ealing, 5·2 in Reading and in Bath, 5·7 in Ilford, 6·1 in Wimbledon and in Bournemouth, and 6·2 in Brighton, to 17·0 in Liverpool, 17·1 in Swansea, 18·5 in Bootle, and 19·3 in Dewsbury.

The 4164 deaths from all causes were 28 fewer than the number in the previous week, and included 548 which were referred to the principal epidemic diseases, against numbers increasing from 394 to 549 in the four preceding weeks. Of these 548 deaths, 332 resulted from infantile diarrhœal diseases, 99 from measles, 52 from whooping-cough, 39 from diphtheria, 15 from scarlet fever, and 11 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 1·6 per 1000, and coincided with the rate in the previous week. The deaths of infants (under 2 years) attributed to diarrhœa and enteritis, which had steadily increased from 112 to 302 in the four preceding weeks, further rose to 332 in the week under notice, of which 69 were registered in London, 27 in Birmingham, 26 in Sheffield, 22 in Liverpool, 17 in Hull, 16 in West Ham, and 15 in Leeds. The deaths referred to measles, which had been 110, 98, and 104 in the three preceding weeks, declined to 99, and included 33 in London, 13 in Leeds, 11 in Liverpool, 10 in Oldham, 5 in Manchester, and 4 in Birmingham. The fatal cases of whooping-cough, which had been 73, 83, and 71 in the three preceding weeks, further fell to 52 in the week under review; 8 deaths were recorded in London, 5 in Manchester, 4 in Liverpool, 4 in Sheffield, and 3 in Newcastle-on-Tyne. The deaths attributed to diphtheria, which had been 34, 46, and 43 in the three preceding weeks, further fell to 39, and included 7 in London, 5 in Birmingham, 3 in Portsmouth, and 2 each in Walthamstow, Northampton, Stoke-on-Trent, Liverpool, Manchester, and Oldham. The deaths referred to scarlet fever, which had been 26, 28, and 18 in the three preceding weeks, declined to 15 in the week under notice, and included 4 in London. The fatal cases of enteric fever, which had been 12, 14, and 11 in the three preceding weeks, were again 11, of which 2 occurred in London and 2 in Devonport.

The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had steadily increased from 2862 to 3154 in the 12 preceding weeks, further rose to 3155 on August 8th; 378 new cases were admitted during the week, against 430, 414, and 405 in the three preceding weeks. These hospitals also contained on August 8th 1058 cases of diphtheria, 148 of whooping-cough, 37 of enteric fever, and 23 of measles, but not one of small-pox. The 1033 deaths from all causes in London were 16 fewer than the number in the previous week, and were equal to an annual death-rate of 11·9 per 1000. The deaths referred to diseases of the respiratory system, which had been 128, 86, and 113 in the three preceding weeks, rose to 122 in the week under notice, and were 14 above the number in the corresponding week of last year.

Of the 4164 deaths from all causes in the 97 towns, 159 resulted from different forms of violence, and 342 were the subject of coroners' inquests, while 1224 occurred in public institutions. The causes of 42, or 1·0 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in Manchester, Bristol, West Ham, Bradford, Hull, Nottingham, Portsmouth, and in 71 other smaller towns. Of the 42 uncertified causes of death 7 were registered in Birmingham, 6 in Liverpool, 5 in Gateshead, 3 in London, 3 in Southport, and 2 each in Coventry, Leicester, Darlington, and South Shields.

In the 97 English and Welsh towns with populations exceeding 50,000 persons at the last Census, 9707 births and 4366 deaths were registered during the week ended Saturday, August 15th. The annual rate of mortality in these towns, which had been 11·3, 12·1, and 12·0 per 1000 of their aggregate population, estimated at 18,120,059 persons at the middle of this year, rose to 12·6 per 1000 in the week under notice. During the first six weeks of the current quarter the mean annual death-rate in these towns averaged 11·9, against a corresponding rate of 11·5 per 1000 in London. Among the several towns the death-rate during the week ranged from 5·1 in Southport, 5·9 in Swindon, 6·0 in Enfield, 6·9 in Ilford, and 7·0 in Wimbledon, to 18·1 in Sunderland, 18·4 in Barnsley, 18·7 in Tynemouth, 19·2 in Liverpool, and 19·9 in Cambridge.

The 4366 deaths from all causes were 202 in excess of the number in the previous week, and included 588 which were referred to the principal epidemic diseases, against numbers steadily increasing from 394 to 548 in the five preceding weeks. Of these 588 deaths, 348 resulted from infantile diarrhœal diseases, 111 from measles, 65 from whooping-cough, 31 from diphtheria, 19 from scarlet fever, and 14 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 1·7, or 0·1 per 1000 above the rate in the previous week. The deaths of infants (under 2 years) attributed to diarrhœa and enteritis, which had increased from 112 to 332 in the five preceding weeks, further rose to 348, and included 102 in London, 28 in Liverpool, 22 in Sheffield, 16 in Manchester, 15 in Leeds, 13 in Birmingham, 12 in Hull, and 11 in West Ham. The deaths referred to measles, which had been 98, 104, and 99 in the three preceding weeks, rose to 111, of which 46 were registered in London, 14 in Leeds, 12 in Liverpool, 7 in Oldham, 4 in Sheffield, and 3 each in Birmingham and Manchester. The fatal cases of whooping-cough, which had been 83, 71, and 52 in the three preceding weeks, rose to 65 in the week under review; 20 deaths occurred in London, 4 in

Manchester, and 3 each in Liverpool, Leeds, and Newcastle. The deaths attributed to diphtheria, which had been 46, 43, and 39 in the three preceding weeks, further declined to 31, of which 4 were recorded in Birmingham, and 2 each in London, Southampton, Coventry, and Liverpool. The deaths referred to scarlet fever, which had been 28, 18, and 15 in the three preceding weeks, rose to 19, and included 3 each in London and Birmingham, and 2 each in St. Helens, Warrington, Manchester, and Oldham. The fatal cases of enteric fever, which had been 14, 11, and 11 in the three preceding weeks, rose to 14, of which 4 occurred in London.

The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had steadily increased from 2862 to 3155 in the 13 preceding weeks, had declined to 3072 on Saturday, August 15th; 335 new cases were admitted during the week, against 414, 405, and 378 in the three preceding weeks. These hospitals also contained on August 15th 1038 cases of diphtheria, 122 of whooping-cough, 34 of enteric fever, and 18 of measles, but not one of small-pox. The 1056 deaths from all causes in London were 23 in excess of the number in the previous week, and corresponded to an annual death-rate of 12·2 per 1000. The deaths referred to diseases of the respiratory system, which had been 86, 113, and 122 in the three preceding weeks, declined to 117 in the week under notice, but were 2 above the number in the corresponding week of last year.

Of the 4366 deaths from all causes in the 97 towns, 169 resulted from different forms of violence, and 348 were the subject of coroners' inquests, while 1317 occurred in public institutions. The causes of 34, or 0·8 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in London and in its 14 suburban districts, in Manchester, Leeds, Bristol, Bradford, Hull, and in 58 other smaller towns. Of the 34 uncertified causes of death, 8 were registered in Birmingham, 5 in Liverpool, and 2 each in Preston, Blackpool, Sunderland, and South Shields.

HEALTH OF SCOTCH TOWNS.

In the 16 largest Scotch towns 1057 births and 509 deaths were registered during the week ended Saturday, August 8th. The annual rate of mortality in these towns, which had been 12·7, 13·5, and 12·9 per 1000 in the three preceding weeks, further fell to 11·6 per 1000 in the week under notice. During the first five weeks of the current quarter the mean annual death-rate in these towns averaged 12·9, against a corresponding rate of 11·7 per 1000 in the 97 large English towns. Among the several towns the death-rate ranged from 4·6 in Perth, 5·4 in Hamilton, 6·3 in Motherwell and in Falkirk, to 13·3 in Paisley, 17·0 in Coatbridge, and 17·8 in Kirkcaldy.

The 509 deaths from all causes were 60 fewer than the number in the previous week, and included 64 which were referred to the principal epidemic diseases, against numbers declining from 58 to 49 in the three preceding weeks. Of these 64 deaths, 29 resulted from infantile diarrhœal diseases, 14 from whooping-cough, 6 from measles, 5 from scarlet fever, 5 from diphtheria, and 5 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 1·5, against 1·6 per 1000 in the 97 large English towns. The deaths of infants (under 2 years) attributed to diarrhœa and enteritis, which had increased from 10 to 31 in the four preceding weeks, fell to 29, of which 19 were recorded in Glasgow, 3 in Dundee, and 3 in Leith. The deaths referred to whooping-cough, which had been 15, 9, and 7 in the three preceding weeks, rose to 14 in the week under review, and comprised 11 in Glasgow, 2 in Greenock, and 1 in Coatbridge. The fatal cases of measles, which had been 12, 8, and 5 in the three preceding weeks, were 6 during the week ending August 8th, of which 4 occurred in Dundee. The 5 deaths attributed to scarlet fever, of which 2 were registered in Glasgow, were equal to the average in the four preceding weeks. The deaths referred to diphtheria, which had been 4, 3, and 3 in the three preceding weeks, rose to 5, and comprised 2 in Glasgow, 2 in Edinburgh, and 1 in Dundee. The 5 fatal cases of enteric fever, of which 3 occurred in Glasgow, were 3 in excess of the average in the four preceding weeks.

The deaths referred to diseases of the respiratory system, which had been 51, 70, and 61 in the three preceding weeks, further declined to 55 in the week under notice, and 28 deaths were attributed to different forms of violence, against 27 and 23 in the two preceding weeks.

In the 16 largest Scotch towns with an aggregate population estimated at 2,293,200 persons at the middle of this year, 1215 births and 608 deaths were registered during the week ended Saturday, August 15th. The annual rate of mortality in these towns which had been 13·5, 12·9, and 11·6 per 1000 in the three preceding weeks, rose to 13·8 per 1000 in the week under notice. During the first six weeks of the current quarter the mean annual death-rate in these towns averaged 13·0, against 11·9 per 1000 in the 97 large English towns. Among the several towns the death-rate during the week ranged from 2·7 in Hamilton, 8·2 in Clydebank, and 8·8 in Kilmarnock, to 15·7 in Aberdeen, 16·9 in Perth, and 17·3 in Ayr.

The 608 deaths from all causes were 99 in excess of the number in the previous week, and included 73 which were referred to the principal epidemic diseases, against 49 and 64 in the two preceding weeks. Of these 73 deaths, 36 resulted from infantile diarrhœal diseases, 16 from whooping-cough, 7 from diphtheria, 6 from measles, 6 from scarlet fever, and 2 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 1·7 per 1000, and coincided with the rate in the 97 large English towns. The deaths of infants (under 2 years) attributed to diarrhœa and enteritis, which had been 20, 31, and 29 in the three preceding weeks, rose to 36, of which 18 were recorded in Glasgow, 4 in Dundee, and 3 in Edinburgh. The deaths referred to whooping-cough, which had been 9, 7, and 14 in the three preceding weeks, further rose to 16, and included 12 in Glasgow. The 7 fatal cases of diphtheria, of which 4 occurred in Edinburgh, were 3 in excess of the average in the five preceding weeks. The deaths attributed to measles, which had been 8, 5, and 6 in the three preceding weeks, were again 6 in the week under notice, and included 3 in Dundee. The 6 deaths referred to scarlet fever, of which 2 were registered in Glasgow, were slightly in excess of the average in recent weeks. The 2 fatal cases of enteric fever were recorded in Glasgow.

The deaths referred to diseases of the respiratory system, which had been 70, 61, and 55 in the three preceding weeks, rose to 63 in the week under notice, and 25 deaths were attributed to different forms of violence, against 23 and 28 in the two preceding weeks.

HEALTH OF IRISH TOWNS.

In the 27 town districts of Ireland 544 births and 378 deaths were registered during the week ended Saturday, August 8th. The annual rate of mortality in these towns, which had been 16·1, 14·5, and 15·7 per 1000 in the three preceding weeks, further rose to 16·4 per 1000 in the week under notice. During the first five weeks of the current quarter the mean annual death-rate in these towns averaged 15·7 per 1000, against corresponding rates of 11·7 and 12·9 per 1000 in the English and Scotch towns respectively. The annual death-rate was equal to 17·3 in Dublin (against 11·9 in London and in Glasgow), 17·9 in Belfast, 14·3 in Cork, 12·7 in Londonderry, 12·2 in Limerick, and 9·5 in Waterford; while in the 21 smaller towns the mean death-rate did not exceed 14·4 per 1000.

The 378 deaths from all causes were 15 in excess of the number in the previous week, and included 40 which were referred to the principal epidemic diseases, against 38 and 52 in the two preceding weeks. Of these 40 deaths, 18 resulted from infantile diarrhœal diseases, 7 from measles, 6 from whooping-cough, 4 from scarlet fever, 4 from enteric fever, and 1 from diphtheria, but not one from small-pox. The mean annual death-rate from these diseases was equal to 1·7, against 1·6 and 1·5 per 1000 in the English and Scotch towns respectively. The deaths of infants (under 2 years), attributed to diarrhœa and enteritis, which had increased from 13 to 21 in the four preceding weeks, fell to 18 in the week under notice, of which 10 were registered in Dublin, 3 in Belfast, and 2 in Cork. The deaths referred to measles, which had been 14, 8, and 11 in the three preceding weeks, fell to 7, and comprised 5 in Belfast and 2 in Dublin. The fatal cases of whooping-cough, which had been 6, 4, and 9 in the three preceding weeks, fell to 6 during the week ended August 8th, of which 3 were recorded in Cork and 2 in Belfast. The 4 deaths attributed to scarlet fever, which were all registered in Belfast, were equal to the average in the four preceding weeks. Of the 4 deaths referred to enteric fever, which were slightly in excess of the average in recent weeks, 2 belonged to Dublin, 1 to Belfast, and 1 to Limerick. The fatal case of diphtheria occurred in Dublin. In addition to the deaths from the above diseases, one death from typhus was registered in Belfast.

The deaths referred to diseases of the respiratory system, which had been 41, 34, and 42 in the three preceding weeks, further rose to 47 in the week under notice. Of the 378 deaths from all causes, 127, or 34 per cent., occurred in public institutions, and 9 resulted from various forms of violence. The causes of 14, or 3·7 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the 97 large English towns the proportion of uncertified causes did not exceed 1·0 per cent.

In the 27 town districts of Ireland with an aggregate population estimated at 1,205,280 persons in the middle of this year, 597 births and 354 deaths were registered during the week ended Saturday, August 15th. The annual rate of mortality in these towns, which had been 14·5, 15·7, and 16·4 per 1000 in the three preceding weeks, fell to 15·3 per 1000 in the week under notice. During the first six weeks of the current quarter the mean annual death-rate in these towns averaged 15·7 per 1000; in the 97 English towns the corresponding rate did not exceed 11·9, while in the Scotch towns it was equal to 13·0 per 1000. The annual death-rate during the week was equal to 19·1 in Dublin (against 12·2 in London and 14·6 in Glasgow), 14·8 in Belfast, 11·6 in Cork, 17·8 in Londonderry, 4·1 in Limerick, and 13·3 in Waterford, while in the 21 smaller towns the mean death-rate did not exceed 12·3 per 1000.

The 354 deaths from all causes were 24 fewer than the number in the previous week, and included 49 which were referred to the principal epidemic diseases, against 52 and 40 in the two preceding weeks. Of these 49 deaths, 26 resulted from infantile diarrhœal diseases, 8 from measles, 8 from whooping-cough, 3 from diphtheria, 2 from scarlet fever, and 2 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 2·1, against 1·7 per 1000 in the English and in the Scotch towns. The deaths of infants (under two years) attributed to diarrhœa and enteritis, which had been 21, 21, and 18 in the three preceding weeks, rose to 26, and comprised 13 in Belfast, 11 in Dublin, and 2 in Waterford. The deaths referred to measles, which had been 8, 11, and 7 in the three preceding weeks, were 8 in the week under review, and were all registered in Belfast. The fatal cases of whooping-cough, which had been 4, 9, and 6 in the three preceding weeks, rose to 8, and comprised 3 in Belfast, 3 in Cork, and 2 in Queenstown. The 3 deaths attributed to diphtheria, of which 2 occurred in Dublin and 1 in Galway, were slightly in excess of the average in recent weeks. The fatal cases of enteric fever occurred in Dublin and Belfast, and those of scarlet fever in Dublin and Kilkenny.

The deaths referred to diseases of the respiratory system, which had been 34, 42, and 47 in the three preceding weeks, were 46 in the week under notice. Of the 354 deaths from all causes, 120, or 34 per cent., occurred in public institutions, and 10 resulted from different forms of violence. The causes of 4, or 1·1 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the 97 large English towns the proportion of uncertified causes did not exceed 0·8 per cent.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

IN accordance with the provisions of His late Majesty's Order in Council of May 13th, 1901, the undermentioned, formerly a Staff-Surgeon in His Majesty's Fleet, has been placed on the Emergency List:—Stanley Samuel Howard Shannon (dated August 9th, 1914).

ROYAL ARMY MEDICAL CORPS.

The undermentioned are granted the temporary rank of Lieutenant whilst employed with the Army:—Dated August 7th, 1914: Frederick George Chandler, Arthur Joseph Eagleton, George Dearden Jameson, Alma Percy Ford, Reginald Kinloch MacGregor, Harold Young Mansfield, Leonard Colin Somervell, Henry Washington Batchelor, Malcolm Donaldson, Robert Graham Brown, Owen Lambert Vaughan de Wesselow, Kenneth Blackie Aikman, Duncan Westlake Pailthorpe, Charles Stewart Parnell Hamilton, John Frank Taylor, William Henry Dakin Smith, Horace William Hay, St. John Dudley Buxton, Harold Archibald Douglas, Henry Drummond Robb, Alexander Frederic Potter, John Archer Cowan, Maitland Radford, William Muir Howells, Herbert Arnold Watermeyer, Gilbert Charles Chubb, William Kelsey-Fry, Arthur John Waugh, Hamish Morton Anderson, George Christopher Metcalfe, Charles Samuel Eric Wright, John Bramley Moore, Louis Lazarus, Arthur Gordon Haynes Lovell, Howard Alexander Bell, Ernest Scott, William Allan, George Henry Chisnall, Ivan Stuart Wilson, and Martyn Herbert Watney. Dated August 8th, 1914: Charles William Berry Littlejohn, Rupert Strathmore Scott, Vernon Charles Whitby Vickers, James La Fayette Lauder, Percy Patrick Butler, Henry Barton Owens, and William Howard Lister. Dated August 9th, 1914: Edwin Joseph Wyler, Arthur Edward Brown, and Lancelot Gerard Bourdillon. Dated August 10th, 1914: Hugh James Orr-Ewing, David Galloway Watson, Hugh Duberley Willis, Monamy Aston Cornwall Buckell, Claude Charles Harrison, George Maclean Campbell, Robert Duncan Mearns Macpherson, Cyril Sherris, Allan Mann, John Whigham, Ronald Silcock, Cyril Evered Thwaites, John Berry Haycraft, Reginald Samuel Sherard Statham, Cecil Beresford Hogg, Arthur Samuel Glynn, John Dotto, Ronald Hodson, John Stanley Avery, John Luke Jackson, Findlay Murchie, William Oswald Halpin, Frederick Edward Saxby Willis, Cyril James Weston Clayton, Lionel Henry Yorke Stephen, Geoffrey Trevor Loughborough, James Ernest Helme Roberts, Philip William James, Eric Wordley, Basil William Armstrong, and Arthur Ernest Bullock. Dated August 11th, 1914: Edward Worrell Carrington, Ralph Lester Scott, Francis Ruthven Thornton, Herbert Henry Powys Morton, Henry Goodwill Wiltshire, Ernest Ronald Walker, and Walter Seymour Danks. Dated August 12th, 1914: Frederick John Thorne and Joseph Godwin Greenfield. Dated August 13th, 1914: Aubrey Dean Vernon-Taylor, Edward Musgrave Woodman, James Evelyn Thoresby Jones, Thomas Martin, Rex Stansfield, Herbert Walker, Algernon Charles Stanley Smith, Frederick Theophilus Hill, John Sainsbury, George Heaford Varley, Alexander Rentoul Esler, Arthur Francis Savory Sladden, and Kenneth Bruce Dickson. Dated August 15th, 1914: Arthur Keith Armstrong, Raymond Brewitt Taylor, William Llewellyn Gwyn Davies, Harold Sheldon, and Harold Beckwith Whitehouse. Dated August 16th, 1914: Adolph Richard Niel MacGillicuddy, Robert Molyneux Miller, Harold Edward Battle, and Carleton Yates Ford.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

Cadet Richard Feltrim Fagan, from the London University Contingent, Officers Training Corps, to be Lieutenant (on probation) (dated August 3rd, 1914). Cyril James Anthony Griffin, late Cadet Sergeant, London University Contingent, Officers Training Corps, to be Lieutenant (dated August 5th, 1914). Frank Cook, late Cadet Corporal, University of London Contingent, Officers Training Corps, to be Lieutenant (dated August 6th, 1914).

Supplementary to Regular Units or Corps.

The undermentioned Cadet Corporals, from the Belfast University Contingent, Officers Training Corps, to be Lieutenants (on probation) (dated July 29th, 1914):—William Napier and Donald Reid Wheeler.

TERRITORIAL FORCE.

Royal Army Medical Corps.

East Anglian Clearing Hospital: The announcement of the transfer of Major James S. Warrack, attached to units other than medical units, is cancelled.

Home Counties Clearing Hospital: Major James S. Warrack, from attachment to units other than medical units, to be Major (dated June 25th, 1914).

North Midland Mounted Brigade Field Ambulance: Lieutenant Thomas D. Buchanan to be Captain (dated August 19th, 1914).

3rd Highland Field Ambulance: Douglas Hay Scott to be Lieutenant (dated August 19th, 1914).

6th London Field Ambulance: Lieutenant Joseph E. Ryan to be Captain (dated August 1st, 1914).

1st South Midland Field Ambulance: the undermentioned to be Lieutenants (dated August 19th, 1914):—Morris Wilks and William Bowater.

2nd West Riding Field Ambulance: Craufurd Tait Matthews to be Lieutenant (dated August 19th, 1914).

3rd London General Hospital: The undermentioned to be Captains (dated August 19th, 1914):—Theodore Gilbert Alexander Burns, Francis Woodcock Goodbody, Francis Howard Humphries, Arthur Edward Dodson, Somerville Hastings, and Raymond Ebenezer Apperly.

4th London General Hospital: Walter d'Este Emery to be Captain (dated August 19th, 1914).

3rd Northern General Hospital: Professor Henry Roy Dean to be Major (dated August 19th, 1914).

3rd Scottish General Hospital: James Robertson Campbell Greenlees to be Captain (dated August 19th, 1914).

4th Southern General Hospital: Edward Revely Clarke to be Captain (dated August 19th, 1914).

5th Southern General Hospital: Captain Edward J. D. Taylor, from the Mobilisation List to the permanent personnel, to be Major (dated August 19th, 1914).

Attached to Units other than Medical Units.—Lieutenant William Murray to be Captain (dated April 16th, 1914). Oswald Lowndes Scarborough to be Lieutenant (July 22nd, 1914). Harold Dearden to be Lieutenant (dated August 19th, 1914). Lieutenant David G. Kennard to be Captain (dated August 19th, 1914).

Supernumerary for Service with the Officers Training Corps.—Cadet Quartermaster-Sergeant Thomas Douglas Inch, Edinburgh University Contingent, Senior Division, Officers Training Corps, to be Lieutenant for service with the medical unit of that contingent (dated August 19th, 1914).

Home and Foreign Notes.

(From our own Correspondents.)

SCOTLAND.

Feeding of School Children in Scotland.

A memorandum has just been issued by the Scottish Office to school boards dealing with the steps to be taken regarding the feeding of school children. It is recommended that arrangements for this purpose should be made everywhere. In the smaller burghs and country districts where no scheme at present exists the school board should be ready to take action as soon as the need arises. The powers possessed by boards will enable them to make arrangements for the provision of meals for all children whose parents desire it, either on payment of a small charge or gratuitously, if circumstances so demand. Where there is any doubt on this point the child should get the benefit of free meals until full inquiries into the home life have been made. These inquiries should be directed towards ascertaining whether the parents are able to bear any of the cost of the meals and whether they are so situated that further assistance is requisite. In a letter accompanying the memorandum emphasis is laid on the necessity of working hand in hand with the local committees formed in connexion with the administration of the National Relief Fund during the war. On these committees it is hoped that school boards will be duly represented.

Royal College of Surgeons, Edinburgh.

The College have decided to add the Imperial University of Japan and Bristol University to the list of universities whose graduates in medicine and surgery may present themselves for the Fellowship of the College without first becoming Members. The South African College, Cape Town, is now recognised as a school of anatomy and physiology for the courses required for admission to the second examination of the Conjoint Board of the Royal Colleges of Physicians and Surgeons.

Insurance Committee for the Burgh of Edinburgh.

Dealing with the question of tuberculosis, the committee have recently accepted the following recommendations: 1. That the Insurance Committee should acquiesce for the current year in the proposal that the corporation of Edinburgh should give sanatorium treatment to dependents, on the understanding that the corporation will agree to meet any deficit emerging in the Burgh Committee's Sanatorium Benefit Fund Account for the year. The estimated deficit was £9350. 2. That in the opinion of this committee the schemes in connexion with nursing, pathological laboratories, and the provision of additional treatment for tuberculosis, as outlined by the Chancellor of the Exchequer in his Budget statement, should not be administered by local authorities and boards to be constituted, but should be placed under the administration of the Insurance Committees.

The Death of Dr. J. Wallace Milne.

The death took place suddenly on the morning of August 13th, at his residence in Aberdeen, of Dr. John Wallace Milne, at the early age of 39 years. A native of New Deer, Dr. Milne was educated at the parish school and Gordon's College, Aberdeen, entering Marischal College in 1891. After completing his college course with honours in several subjects Dr. Milne continued his studies at St. Bartholomew's Hospital before starting practice in Aberdeen. There he quickly acquired a large practice, and in 1900 he was appointed assistant surgeon to the staff of the Aberdeen Royal Infirmary. Dr. Milne held the position of major in the 1st Scottish General Hospital, and had entered on his duties on the mobilisation of those connected with that hospital when attacked with the illness which proved fatal. A sound surgeon and a popular man, his early death is made more sad by the fact that he leaves behind him a widow and a young family.

Dr. W. Hector, of Tarland, has been nominated by the Coull parish council and school board to act under the new Mental Deficiency Act, and the nominations have been approved by the General Board of Control, Edinburgh.

August 18th.

PARIS.

Paris in a State of War.

The aspect of Paris is entirely transformed. The suppression of omnibuses, the extreme reduction in the number of tramcars and hackney vehicles, the closing of nearly all the shops whose proprietors and employees alike have gone to the front, have already given to the immense city, ordinarily teeming with life and bustle, an entirely unfamiliar aspect. Many automobiles, bearing the Red Cross flag to indicate that they are engaged on hospital duty or that they belong to a medical man, move rapidly about. The greater number of medical men, even those of mature age, in Paris have already gone to take up their posts in the Army Medical Service, and your own correspondent is writing you this, his last letter for some time to come, only a few hours previously to his departure to take charge of an ambulance corps, as *médecin chef* in the army of the East. To attend to the needs of the population of Paris lists of medical men remaining in town, with their addresses, have been posted in the *mairies* of each quarter. The night medical service on duty at each police station has been especially strengthened. Medical men in charge of hospital services have for the most part remained at their posts, but in military *tenue.* Many hospitals have been evacuated and their patients assigned to others, which will be reserved for the people of Paris, who are less numerous at the present time, since the city is emptied of half its population. The others care for the wounded, who are now beginning to arrive, though at present in small numbers. The military direction does not intend to discharge them all into Paris. If the fortune of war should cause Paris to be besieged that would mean too many mouths to feed, and in case of distress too many patients to be transported from the city. The evacuation of the wounded is directed especially towards the hospitals of cities most likely to be removed by distance from probable attack by the enemy—Lyons, Nantes, Rennes, Caen, Bordeaux, and so forth. Also the generous offers made by the residents of large mansions and by the proprietors of the huge shops to transform their premises into private hospitals have been superabundant, so that the greater part of them have had to be declined by the administration. Certain of these persons, it appears, moreover, in making these charitable offers have thought to retain their automobiles, and, owing to the protection afforded by the Red Cross flag, to avoid the requisition which pitilessly falls upon all these vehicles. An innumerable quantity of places, with beds, material, and personnel, has been put at the disposition of the Government. The Faculté de Médecine with its vast halls and the buildings of the practical schools of the Faculty are henceforth converted into ambulance stations, as well as all the lycées, the public and private schools. The wife of the Minister for War has established by public subscription a vast ambulance organisation in the premises of the École Polytechnique, under the control of Professor Chantemesse. The principal fear of the latter is lest infectious diseases should break out in epidemic form in consequence of the enormous shifting of population and the movements of troops, as happens in all large wars. In preparation against small-pox the Prefect of Police has ordered a general revaccination of the population of Paris. Huge quantities of antityphoid serum have been prepared. The Institut Pasteur has been placed under military control (*a été militarisé*) and is preparing vaccines night and day for the Ministry of War. A police order has proved effective in calling attention to the need for boiling milk during the period of great heat, to prevent the development of gastro-enteritis. As to the drinking-water, the supply appears amply sufficient; precautions have been taken to guard the sources and secure them against being poisoned by German spies; the extraordinary instances of barbaric ingenuity that are discovered daily among them lead to the thought that this fear, which at any other time would have been considered romancing, is not incompatible with what is known of their desire to inflict injury. It is impossible at this moment to make any observations on cases of interest from the point of view of military surgery, as the Government allows publication of no news except that furnished by itself, and exercises a rigorous censorship over the papers. Meanwhile, the population of Paris decorates the city en fête with flags—French, English, Belgian, and Russian.

August 15th.

INDIA.

First Ambulance Field Day in India.

THE first ambulance field day in India was organised recently at Simla by the Assistant Commissioner of the St. John Ambulance Brigade. The general idea of the scheme was that a northern brigade with its headquarters at Simla was operating against a southern brigade with its headquarters at Subathu. The two forces had met at Jutogh, and the northern brigade had driven the southern brigade back on Subathu. Both forces sustained heavy losses, and the St. John Ambulance Brigade was called out to take over the care of the wounded and sick and to relieve the regular medical services who were required to accompany the northern brigade marching on Subathu. The Simla corps of the St. John Ambulance Brigade paraded under the command of ambulance officer P. H. Marshall, and the nursing sisters of the Simla Nursing Corps paraded under the command of Lady Superintendent the Honourable Mrs. Spence. The number of casualties in the engagement between the northern and southern brigades was given as 84. Of these there were 20 able to walk, 50 fit for transport sitting up, 10 fit for transport lying down, and 2 unfit to be moved. In addition to the 12 wounded the southern brigade left behind two medical cases—viz., a case of rheumatic fever and a case of small-pox. The 20 fit to walk and the 50 fit for transport sitting up were sent to Simla in rickshaws, 100 of which had been commandeered for the purpose. No form of transport for lying-down cases was available. The St. John Ambulance Brigade therefore had 14 severe cases to deal with, and the brigade personnel in less than an hour improvised from scanty material and three empty rooms a general ward, an operating theatre, and an isolation ward. The sick and wounded were dressed and actually put to bed, and those requiring it were got ready for operation in 45 minutes. The inspecting officer, Colonel Patrick Hehir, Deputy Director of Medical Services, Army Headquarters, at the close of the proceedings congratulated all concerned.

The Death-rate in Bombay.

The Honourable J. P. Orr lectured recently at the Improvement Trust Office on the "Density of the Population of Bombay." The population per acre, he said, varied from 112 to 1179. "In six circles the population has been at one or the other censuses over 900 per acre, in 23 others it has been over 600 per acre, and in 41 others over 300 per acre: and there are only 13 in which it has never been over 300 per acre, i.e., nearly double the density of population in New York. The average density in 1911 for the various sectional areas varies from 183 in Dongri to 638 in 2nd Nagpada." We should naturally expect that where there is great density of population combined with great congestion of buildings, so that the residents do not get sufficient light and air, there would be a higher death-rate than in better developed and more thinly populated localities, and so the mortality returns show it to be in Bombay. Referring to a chart which was prepared to compare the mortality of the trust's tenements with those of the sections in which they live Mr. Orr said: "It will be seen that in every case the chawl rate is far below the section rate, and in every case below the city average. All this makes it clear that the Bombay corporation should aim at thinning out the population of the congested slums and getting the people to migrate to well developed estates in the sparsely populated areas."

Cocaine Eating in Bombay.

Although almost every other day cases of conviction for dealing in cocaine are reported, and although the authorities have long prosecuted a rigorous campaign against the traffic, victims of the cocaine habit are still very numerous in Bombay, and large quantities of the drug are daily sold. According to Major Arthur Tuke, I.M.S., who has an interesting article on the subject in the *Indian Medical Gazette*, the habit is prevalent among the upper as well as the lower classes, and Mahomedans are the greater consumers. Apart from the physical harm done to the victim, this habit is producing endless petty thefts and crime. The confirmed cocaine eater consumes as much as 60 grains a day, the price being about 3 annas per grain. Once having acquired the habit he cannot endure even a reduction of his daily dose, much less do without it altogether. Somehow he must find 180 annas a day to satisfy his craving. In the case of the poorer victims the usual resort is theft.

A Surgeon's Fees in Burma.

An interesting case was disposed of by the Judicial Commissioner of Upper Burma last month. The plaintiff applicant, Captain Lack, I.M.S., civil surgeon, Bhamo, sued originally in the Small Cause Court P. Gullegher, of the Telegraph Department, for the recovery of Rs.32, being his fees for two professional visits to the defendant respondent's wife. The judge in the Small Cause Court gave plaintiff a decree for Rs.4 only, to be paid by two instalments of Rs.2, and refused him costs, relying on the case Rawlins *v.* Daniel (2 Agra 56), where it was held that, in the particular case, one-fifth of the monthly income of a defendant was the fair amount to which the plaintiff was entitled for his professional attendance on the family of the defendant, who was a public servant, for a year. The judge also held that the plaintiff was not entitled to claim fees for his second visit because he made it without being specifically summoned, was not justified in refusing Rs.10 which was sent him by a money order, and that his conduct in attempting to charge the defendant's family individually was reprehensible. The plaintiff admitted that he refused to accept the money order for Rs.10 sent by the defendant's wife, and that when the defendant objected to the charge made for the second visit he wrote pointing out that on the occasion of both visits he was asked to attend a child, and enclosed a modified bill charging Rs.32 more, this course being taken to show the defendant that his first bill was not excessive. The defendant admitted that no fees had been agreed upon, and said that his salary was Rs.80 a month, but that his mother, wife, and child were dependent on him and he wished to pay by small instalments. In other words, he did not deny his liability or dispute the correctness of the amount which the plaintiff claimed. The judicial commissioner held that the Agra case, of which the full report was not available, could not be followed, for it was decided by the old High Court of Agra between 1886 and 1888, and there was no means of knowing what the sum there claimed by the plaintiff was, or what the defendant's income was, though it was known that the remuneration for a year's attendance was claimed, and that was not at all what the plaintiff sued for. The only point of resemblance would seem, he said, to have been that no agreement had been come to, expressly, about the fees to be paid. The commissioner pointed out that a medical officer in the position of the plaintiff was a technical expert who had gone through a long and expensive course of training and his services were deserving of proper remuneration. The sum of Rs.4 for his visits was inadequate. His honour said the plaintiff's claim of Rs.16 per visit was reasonable. While he did not approve the plaintiff's modified bill, he did not consider the circumstances justified the court in refusing the costs to plaintiff, who was under no obligation to accept the part payments, while the fact that he only claimed Rs.32 showed his explanation of the modified bill to be correct. With respect to the decision in the Small Cause Court he found the judge's remarks on the plaintiff-applicant's conduct unjustifiable, he had failed duly to consider the facts, and his judgment was not in accordance with law. The decision of the lower court was therefore set aside, and the defendant was ordered to pay Rs.32 to the plaintiff by monthly instalments of Rs.10, with costs.

Remarkable Plural Birth.

A case of plural birth occurred near the Malagumuda Orphanage, Zuckalay, Travancore. The woman is 25 years of age, and is a Shanar by caste. She gave birth to five female children on the night of June 23rd.

Cholera in Ceylon.

According to the latest information, cholera is spreading on up-country estates in Ceylon, and there have been a number of fatal cases. The disease has been brought from the Indian coolie camp at Mandapam by the new route.

July 20th.

Correspondence.

"Audi alteram partem."

ANTITYPHOID INOCULATION IN WAR-TIME.

To the Editor of THE LANCET.

SIR,—With the permission of Sir Arthur Sloggett, Director-General of the Army Medical Department, I beg to ask the hospitality of your columns in the following matter.

Antityphoid inoculation remains, unfortunately, on a voluntary basis in our Army, and it is only possible to secure the benefit of its protection to our troops by persuading the officers and men, first, of the reality of the danger of typhoid fever, and, secondly, of the protective value of the vaccine. Needless to say, no efforts are being spared by the Medical Department of the Army to give effect to Lord Kitchener's strongly expressed wish that as many men as possible should be inoculated, with due regard, naturally, to the exigencies of the military situation. Steps have already been taken to impress this upon all concerned with the medical care of the Home Forces, as had already been done in the case of the Expeditionary Force. Many, however, of the medical officers of the Territorial Force, as well as the newly enrolled civil surgeons, are less familiar than R.A.M.C. officers either with the danger of typhoid in epidemic form, to which the Home Forces will most certainly be exposed, or with the high protective value of antityphoid inoculation. I have no doubt that these officers, and also members of the profession outside the ranks of the Army, will be consulted on the subject by many who are in doubt as to the value or the necessity of the process. In such cases I venture to appeal for the strong support which it will be in their power to give to the efforts we are making to secure the protection of the Territorial Force.

The facts relating to inoculation and its results have been widely published in recent years, and the pronounced benefits and harmless nature of the procedure are admitted by all who have had experience of it. I may, however, refer to a few points which, although well known to army surgeons, are less familiar to others. 1. No army in recent wars has escaped typhoid, which, in several campaigns, has killed more men than the enemy. In the South African war, for instance, there were 57,684 cases of typhoid, of which 19,454 (33 per cent.) were invalided and 8,022 (13·9 per cent.) died. The deaths from typhoid exceeded the total number of men killed in action. 2. It would be most rash, in the opinion of those who have studied the question, to assume that the forces serving at home will not be exposed to the dangers of typhoid in epidemic form. 3. The benefits of inoculation are so well recognised in the Regular Forces that we find little difficulty in foreign stations in securing volunteers for inoculation; for instance, about 93 per cent. of the British garrison in India have been protected by inoculation, and typhoid fever, which used to cost us from 300–600 deaths annually, was last year responsible for less than 20 deaths. 4. Inoculation was made compulsory in the American army in 1911 and has practically abolished the disease; in 1913 there were only three cases and no deaths in the entire army of over 90,000 men.

The organisation for the preparation and distribution of the vaccine should be equal to all the demands made upon it. In view of the possibility of such an emergency as has now arisen, arrangements were made some years ago at the Royal Army Medical College to prepare and maintain a very large reserve of the vaccine, and from this reserve we have been able to issue, since mobilisation, more than 170,000 doses for the use of the troops. The vaccine department at the Royal Army Medical College, under Major D. Harvey, will continue for the present the preparation of the vaccine, and we are also fortunate in receiving most generous and valuable assistance from the staff of the Lister Institute and from Sir Almroth Wright. The ideal of universal protection is, I fear, too much to hope for, but with the support of the profession, on which I feel sure we may count, we may hope to save many valuable lives and to minimise one of the gravest causes of depletion of the fighting force.—I am, Sir, yours faithfully,

W. B. LEISHMAN,
Colonel, R.A.M.C.

War Office, August 16th, 1914.

THE PRESCRIBING OF NARCOTIC DRUGS.

To the Editor of THE LANCET.

SIR,—The remarks upon the prescribing of narcotic drugs in your leading article in THE LANCET of August 15th are well inspired. It is more than time that new regulations were introduced in this country to check the indiscriminate distribution of drugs to the public. Personally I maintain that no drug of any kind should be dispensed save on production of a prescription written and signed by a medical man. The incalculable harm occasioned by the use of drugs unauthorised is only known to those who, like myself, have made somewhat extensive observations on the subject. Within the last decade I have come across people who were using, without medical advice, the following drugs amongst others: phenacetin, digitalis, nux vomica, pulv. ipecacuanhæ, co., calomel, thyroideum siccum, aspirin, salicylate of soda, bromides, iodides, tr. chloroformi et morphinæ co., tinct. opii, preparations of squills (commonly given to infants), sulphonal, veronal, chloral hydrate, and tinct. belladonnæ. The ease with which these drugs can be obtained by the man in the street is a national scandal calling for instant check.

In writing prescriptions even for quite harmless remedies I am in the habit of appending my signature, and not merely my initials, as the latter do not necessarily convey to the pharmacist the knowledge that a duly qualified person has written the prescription. This practice I teach to students, and also impress upon them the necessity for *writing across* any prescription that should not be repeated the necessary words to that effect. Many to whom I have spoken on the subject have scoffed at my "unnecessary carefulness," but the time has come when probably my teaching will receive recognition in high quarters, and my opponents will be forced to fall into line with a practice which I have adopted ever since I was in a position to prescribe for the sick. Surely too great care cannot be taken for the safety of the public, and your valuable leading article on the subject will help to rouse the profession from their lethargy regarding the need for care in the writing of their prescriptions in future.

I am, Sir, yours faithfully,
JAMES BURNET, M.A., M.D., M.R.C.P. Edin.

Edinburgh, August 18th, 1914.

ORAL SEPSIS AND THE EXTRACTION OF TEETH.

To the Editor of THE LANCET.

SIR,—It was not my intention to raise a controversy, but to call in question only a dangerous line of practice that seemed to me to be developing, so I do not think it necessary, or even desirable, to make any detailed reply either to Mr. J. G. Turner or Mr. F. St. J. Steadman, who alone have criticised my letter to you adversely. But I would like to say this to make my exact position clear—that each of these gentlemen seems to me to hold that pyorrhœa is a common disease, an insidious one, easily overlooked, yet associated with definite changes in the bones, and that it leads to septic intoxication. If what I in my ignorance call gingivitis they call pyorrhœa alveolaris, so be it. My essential point is, however, is it the cause of septic absorption, and is it worthy of the extraction of the teeth in bulk?

Now I will admit Mr. Steadman's impeachment that I have no pretension to being an expert in dentistry, but I am already too familiar with the term "pockets" which both he and Mr. Turner speak of, and I am always on the look-out for them in my poor non-expert way, and I should suppose that anything worthy of such a description should contain pus, exuding under pressure such as the eye could see. Yet neither to my sight nor to pressure of the finger along the gums have I been able to detect this in a considerable number of cases. I certainly "have not taken the trouble to wrap a wisp of cotton-wool round a very thin bristle, and gently passed it round each tooth to find them," nor have I "warmed the bristle after withdrawing it, and held it under my nose." I am quite sure that the teeth of very few of us would stand that test; indeed, if that be my critic's criterion of pyorrhœa alveolaris I can only suppose that he has already immolated all his own ivories and been exceptionally happy in the set of "made-at-homes" with which he has supplied himself. To one not an expert it seems more reasonable to hold that so long as teeth are good, firm in their sockets, free from pain, and serviceable for easy mastication, there is something to be said on the side of keeping our own rather than taking to others that we know not of. We seem to be far too ready to jump from the latest hypothesis of oral sepsis to the proof thereof. The changes said to occur in the bone in these cases, for example, have they been clearly distinguished from those that must exist in company with retrocession of the gum?—an exceedingly common condition that carries with it usually no sign of sepsis.

Again, what adequate evidence is there to prove that "the ulceration of pyorrhœa not found patent on the edges of the gums, but hidden on the tooth-ward side of the gum flaps, that help to form the pockets of pyorrhœa"—if it exist—"frequently gives rise to gross joint lesions, and many other maladies too numerous to mention." I do not deny it; all I ask for is evidence. Effects from certain causes are too readily assumed. When first the oral sepsis explanation of pernicious anæmia was announced there was the usual hue and cry. How far has it been substantiated? I have seen many a case of pernicious anæmia since then. I cannot record one—I had seen one such before—where attention to the teeth has had any certain effect upon the disease, and it can be but seldom that the suggestion can have helped to its cure.

I am, Sir, yours faithfully,

August 16th, 1914. JAMES F. GOODHART.

To the Editor of THE LANCET.

SIR,—As a contribution to the discussion relating to this subject now raised in your columns I should like to mention a case seen by me four years ago. The patient, a lady of a lifetime of imaginary disorders, drew my attention to the fact that she had undergone extraction of her entire set of teeth since I had seen her a year previously. On further inquiry she informed me that her dentist, whom she had consulted for some trivial dental trouble, had informed her she was suffering from "Rigg's disease," and that it would be necessary to extract all her teeth. Her imaginary ailment at the moment was colitis; this she was assured was caused by "Rigg's disease," and in the event, and with the sanction of her medical attendant, she was rendered edentulous. She assured me with pride that her teeth when drawn were perfectly sound, and I have no doubt they were.

The impression made on my mind at the time was that I had never in a lengthy and varied experience seen so cruel and unwarrantable a procedure under the guise of treatment. In the name of a disease which was not present she was subjected to this outrage for the relief of a condition which was non-existent. It is to be hoped now that the subject has been called attention to under the authority of Sir James Goodhart's name that this form of malpraxis may cease.

I am, Sir, yours faithfully,

C. KNOX BOND, M.R.C.S.Eng., L.R.C.P.Lond.

Builth Wells, August 17th, 1914.

TUBERCULOSIS SOCIETY.

To the Editor of THE LANCET.

SIR,—Recent letters received by the honorary secretary and myself show that, in spite of some recent correspondence in your columns on this matter, the aims and objects of this society are not sufficiently known to those groups of practitioners from which the membership of the society is drawn. The formation of the Tuberculosis Society was a natural outcome of the development of the Tuberculosis Service. In 1910 a small clinical society was formed in London whose members for the most part were medical officers to tuberculosis dispensaries and to sanatoriums. The rapid development of the Tuberculosis Service throughout the country led to the formation of a larger society in 1912.

The work of the Tuberculosis Service is so special in itself that the need of a separate society was at once apparent. The aim of the Tuberculosis Society is to provide a medium for the exchange of experience, for conference, for discussion of points arising in the course of the work both clinical and administrative, and to safeguard and protect the interests of tuberculosis officers and of the Tuberculos Service. Meetings are held in London on the thir Saturday of every month from October to June At these meetings papers on various aspects of th work are read and discussed, being published late in the quarterly Transactions of the society. Thre times a year the society travels to different pro vincial centres, where meetings are held for th benefit of members in the provinces.

At the annual meeting the office-bearers an committee for the year are elected. The honorar Presidents of the society are Sir Robert W. Philip an Sir William Osler, and the honorary Vice-Presidents include Dr. Arthur Newsholme, Dr. J. Edward Squire and Dr. Vincent Bowditch, of Boston. At a recent meeting of the society held in the Town Hall of Leeds, and attended by over 50 tuberculosis officers from various parts of the country, it was recommended that the annual meeting of the society be held at the same time and place as the annual conference of the National Association for the Prevention of Consumption. The subscription is 10*s*. entrance fee and 5*s*. per annum.

The work of this society during the past year may be briefly indicated. Papers were read and discussed on such varied aspects of tuberculosis as the X Ray Diagnosis of Early Pulmonary Tuberculosis, the Surgery of Pulmonary Tuberculosis, the Present Position of Tuberculin Treatment, the Growth of Legislation Affecting Tuberculosis, a Case of Acute Miliary Tuberculosis with Macroscopic and Microscopic Specimens, and the Future of the Tuberculosis Service. During the past year matters affecting the status and position of the Tuberculosis Service have occupied a considerable portion of the time of the society, whose present membership includes over 100 tuberculosis officers. As a result of recent meetings attended by tuberculosis officers from all parts of England, a memorial in the following terms was drawn up, approved, and has been submitted to the Chancellor of the Exchequer and to the President of the Local Government Board.

Memorial.

Your Memorialists represent the Tuberculosis Society. The Tuberculosis Society is a body including in its ranks Tuberculosis Officers appointed to County Councils, County Borough Councils, and the Metropolitan Borough Councils in England, and to County Councils and Town Councils in Scotland, and also Medical Officers to sanatoriums, farm colonies, and hospitals for advanced cases. The newly constituted Tuberculosis Service consists of medical men engaged in the diagnosis, treatment, and prevention of tuberculosis under public bodies.

For the proper discharge of the duties, which recent legislation in relation to tuberculosis demands, special training and experience are essential. An endorsement of the view that Tuberculosis Officers should be specialists in the work is to be found in the recommendations of the Departmental Committee on Tuberculosis, 1913.

The Local Government Boards have endorsed generally the recommendations of the Departmental Committee and proceeded on the view that these officers are to be regarded as an independent service so far as their clinical duties are concerned, and shall be responsible for the management of institutions to which they are attached.

It seems to your memorialists most important that from the outset a satisfactory status and security of tenure should be insured. Without this it will be difficult to induce the best class of men to enter a service for which years of special training are required. Your memorialists consider it necessary to emphasise the fact that the tuberculosis service is mainly clinical in its duties, and does not therefore naturally lead on to transference to the ordinary administrative posts in the Public Health Service. To regard the Tuberculosis Service as a subsidiary branch of the Public Health Service would be to discourage special training in a department which constitutes one of the largest fields in clinical medicine.

In some other departments of State Medicine, such as the lunacy and prison service, security of tenure and superannuation have been ensured for officials of the same standing as members of the Tuberculosis Service. A claim for the extension of such treatment on the part of medical officers of health and sanitary inspectors has recently been submitted to and friendly received by the Treasury and the Local Government Board.

Your Memorialists respectfully submit that the Tuberculosis Service has a similar claim to security of tenure and to superannuation, and that such a claim is in the highest interest of an important public service, and is entirely reasonable in respect of those who have entered or may enter this special department.

Halliday Sutherland, M.D., President.
W O Pitt, M.D., D.P.H., Tuberculosis Officer for Essex ; Honorary Secretary of the Tuberculosis Society.

The policy of the society may be taken as definitely expressed in the terms of this memorial. Tuberculosis officers and other medical practitioners interested in the development of this policy and the establishment on sound lines of an efficient tuberculosis service throughout the kingdom are invited to communicate with Dr. W. O. Pitt, honorary secretary, 66, Upper Walthamstow-road, Walthamstow, Essex, with a view to joining the society.—I am, Sir, yours faithfully,

Halliday Sutherland, M.D. Edin.

15, Allsop-place, Upper Baker-street, N.W., August 7th, 1914.

THE RELATION OF FISH TO LEPROSY IN NORTHERN NIGERIA.

To the Editor of The Lancet.

Sir,—In a valuable article by Dr. B. J. Courtney, West African medical staff, published in The Lancet of June 27th, on the Treatment of Leprosy by Intravenous Injections of Iodoform in Sokoto Province, Northern Nigeria, the author draws attention to the history of fish-eating in all his cases, and further refers to the native ineffective method of smoke-curing of fish as tending to support the well-known theory of the late Sir Jonathan Hutchinson in regard to the cause of leprosy.

I was stationed at Sokoto in 1910–11 and studied the prevalence and distribution of leprosy in that part of Nigeria. The results were published in the Northern Nigeria Medical Report, 1910, an extract appearing in the *Journal of Tropical Medicine and Hygiene*, March 1st, 1912, and if near the truth showed that the proportion of lepers to population in Sokoto Province greatly exceeds that reported in most countries where figures are obtainable, with the exception of some of the Pacific Islands. The calculated figure for the province was 52 per 10,000. Dr. Courtney is correct in stating that in the native view "not every kind of fish can convey leprosy, but only certain kinds." It might be added that fish is only one of very many causes of leprosy in native belief, whether in Sokoto or in other parts of Nigeria.

Without wishing to oppose the dried fish theory, I do not think that the native idea necessarily affords any support thereto. I have never found that either Mohammedan or pagan tribes in Northern Nigeria ever attribute leprosy to the eating of their universally known commodity, smoked fish, unless the latter be of a variety which is under suspicion even when fresh.

The two points which are of interest and which might be of value as a guide to research are as follows: 1. While all beliefs incriminate a variety of foodstuffs, along with other less substantial agencies, fish of one or a few defined species is common to all. It is not dried fish that is feared but the particular species. In the above-mentioned memorandum I have stated that in Sokoto a right-minded person of sufficient authority, seeing the culpable variety of fish exposed for sale, will confiscate and destroy it. 2. In most cases definitely brought to my notice the species could be attributed to the scaleless family of *Siluridæ* or catfishes (in the original paper I had recorded the species erroneously as barbel). It is possible, however, to over-estimate the importance of this as a guide, for the native mind which associates the white spots and stripes of the bush-buck with the leucodermatous patches of the leper, and therefore puts a tabu on the flesh of this antelope unless the hunter is protected by a charm, may be equally suspicious of the smooth, slimy, and often maculated skin of the catfish.

Further, probably all Hausas associate with leprosy the smooth-skinned lizard or skink, *Mabuia perrottetii*, and in Sokoto, where the catfish idea is particularly restricted to two or three definite species, one of the latter is simply supposed to be the transformed lizard. Although I have expressed a doubt as to whether the native mind connects leprosy with smoked fish, I none the less think that Northern Nigeria contains the materials for a very useful investigation as to the truth of the late Sir Jonathan Hutchinson's views and the fact that, although some 30 species of the *Siluridæ* are already known from the basins of the Niger and Benue within the confines of Northern Nigeria, only a few are under suspicion by the native tribes, might possibly help to focus the inquiry so far as fish are concerned.

I am, Sir, yours faithfully,

John M. Dalziel, M.D., B.Sc.Edin., D.T.M. & H.,
Senior Municipal Sanitary Officer.

Lagos, Nigeria, July 28th, 1914.

INEBRIETY AND INSURANCE COMPANIES.

To the Editor of The Lancet.

Sir,—Two cases have recently come to my personal knowledge showing the extraordinary methods of insurance companies with regard to claims made upon them by persons who have voluntarily placed themselves under treatment for inebriety.

In the first case, a patient while in residence in an inebriate sanatorium, when in perfect physical health, probably better health than he had been in for years, and when he was perfectly sober and had been a total abstainer for three months, sustained an injury by a fall in a boat while trout fishing. The insurance company, learning from the address on the notepaper and from the signature of the doctor that he was a patient in an inebriate sanatorium, refused utterly to pay the claim, although the patient had paid 12 years' premiums, and had made in that time only one small claim, which latter, made when he was living an intemperate life, was paid without question.

The second case is that of a patient in the same sanatorium who was insured and whose candidature was accepted when living an intemperate life, and who on going to a sanatorium forfeited his policy by doing so. Both these persons by going to a sanatorium lessened, if they did not entirely remove, the risk of death or injury due in any way to alcohol, and their reward is that both are informed that the entry into such sanatorium renders their policy void. Persons are constantly accepted by insurance companies for life and accident policies who are, to say the least of it, intemperate as regards alcohol, and yet when one of these appreciates his danger and sets about curing himself of his intemperance, the insurance companies promptly on acquirement of the knowledge deprive him of benefits. I think, Sir, it is time this matter was aired and better attention given by insurance companies to intemperance among their policy owners. Both the persons mentioned here are far better lives to-day when the companies see fit to cancel their policies than they were when their applications were accepted.

I am, Sir, yours faithfully,
J. W. ASTLEY COOPER,
Medical Superintendent, Ghyllwoods Sanatorium.
August 10th, 1914.

THE TECHNIQUE OF ARTIFICIAL PNEUMOTHORAX.

To the Editor of THE LANCET.

SIR,—May I again ask your indulgence in order to answer further criticisms of my paper in THE LANCET of July 11th on the technique of inducing artificial pneumothorax?

The only observation of importance is that made by Dr. Claude Lillingston in your issue of July 25th, who reminded me that in operating for the first time a false pneumothorax might result, and that this is more likely if the gas were free to flow (though not necessarily flowing) from the reservoir as the needle passes through the tissues. In this connexion I was at first undecided which of two courses to recommend in my paper—(1) that of allowing gas to be free to flow from the beginning, or (2) that of turning on the gas as soon as a negative pressure, even without oscillations, is indicated by the manometer. I finally decided on the first because, as a result of experience, I came to the conclusion that the operator would immediately recognise a false pneumothorax from the irregularities in the pressure rendered obvious when the two-manometer method is used. Still, I am not prepared to maintain that the second course is not a proper one, and if it were adopted clearly Dr. Lillingston's objection would disappear. But what I do maintain is that in the case of first injections to insist on ample fluctuations before turning on the gas is practically to insist on making air leak from the lung into the pleural cavity. Dr. Clive Riviere, in his letter in your issue of August 8th, begs the question when he says that he "would still oppose theory with fact and retort that ...... this fluctuation occurs under conditions where leakage from the lung cannot really be held to occur." I would ask him on what grounds he says that leakage cannot be held to occur. The other points raised have reference to the apparatus. Mr. W. C. Rivers remarks in your issue of August 1st that "it is unlikely, until insular experience is a good deal greater, that British workers will succeed in wiping their (continental workers') eye." Mr. Rivers's unworthy argument is almost complimentary.

I am again compelled to disclaim the advantage which Dr. Riviere persists in seeing in my manometer—that is, one in which the open limb is a reservoir, in the case where such a manometer is compared with one in which the two limbs are of equal bore. Since in the first the level of the fluid in the open limb remains practically the same, a fall of the level of the fluid of 10 cm. in the closed limb indicates a rise of pressure of 10 cm., whilst in the other, such a fall, being accompanied by an equal rise in the open limb, indicates a rise of pressure of 20 cm. Thus, where the same length of manometric tubing is used for both, my manometer would, without the movable reservoir of the open limb, have a range of pressure half that of the other.

Finally, Dr. Riviere, in criticising adversely the two-manometer method, a method which he has not tried, says that he is "still in the hopeless condition of considering the single manometer an extremely satisfactory instrument." Even if this were admitted, does he not here display precisely the same spirit as those pioneers who rejected even a single manometer? When such a spirit exists discussion is futile.

I am, Sir, yours faithfully,
London, W., August 15th, 1914. WM. PARRY MORGAN.

GUN DEAFNESS AND ITS PREVENTION.

To the Editor of THE LANCET.

SIR,—Mr. F. Rogers, of 327, Oxford-street, London, W., after working upon various materials has succeeded in producing ear plugs which, so far as I have tested them, meet all the requirements mentioned in my article on Gun Deafness and its Prevention, published in THE LANCET of August 15th. Whilst counteracting the injudicious effects of loud and sudden noises upon the ears they do not prevent hearing. They will be of service not only for the purpose for which they have been especially made, but also to invalids and others desirous of escaping from disturbing noises.

I am, Sir, yours faithfully,
London, W., August 16th, 1914. JOBSON HORNE.

"ENCYCLOPÆDIA MEDICA."

To the Editor of THE LANCET.

SIR,—Since writing to you last in reference to the manner in which Messrs. Green and Sons advertise their "Encyclopædia Medica," a new prospectus, dated July 14th, has been issued by this firm. It professes to contain "a list of contributors to the first edition, with the addition of the names of those who have so far agreed to contribute to the second." It is hard to believe, but it is a fact, that my name is included amongst these, in spite of my previous letters to the medical press on the subject, and in spite of the fact that Messrs. Green have not yet asked for my permission or consent. I have written to them and their answer begins: "We have your letter, and thought this matter had been adjusted previously, and cannot understand why you should have written to us as you do.' The letter then goes on to ask whether I am prepared to revise or to refuse to revise my articles for the new edition, and the final sentence reads: "That every contributor, *so far as we know*" (italics are mine) "is going to revise." This statement does not appear to agree with the statement from the prospectus, which I have already quoted.

It will be interesting to know how many of the contributors in this prospectus have actually agreed to revise, or have only agreed in the mind of Messrs. Green.—I am, Sir, yours faithfully,

HENRY JELLETT.

Rotunda Hospital, Dublin, August 15th, 1914.

RED CROSS AND VOLUNTARY AID DETACHMENTS' WORK.

To the Editor of THE LANCET.

SIR,—The work of the Red Cross Society and the voluntary aid detachments throughout the country is threatened at its outset by the same confusion that so crippled the Red Cross work in the Boer war. Important letters have appeared in the press from Lord Rothschild and others who speak with authority. Private houses and public buildings are being turned into hospitals and convalescent homes without consideration for any organised scheme or for their geographical position. The number of buildings offered and prepared is far in excess of the funds or the personnel at the disposal of the Red Cross Society or any other bodies. In the case of the voluntary aid detachments it is to be feared that their zeal outruns their performance. The detachments vie with each other in providing accommodation to an extent which will neither be required nor could be maintained from private subscription if it was required. The whole of this complicated work lacks organisation and central control.

This confusion arises largely from the fact that many of the Territorial associations insisted upon taking the work out of the hands of the Red Cross Society just at the wrong moment. If the society had been left alone for another year they might have coördinated the work and the finances of the "V.A.D.'s" within each county area; but the Territorial associations have many of them insisted on forcing the detachments away from the Red Cross Society, and have afforded neither constructive nor financial assistance, and have as yet done nothing to organise the efforts of units widely scattered, unequally financed, and often in mutual competition.

The evil can only be remedied by the immediate formation of a capable staff in each area, not hampered by any other work. It is impossible at this juncture to leave such organisation in the hands of busy general practitioners. Such a staff should include architects or sanitary engineers, medical officers of health, and retired R.A.M.C. officers of experience. It is certainly not too late to put this matter on a proper footing, and to lessen further extravagance and waste of energy.

I am, Sir, yours faithfully,

August 19th, 1914. V.A.D.

THE PUBLIC HEALTH OF BELFAST.—Application has been made to the Local Government Board to sanction a supplemental loan of £6000 in connexion with the additions to the Purdysburn municipal fever hospital and nurses' quarters. A sum of £2180 has been overspent in connexion with the loan of £25,000 for additions to the hospital, and the sum of £2820 was in respect of the nurses' quarters, making a total of £6000. For the five weeks ended July 18th the total death-rate in Belfast from all causes was 16·4, while the mortality from zymotic diseases was 2·7 and from chest affections 4·2. Among the infectious diseases notified between June 14th and July 18th, out of a total of 189 cases there were 138 of scarlet fever, which seems now to be almost endemic in Belfast, it has prevailed so many years. For the new Central Tuberculosis Institute the ground about to be cleared by the Belfast corporation at the corner of Durham-street and College-street West has been recommended as a central site.

THE WAR.

A TRIUMPH OF NAVAL AND MILITARY ORGANISATION.

Now that the veil of obscurity that for nearly a fortnight has hung over the movement of the British Expeditionary Force has been lifted, and we can realise the great success achieved by silence in the despatch and safe arrival at the appointed spot of that force "without a single casualty," the wisdom of the policy of secrecy, trying though it be in such a state of national tension, will be fully grasped. Assuredly, both the nation have behaved with praiseworthy bravery and restraint, in spite of word of mouth forebodings of concealed disaster, and the press have loyally played their part. The authorities, and especially Lord Kitchener, whose genius for military organisation has been so frequently and abundantly displayed, have earned both the confidence and the gratitude of the nation; and in view of the distinct pledge given that no news of victories or reverses shall be unduly kept back, we may hope that, as heretofore, unauthorised depressing suggestions will be met with equanimity.

GOVERNMENT AND THE RELIEF OF DISTRESS.

A further official communication from the Local Government Board, dated August 17th, urges that all funds locally raised for the relief of distress should be forwarded in the first instance to the National Relief Fund, which will be available wherever needed throughout the country. Local committees should confine relief as far as possible to ordinary residents, but with care not to interfere with mobility of labour. Local action may in some cases suffice to adjust difficulties arising from dislocation of trade; in other cases the intervention of a Government department may be necessary. The Board suggests that there should be one central register, on the card index system, of assistance for the area covered by each local committee or subcommittee, the register to comprise four groups: (1) persons in receipt of poor relief; (2) persons registered by the distress committee, if any; (3) persons dealt with by the Soldiers' and Sailors' Families Association; and (4) all other applicants. In determining the question of assistance to be given in any case committees should have regard to all the circumstances of the applicant. They should ascertain: (1) applicant's ordinary occupation; (2) dependants; (3) the Approved Society to which insured persons belong and their numbers in that society, or, if a deposit contributor, his number; (4) whether registered at labour exchange; (5) special qualification or experience for any class of work; (6) date and place of last employment; and (7) any source of income. They should obtain and record any sickness or disablement benefit, meals given to school children, unemployment benefit, half-pay or other assistance from employer, or aid from charitable funds, in a manner which will not appear unduly inquisitorial. The committee should not itself set up anything in the nature of a Labour Exchange for supplying men to employers in localities where the Board of Trade Labour Exchanges are established. It is suggested that cards of different colours be used for men and women, the same as those used by the Insurance Committees—viz., white for men and blue for women, and for Army or Navy cases red cards.

The particulars in the first part of the front of the card should be obtained from the applicant himself. With regard to sources of income, some, if not all, of the particulars may be obtained from Approved Societies, local education authorities, and other bodies concerned. The manner in which the case has been dealt with and the dates will be recorded on the back of the card. Relief works should not be opened or recourse had to the distribution of relief funds until other means of dealing with distress have proved inadequate. Local authorities within the area of the committee should realise the importance in the national interest of proceeding steadily and continuously with the ordinary public works for which provision has already been made in their estimates. The Road Board will be notified by the Local Government Board of districts in which special provision in excess of the ordinary should be made for road work, and the Road Board are prepared to make grants in those districts towards excess expenditure on the general work of road improvement. Invitations for applications for grants will be issued by the Road Board as soon as selected districts have been notified to them. On receipt of such a notification the Road Board will communicate with the road authority of the area concerned. The Local Government Board would offer no objection to the establishment and incidental expenses of the committee being defrayed out of local rates, but the committees will no doubt largely avail themselves of voluntary aid. It will be obvious that the burden of these instructions is the very salutary one of concentration and centralisation of all endeavour. Individualism in great crises spells, if not disaster at least pitiable waste. A multiplicity of small agencies is fatal. The large funds, the central organisations must be supported. Energy diffused is energy impotent. Only when it is controlled and directed by competent central coördinating authority can it become an effective force.

THE MAINTENANCE OF SANITARY SERVICES.

The Local Government Board has issued a circular drawing the attention of local authorities to the great importance of maintaining the efficiency of the sanitary service of the country at the present time. In many areas the medical officers of health and other officers engaged in public health work will be giving their services to the navy or army, and it will be necessary for the local authority to make other arrangements for carrying on their work. It is essential that there should be no relaxation of the activities of local authorities in the prevention and control of epidemic diseases, the protection of water-supplies from contamination, and the promotion of child welfare, and in securing the wholesomeness of food supplies and the general sanitary condition of each area. On this account it is important that all vacancies in the minor sanitary staff should be filled up. The actual steps which may be open to local authorities to replace medical officers of health who are absent on naval or military duty will vary in different districts. In many areas adequate temporary arrangements may be made by coöperation between the county and district authorities or between neighbouring district authorities. The Board will be glad to be informed of each case in which a medical officer of health or chief sanitary inspector or inspector of nuisances has been given leave of absence for naval and military service, and of the steps taken to arrange for the temporary discharge of his duties.

THE SHORTAGE OF DRUGS.

The war with Germany is making us realise acutely how dependent we are upon that country for the supply of drugs. Practically the whole range of synthetics useful as antiseptic, antipyretic, and analgesic agents are of German manufacture, and besides there are the alkaloids, the salicylates, and the whole of the potash salts. Naturally, the question has arisen as to whether in such a crisis we cannot usefully begin to manufacture these products for ourselves. Some of them we undoubtedly can, and it is to be hoped that English manufacturers will show spirit and seize the opportunity. The chief difficulty will be in obtaining raw materials, of some of which Germany has hitherto had an exclusive supply. The Government can afford facilities for bringing some of this immense industry to this country. We have plenty of trained chemists who can be just as skilled as the German chemist in the art of producing fine chemicals. It is an interesting fact to consider now that so many of the chemical products of German manufacture had their origin in British genius. We invented, but the Germans applied. The anilines is the case in point which is always quoted, but it is not a solitary instance. Before we can take over manufacturing drugs ourselves on any scale certain facilities will be needed, and one in particular will be the relief of the duty on alcohol when used for manufacturing purposes. This tax has heavily handicapped English manufactures in the past, and its removal should now appeal to our Government. The great progress made in Germany in the manufacture of drugs and fine chemicals has been due largely to the abundant supply of alcohol for use in the great refining and recovery processes concerned. The removal of the duty on alcohol used for manufacturing purposes is, we think, bound to be the first step when contemplating the manufacture of drugs in this country on any appreciable scale.

The Government have appointed a Medical Committee to consider the supply of drugs for curative purposes in the United Kingdom, with special reference to the ways in which the medical profession can assist in effecting economies. The following members have been appointed to the committee:—Chairman, Dr. J. Smith Whitaker; Sir Thomas Barlow, Sir T. Lauder Brunton, Dr. A. Cox, Dr. E. Rowland Fothergill, Dr. B. A. Richmond, Dr. F. J. Smith, and Dr. W. Hale White. Dr. E. W. Adams, medical officer of the National Health Insurance Commission, late lecturer in pharmacology, University of Sheffield, will act as secretary to a professional and scientific body upon which the National Health Insurance Commission, the Royal College of Physicians of London, the British Medical Association, and medical practice, panel and non-panel, are well represented.

THE BRITISH RED CROSS SOCIETY.

The Ambulance Department of the Order of St. John of Jerusalem forms part of the Red Cross Organisation of Great Britain, equally with the British Red Cross Society and the St. Andrew's Ambulance Association, and is recognised by the British Government under Article 10 of the Geneva Convention as a Society to assist the medical services in time of war. Funds are urgently needed, as already over 4000 men of the St. John Ambulance Brigade have been mobilised as hospital rderlies with the Navy and Army, several thousands ore being held in reserve. Surgeons and a large umber of fully certified hospital nurses have been espatched by the Ambulance Department to elgium at the request of the Belgium Red Cross ociety.

The British Red Cross Society is organising its esources to afford effective coöperation with the ilitary medical forces both at home and abroad. n August 15th, on the request of the Belgian overnment, a party consisting of 10 surgeons and 0 dressers, with 20 nurses, left Charing Cross for elgium. Major the Hon. R. White escorted the arty to hand it over to the Belgian authorities. rom Guy's Hospital a detachment of 4 sisters nd 10 nurses left for the front on August 17th. t home committees of the society have been ormed as follows:—Arrangements for the transport f Red Cross assistance to our allies: Major the on. R. White. Auxiliary Home hospitals: Dr. dward Stewart. Convalescent Homes Joint Comittee, with the Soldiers' and Sailors' Help Society: rincess Christian, Sir Rowland Bailey, Lady orthcote, Major-General Lord Cheylesmore, Major udor Craig, F.M. Lord Grenfell, Georgina Countess f Dudley. Distribution of medical and general omforts to home hospitals: Mr. Horace Folker, r. H. W. Laurie. Finance: The Hon. N. C. othschild, Mr. E. A. Ridsdale. Hospital and mbulance ships: Sir Frederick Treves, Dr. Edward tewart. Hospitals and Red Cross assistance broad, stores, equipment, and staff: Sir Anthony owlby, Lady Perrott. Medical comforts and eneral gifts of stores: The Hon. A. Stanley, M.P., ady Ampthill, Lady Wolverton. Motor and mbulance transport: Sir Frederick Treves. Office: ir Walter Lawrence. Contributions to the ociety's funds during the week ending August 15th re said to have totalled £25,000, but this is nadequate for the work to be done, and further onations, which should be sent to Devonshire ouse, Piccadilly, are required. The headquarters f the Edinburgh branch are at 2, Frederick-street, dinburgh. Work is being organised for the anufacture of garments of prescribed patterns, escriptions of which may be obtained at headuarters. A War Office communiqué asks the ublic to refrain from turning dwelling houses into mall private hospitals, as the demand for necessary quipment, personnel, &c., is thus unnecessarily ultiplied. Here, as elsewhere, concentration is he necessary policy, and the need for insisting upon this fact is shown by the letter which appeared last week in the *Times* from Lord Rothschild, and no less by the suggestive communication from "V.A.D.," which appears in another column, who begs for the exercise of central control over much badly directed benevolence.

As far as London is concerned, the County of London branch is inundated with offers of private houses, and several of them have been selected to be recommended to the War Office. But it is not houses that are wanted, it is money at this juncture —money to equip subsidiary hospitals, money for buying flannel which willing hands cut up into shirts and pyjamas, bed-jackets, and dressing-gowns; also money for postage. There are 1200 voluntary members in London who for some years have been trained under doctors and nurses to supply the needs of the Territorials, and hundreds of recruits are offering themselves every day, but money must be obtained. This is one of the great chances of help which can be afforded by those who have not been trained for personal service. Kit bags of clothing and blankets for the sick and wounded sailors and soldiers may be sent to the Stores Department, 83, Pall Mall, S.W., to be warehoused until wanted. Subscriptions and donations should be sent to Devonshire House.

THE ENGLISH CONJOINT BOARD.

In view of the Royal Colleges having determined to hold a special Final Examination, commencing on Sept. 8th, to meet the exigencies of the situation demanded by the war, it has been decided to admit candidates to such examination under the following conditions:—

1. All candidates who would be eligible for admission to the October examination shall be considered admissible to the special examination in September.
2. Candidates who were referred for three months at the July examination will be admissible to the special examination in September without producing certificates of additional study.
3. Candidates who fail at the special September examination may be admitted to re-examination in October by resolution of the examiners on consideration of the standard attained by them.
4. Candidates will be admitted to any part of the examination in September if they have completed the courses of study required for that part, without having necessarily completed the whole curriculum, under the conditions of the Old Regulations, but they will be required to have attended all the courses prescribed by the Regulations before completing the examination.

Candidates who failed in July will be allowed to present themselves for ordinary September first and second examinations without producing additional certificates.

IMPORTANCE OF ANTITYPHOID INOCULATION.—Attention may be directed to the very important letter by Colonel Sir W. B. Leishman, R.A.M.C., appearing in another column, on the importance of antityphoid inoculation among all troops. Even at home stations, at the present juncture, the liabiltty to typhoid fever in armies is well known, and was exemplified with terrible fatality among the troops in home camps during the Spanish American War, as well as in the South African War, to which Sir W. B. Leishman refers. It behoves medical men, therefore, whether territorial officers or civilian practitioners, to make themselves familiar with the established facts in regard to the protective power of antityphoid inoculation, that they may be able convincingly to second the efforts of the military authorities to spread the practice as much as possible among territorial troops and even among the civil populations near whom these troops are quartered. Our special correspondent in Paris notes the huge quantities of antityphoid vaccine that have been prepared there.

FEAR OF CHOLERA ON THE RUSSO-AUSTRIAN BORDERS.—It is inevitable that the fear of all forms of epidemic disease should be before the minds of those more particularly responsible for the efforts to maintain in good health the vast forces now opposing each other throughout the breadth of Europe. Insanitation, privation, physical fatigue, and mental strain are the inevitable accompaniments of war, and their victims are more numerous than the victims of bullet or steel can possibly be, granting the campaign to last more than a few weeks. Somewhere or other along the vast battle front we may be certain that conditions will arise favouring the spread of enteric fever, while on the eastern horizon we have added the fear of cholera. It is, however, of good omen that the epidemic of cholera which visited Russia last year seems, as stated in an article recently supplied to our columns by Dr. F. G. Clemow, C.M.G., physician to the British Embassy at Constantinople and delegate for Great Britain to the International Board of Health at Constantinople, to have come to an end in November. We must not build too much upon this fact, as at least one case has been reported from Kherson on the Black Sea as recently as July 9th, so that in Russia and Austria-Hungary alike the possibilities of an epidemic of cholera must not be lost sight of.

PRINCESS HENRY OF BATTENBERG'S HOSPITAL.—H.R.H. Princess Henry of Battenberg has been lent No. 30, Hill-street, Berkeley-square, by Jeanne Lady Coats, and has placed it at the disposal of the Army Medical Service as a hospital for the reception of wounded officers from both Services. The hospital will be under the personal management of the Princess. Sir Frederic Eve will act as surgeon, and Dr. A. J. Rice Oxley, physician to her Royal Highness, will be medical director.

THE SCOTTISH MEDICAL SERVICE EMERGENCY COMMITTEE.—This committee has been constituted for the purpose of assisting to meet the immediate difficulties, in regard to medical practice among the civil population, which have arisen or may arise owing to the departure of practitioners summoned to take up military duty. It is understood that some 300 Scottish practitioners have been thus called away from their practices, and more are liable to be called for at short notice. In large towns these difficulties are little felt, for the practitioners remaining have willingly undertaken to attend to the work and to safeguard the interests of their absent colleagues. But in smaller places and in rural districts such friendly arrangements are less easily made. Locum tenents are not numerous and the rate of remuneration they expect tends to become prohibitive. To cope with the emergency the committee suggests that the following steps should be taken :—

1. That it should be generally agreed that the fee offered to a locum tenens taking the work of a practitioner engaged in military duty should not exceed 5 guineas a week.
2. That retired practitioners willing to relieve their professional brethren, and so to enable them to serve their country in the field, should send their names to the emergency committee forthwith for registration and ultimate allocation to temporarily vacant practices.
3. That it be suggested to the educational authorities that school medical officers should be permitted to give at least part of their time to general work.
4. That the visiting staffs of large hospitals, infirmaries, and asylums should consent to a reduction of the numbers of their medical residents and clinical assistants, and should themselves undertake a proportion of the work usually assigned to these junior officers.
5. That in the larger towns young practitioners, whose practices are not yet extensive, should in pairs make an arrangement whereby one undertakes the whole town practice for (say) two months, while the other acts temporarily in the country for a third colleague absent on duty; and so alternatively for successive periods.

In these and other ways the committee has reason to believe that a sufficient supply of practitioners for tbe present need could be provided; what is still required is to bring the workers and the work together. The committee is convinced that the profession generally will recognise that the needs of the civilian population must continue to be met, even in the presence of an imperative call for an adequate service in the field; and that whoever relieves a colleague summoned to military duty *ipso facto* is also serving his country in this time of stress. The ordinary agencies for the supply of qualified assistants and locum tenents are in active operation, and they should in the first place be resorted to by practitioners requiring such assistance. The committee does not propose to assume the functions of such agencies. But by furnishing a bureau or "clearing house" for the collection and dissemination of information, on the one hand, regarding districts or practices deprived of qualified practitioners to work them, and on the other hand, regarding practitioners prepared to undertake the duty of supplying such vacancies for a time, the committee is satisfied that a valuable service may be rendered to the profession and the public. The committee is now ready to receive communications from medical practitioners in Scotland who are desirous either of obtaining or of affording professional help in the circumstances above indicated. All such communications should be addressed to the Convener, Medical Emergency Committee, Royal College of Physicians, Edinburgh.

MEDICAL ARRANGEMENTS IN THE NORTH OF SCOTLAND.—In Aberdeen two large schools have been converted into hospitals, the scholars being housed elsewhere. At the Royal Infirmary only the most necessitous are being received; many of the wards are empty and kept ready for casualties, in all 150 beds being available. Arrangements have been made for the temporary staffing of the hospital in the absence of members of the honorary medical and surgical staff called up for military service. Offers of assistance of emergency supplies of provisions in case o any sudden call on the institution, as well as of convalescen homes and motor cars, have been received.

In Banff three large rooms in the Elementary Academ have been equipped as a hospital, the work of the scho being confined to the other two class rooms of the building.

In Dundee 16 doctors who were on the panel have bee mobilised, leaving something like 25,000 patients on thei lists to be attended by their colleagues. The Local Medica Committee have assumed corporate responsibility for thei work, their scheme providing for a central office and a centra dispensary, for which latter purpose the out-patient department of the infirmary will be used. All messages will b sent to the central office, and it is proposed to distribut visits by locality and by rota amongst the doctors willing t participate in the scheme. All the medical men left i Dundee are willing to do their share of the work, and it i estimated that .the mere visits will mean an addition o from 10 to 15 per day to each man's list. At the centra dispensary it was anticipated that six or eight men coul be simultaneously working there, the spells of servic being divided into two hours each. There would be n discrimination between private and panel patients, except in the records, which for insured persons would be white, and for private patients red. Forbearance is asked o patients with regard to the choice of doctor; but in the case of a practitioner attending a patient it would always be the same one.

MILITARY MEDICAL ORGANISATION IN THE WEST: A WELSH HOSPITAL FOR THE WAR.—Following the precedent of the South African war, it has been decided to offer the War Office a fully staffed and equipped hospital for service in the field, the entire cost to be borne by funds raised in the Principality. The proposed accommodation is for 100 patients and the cost is estimated at from £15,000 to £20,000, of which amount £2500 were at once contributed by Sir James Thomas, a Rhondda colliery owner. The control of the hospital has been placed in the hands of Lieutenant-Colonel W. Sheen, R.A.M.C. (T.), who was associated with the Welsh hospital in South Africa.

The third Western hospital established under the Territorial scheme is nearly complete. Three large schools have been utilised in accordance with arrangements previously decided upon. Provision is made for 520 beds, and 100 beds will be available at the King Edward VII. Hospital, Cardiff, if required. The military hospital, which is intended to serve the Welsh Division of the Territorial Force, covering the whole of Wales and the adjoining counties of Cheshire, Shropshire, and Herefordshire, will be under the command of Colonel David Hepburn, R.A.M.C. (T.).

During the past few years a great deal of enthusiasm has been displayed in South Wales in connexion with the St. John Ambulance Association and the British Red Cross Society. In the county of Glamorgan alone there are 59 detachments of the latter, and there is evidence on all hands of considerable activity on the part of the various units. At Merthyr Tydvil Cyfarthfa Castle has been granted to the local society for use as a hospital.

ST. BARTHOLOMEW'S HOSPITAL.—The governors have placed a wing of the hospital (198 beds), staffed and maintained by the hospital, at the service of the War Office if required. All the visiting medical and surgical staff belong to the Territorial Forces, and No. 1 General Hospital R.A.M.C. (T.F.) (520 beds) is staffed entirely by St. Bartholomew's men. Fifteen of the resident staff and 30 students, dressers, &c., have gone on active service, and a certain number of students have gone to No. 1 Base Hospital. The hospital has undertaken to provide 28 sisters or nurses for the Admiralty and 30 for the War Office; 35 have already been drafted to various naval or military hospitals. Also some 30 members of the nursing staff belonging to the Territorials have been mobilised. Until further notice the out-patient special departments will be open only on two days a week, otherwise the service of the hospital will continue as usual.

UNIVERSITY COLLEGE HOSPITAL.—At this hospital the whole of the resident staff have proceeded on active service with either the Army or the Navy, and their work is now being done by old students of the hospital as volunteers. Twenty-four nurses have also gone and others will follow. Half the consulting staff have been mobilised for service either with the Territorial Army or in connexion with No. 3 Base Hospital. The authorities of the above hospital have placed at the disposal of the Admiralty 100 beds for their use if required. Arrangements are being made by which the new chemical buildings at University College can, in the case of necessity, be fitted up and utilised as an annexe to the hospital. Special courses of instruction in dressing and nursing for the Cadets of the Officers Training Corps have been instituted.

MIDDLESEX HOSPITAL.—The authorities have placed 80 beds at the disposal of the War Office and Admiralty, and have offered to equip the whole of their branch hospital of 100 beds (in an emergency an additional 50 or 100), which is self-contained, having its own laundry and electrical light and power plant, as a complete surgical hospital. More than half the senior consulting staff are attached to No. 3 Base Hospital, and several house surgeons have gone on active service, as have many qualified students. The War Office and the Admiralty have called up 30 members of the nursing staff. The work of those who have left is being carried out by their remaining colleagues. The cadets of the Officers Training Corps are receiving special instruction, and more than 300 ladies are attending the "First-aid" classes by members of the staff.

ST. THOMAS'S HOSPITAL.—The governors and staff have offered to place 200 beds at the service of the State. More will be provided as required, and tents will be erected for extra beds between the blocks if necessary. No. 2 Territorial Hospital calls out some of the senior members of the staff, but the general body of the staff will be on full duty at the hospital during the war. Between 40 and 50 St. Thomas's men have already gone on duty with either the army or the navy. The resident staff have stood loyally to their duty, and the full work of the hospital in regard to the civil population is maintained. Arrangements have been made for the transference of suitable cases after the first treatment to Lady Henry Somerset's Home at Duxhurst and other places. Classes for special instruction of dressers have been undertaken by a member of the surgical staff, and extra students from the various University Officers Training Corps are now attending the hospital. Many nurses have been sent to both the Army and Navy Nursing Service. Facilities are offered to Red Cross nurses to gain experience.

ST. GEORGE'S HOSPITAL.—The house committee have placed at the disposal of the Admiralty and War Office 100 beds at this hospital and its convalescent branch at Wimbledon. Three of the physicians and two of the surgeons have been called away on active duty; the remainder of the senior staff are gazetted for service at No. 4 Base Hospital which is being organised at King's College Hospital. Of the 15 house officers, 13 have received appointments in the Army or Navy Medical Services. Some of the visiting surgeons have entered into residence to act as house surgeons, in addition to their ordinary work. A great many offers of assistance have been received from old St. George's men to fill up vacancies. Arrangements have been made for special courses of instruction in dressing for men from the universities.

BIRMINGHAM HOSPITALS AND THE WAR.—As in other large centres, the war has profoundly disturbed medical work in Birmingham. The 1st Southern General Hospital of the Territorial Force has been mobilised, the Edgbaston buildings of the University being converted into a hospital of 520 beds or more if necessary. Lieutenant-Colonel Marsh, the Administrator, Major J. E. H. Sawyer, the Registrar, and Lieutenant Bennison, the Quartermaster, have devoted all their time to the necessary preparations, and the *à la suite* staff are holding themselves in readiness for duty. The staff, among others, consists of 15 active members of the staffs of the General and Queen's Hospital. These two hospitals have given notice that only urgent cases can be admitted, and that no waiting list for admission will be compiled. Five members of the assistant staff of the General Hospital have already left to take up various military duties, and one assistant surgeon from the Queen's Hospital. So far no wards have been definitely closed, but as some are closed for cleaning it is doubtful whether they will be reopened. Many of the smaller hospitals in the midlands are prepared to receive a certain number of military patients. The general practitioners have held a meeting to arrange to carry on the practices of those of their number who have been called away.

ORGANISATION AT PORTSMOUTH.—A Portsmouth correspondent writes:—"Portsmouth bristles with war activities and is playing its part in the great crisis with the traditional patriotism of the chief naval port. The Fifth Southern General Hospital Territorial Force has been mobilised. The municipal school buildings have been prepared for hospital use, one with a service of 500 beds, and the work of equipping them has been carried out with expedition. The nursing arrangements are under the control of Miss Alcock, matron of the Royal Portsmouth Hospital, who is the principal matron of this division. Ninety-one nurses have been called up from an enrolled list of 120. All the nurses have had three years' hospital training. Many voluntary agencies are at work in the interest of sailors' and soldiers' wives and families, care being taken that no over-lapping occurs in giving assistance. Ladies are volunteering to visit the wives of the sailors afloat. Miss Agnes Weston (the well-known bluejacket's friend) has established both here and at Devonport a depôt for Red Cross supplies. Arrangements have been made by which 30 extra children can be admitted immediately into the Royal Naval and Marine Orphan Home should occasion arise. The local subscription for the Prince of Wales's relief fund amounts to £2500. Many cases of aliens acting as spies having occurred, it has been deemed essential for the national safety to order all Germans and Austrians to leave the town. Official intimation has been given that all licensed public-houses must be closed at 9 P.M. until further notice. It has not been thought necessary to assign beds in the Royal Portsmouth Hospital for war patients, as the facilities for their reception in the special hospitals seem ample for the present. Several members of the honorary medical and surgical staff and many local practitioners have volunteered their services wherever they might be required. In view of these offers for war duty the Portsmouth Panel Committee recommend that insurance patients on the lists of doctors who are serving in the present emergency should be attended gratuitously by the remaining National Insurance doctors, and that transfers from the lists of those serving should be refused except in very special cases."

HAMPSTEAD PRACTITIONERS AND ABSENT COLLEAGUES.—At a meeting of members of the medical profession practising locally in the borough of Hampstead, held at the Hampstead General Hospital on August 13th, it was unanimously resolved "to safeguard loyally the interests of those colleagues called in the service of their country to leave their practices; and that any medical duties for the absentees should be performed under arrangements favourable to the latter, the ordinary custom of the neighbourhood being the basis upon which such arrangements should be made." The resolutions were typical of many others which have been passed by meetings of practitioners throughout the country.

AT the beginning of the week medical men were invited to volunteer for the duty of examining recruits, and many applications were accordingly made to the Secretary of the Territorial Force Association of the County of London, at the Duke of York's Headquarters, Chelsea, S.W.

A MOTOR-CAR Corps is being formed to assist Red Cross work in this country by Sir Frederick Treves and Lord Norreys. Owners of cars who are willing to place them at the disposal of the British Red Cross Society are invited to address the society (Dept. No. 8) at Devonshire House, Piccadilly, London, W., and should state whether they can supply cars with or without drivers. Orders have been given by the War Office that in no circumstances are the motor-cars of civil medical practitioners to be impressed.

NATIONAL FOOD REFORM ASSOCIATION.—This association is drawing attention to the fact that the small publications which they issue at the price of 1*d*. ("Economical Dishes for Workers") and 2*d*. ("Hints Towards Diet Reform") inculcate exactly the doctrines of economy and modification appropriate to the pr [illegible] osition.

THE BELFAST HOSPITALS AND THE WAR.—The board of management of the Royal Victoria Hospital, Belfast, have offered to provide 50 beds at once for wounded sailors or soldiers, and a further 50 beds at 24 hours' notice. The city corporation of Belfast have decided to place at the disposal of the military authorities, for hospital purposes, the Exhibition Hall, Belfast, and the Albert Bridge-road Institute; while Miss Stewart Clark has offered her residence, Cairndhu, Larne, as a convalescent home for wounded officers and men of the army and navy. Owing to a number of the nursing staff of the Samaritan Hospital, Belfast, having been requisitioned by the military authorities, it has been decided to close that institution for the present.

UNIVERSITY OF GLASGOW.—Sir Donald MacAlister, Principal of the University, states that to undergraduate students of the University called to active service every consideration will be extended. In relation to attendance on courses of instruction, to duration of study, and to periods of notice required, account will be taken of absence on military duty, so as, where possible, to ensure that graduation will not be unduly delayed. In short, the University will do whatever the Ordinances permit to safeguard the academic interests of its soldier alumni.

ADDRESSES FOR REFERENCE.

The following list of addresses will be useful to our readers for various reasons. No attempt has been made to classify them, and only such institutions as have a defined and important purpose have been included:—

Army Medical Service, Director-General, The War Office, London, S.W. (Surgeon-General A. T. Sloggett, Kt., C.B., C.M.G., K.H.S.)

Automobile Association, Fanum House, Whitcomb-street, London, W.

Belgian Relief Fund (cheques to the Belgian Minister), 15, West Halkin-street, Belgrave-square, London, S.W. (Clothing, &c., to Mr. Navaux, 8, Chiswell-street, Finsbury-pavement, London, E.C.)

British Fire Prevention Committee, 8, Waterloo-place, London, S.W.

British Red Cross Society, Devonshire House, Piccadilly, London, W.

Central Advisory Committee for the Prevention and Relief of Distress, Local Government Board Offices, London, S.W.

Corps of Veterans.—Ex-service men are asked to send in their names to Major Arthur Haggard, 47, Bedford-row, London, W.C.

County of London Territorial Force Association, Duke of York's Headquarters, King's-road, Chelsea, London, S.W.

General Medical Council, 299, Oxford-street, London, W.

League of the Empire, 28, Buckingham-gate, London, S.W.

London Volunteer Defence Force, proposed.—Honorary Secretary, Percy A. Harris, Exhibition Buildings, Aldwych Site, Strand, London, W.C.

National Patriotic Association (Personal Service).—Honorary Secretary, A. Lindsay Bell, 32, St. Paul's Churchyard, London, E.C.

National Relief Fund, Treasurer, H.R.H. the Prince of Wales, Buckingham Palace, London, S.W. (money only).

National Relief Fund, 3, Queen Anne's-gate, Westminster, S.W. (offers of help other than money).

Navy, Medical Department of the, Director-General, Admiralty, London, S.W. (Surgeon-General Sir Arthur W. May, K.C.B.)

Ottoman Red Crescent Society, 35, Mildmay Chambers, Bishopsgate, London, E.C.

Queen Alexandra's Appeal for the Wives and Families of Soldiers and Sailors (Colonel Sir James Gildea), 23, Queen Anne's-gate, Westminster, S.W.

Queen Alexandra's Imperial Military Nursing Service. Address: The Secretary, The War Office, London, S.W.

Queen Alexandra's Military Hospital, Grosvenor-road, London, S.W.

Queen Mary's Needlework Guild.—London guilds should send their gifts to the honorary secretary, Friars' Court, St. James's Palace, S.W., marked Q.M.N.G. Local guilds should send to their local officers.

Recruiting for the Regular Army, Central Office, New Scotland Yard and Branch Offices.

Roya[illegible] Medical College, Grosvenor-road, London, S.W.

Royal Patriotic Fund, 17, Waterloo-place, London, S.W.

Soldiers' and Sailors' Families' Association, 23, Queen Anne's Gate, S.W.—Assistance to families of soldiers and sailors.

Special Constables.—Head Office, Scotland House, New Scotland Yard. Apply to your local police station.

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

ARDAGH, V. L., M.D. Dub., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Maiden Newton District of the county of Dorset.

HOLLAND, EARDLEY, M.D. Lond., M.R.C.P. Lond., F.R.C.S. Eng., has been appointed Assistant Obstetric Physician to King's College Hospital.

WHITE, C. RICHARDSON, L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Public Vaccinator and Medical Officer for the Glasbury District of the Hay Board of Guardians.

The Medical Officer in Charge, Military Wing, Royal Flying Corps, Farnborough, has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Farnborough No. 2 District of the county of Hants.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ABERYSTWITH GENERAL HOSPTIAL.—House Surgeon and Secretary. Salary £175 per annnm, all found.

AYLESBURY, ROYAL BUCKINGHAMSHIRE HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board, washing, and lodging.

AYRSHIRE SANATORIUM, Glenafton, New Cumnock.—Assistant to the Resident Medical Officer. Salary £150 per annum, with board and rooms.

BANBURY, HORTON INFIRMARY.—House Surgeon. Salary £120 per annum, with board and residence.

BARROW-IN-FURNESS, NORTH LONSDALE HOSPITAL.—House Surgeon. Salary £150 per annum, with residence, board, and laundry.

BIRMINGHAM, CITY FEVER HOSPITAL, Little Bromwich.—Assistant Medical Officer. Salary £200 per annum, with board, residence, and laundry.

BIRMINGHAM FEVER HOSPITAL.—Temporary Medical Superintendent (female). Salary £250 per annum, with board and residence.

BIRMINGHAM UNION.—Fourth Assistant Medical Officer at Dudley-road Infirmary. Also Assistant Medical Officer at Selly Oak Infirmary. Salaries respectively £140 and £160 per annum, with board and residence.

BLACKPOOL, VICTORIA HOSPITAL.—Resident Medical Officer. Salary £150 per annum, with board, residence, and laundry.

BODMIN, CORNWALL COUNTY ASYLUM.—Junior Assistant Medical Officer. Salary £225 per annum, with quarters, board, laundry, and attendance.

BRADFORD ROYAL INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with board, residence, and washing.

BRIGHTON THROAT AND EAR HOSPITAL, Church-street, Queen's-road.—Non-Resident House Surgeon for six months. Salary at rate of £150 per annum.

BRISTOL, CITY AND COUNTY, TUBERCULOSIS SCHEME.—Assistant Medical Officer, temporary. Salary at rate of £350 per annum.

CANNING TOWN WOMEN'S SETTLEMENT HOSPITAL, Balaam-street, Plaistow, E.—Female Senior Resident Medical Officer. Salary £120 per annum, with board and laundry.

CLINICAL RESEARCH ASSOCIATION, Watergate House, York Buildings, Adelphi, W.C.—Assistant Director of the Laboratories. Salary £250 per annum.

COVENTRY AND WARWICKSHIRE HOSPITAL, Coventry.—Senior House Surgeon, House Physician, and Junior House Surgeon. Salaries £150, £110, and £100 per annum respectively, with residence, board, laundry, and attendance.

CROYDON BOROUGH HOSPITAL FOR INFECTIOUS DISEASES.—Assistant Resident Medical Officer. Salary £150 per annum, with board, residence, and laundry.

CROYDON UNION.—Assistant Medical Superintendent of the Infirmary and Assistant Medical Officer of the Workhouse and Children's Homes. Salary £225 per annum.

DERBY, DERBYSHIRE HOSPITAL FOR SICK CHILDREN.—Female Resident Medical Officer. Salary £80 per annum.

DEVONPORT, ROYAL ALBERT HOSPITAL.—House Surgeon, unmarried, Salary £150 per annum, with board and laundry.

DUNDEE ROYAL INFIRMARY.—Resident Medical Officers.

EDINBURGH, ROYAL ASYLUM, Morningside.—Assistant Physician. Salary £175 per annum.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, S.E.—House Surgeon for six months and House Physician for four months. Salaries at rate of £75 per annum, with board, residence, and washing.

FULHAM INFIRMARY, St. Dunstan's-road, Hammersmith, W.—Junior Assistant Medical Officer for six months. Salary at rate of £110 per annum, with board, apartments, and washing.

GENERAL LYING-IN HOSPITAL, York-road, S.E.—House Physician. Salary at rate of £50 per annum, with board and residence.

GLASGOW ROYAL MATERNITY AND WOMEN'S HOSPITAL (OBSTETRICAL DEPARTMENT).—Two Indoor and Two Outdoor House Surgeons. Also Outdoor House Surgeon at the West-End Branch.

GLASGOW SCHOOL BOARD.—Female Assistant Medical Officer.

HACKNEY UNION INFIRMARY, High-street. Homerton, N.E.—Junior Assistant Medical Officer. Salary £140 per annum, with rations, apartments, and attendance.

HALIFAX ROYAL INFIRMARY.—Second and Third House Surgeons, both unmarried. Salaries £120 and £100 per annum respectively, with residence, board, and washing.

HAMPSTEAD GENERAL AND NORTH-WEST LONDON HOSPITAL.—Two Female Resident Casualty Officers for six months. Salary at rate of £50 per annum, with board, residence, and laundry.

HOLBORN UNION INFIRMARY, Archway-road, Upper Holloway, N.—Second Assistant Medical Officer. Salary £150 per annum, with board, apartments, and washing.

HULL ROYAL INFIRMARY.—Assistant House Surgeon. Salary at rate of £100 per annum, with board and lodging.

HULL, VICTORIA CHILDREN'S HOSPITAL, Park-street.—Female Resident House Surgeon. Salary £50 per annum, with board and laundry.

ILFORD URBAN DISTRICT COUNCIL.—School Dentist. Salary at rate of £250 per annum.

KENSINGTON AND FULHAM GENERAL HOSPITAL, Earl's Court, S.W.—Second Resident Medical Officer. Salary at rate of £70 per annum, with board and laundry.

LEAMINGTON SPA, WARNEFORD, LEAMINGTON, AND SOUTH WARWICKSHIRE GENERAL HOSPITAL.—House Physician for six months. Salary £85 per annum, with board, residence, and laundry.

LEICESTER ROYAL INFIRMARY.—Assistant House Surgeon and Ophthalmic House Surgeon for six months. Salary at rate of £100 per annum each, with board, apartments, and washing.

LIVERPOOL, DAVID LEWIS NORTHERN HOSPITAL.—Resident Surgical Officer, House Surgeon, and Two House Physicians, all for six months. Salaries respectively £70, £60, and £60, with board, residence, and laundry.

LOWESTOFT AND NORTH SUFFOLK HOSPITAL.—House Surgeon, unmarried. Salary at rate of £150 per annum, with board, residence, and laundry.

LONDON TEMPERANCE HOSPITAL, Hampstead-road, N.W.—Resident and Assistant Medical Officers for three months. Salaries at rate of £200 and £120 per annum, with board, residence, &c.

MAIDSTONE, WEST KENT GENERAL HOSPITAL.—Assistant House Surgeon, unmarried. Salary £100 per annum, with board, lodging, &c.

MANCHESTER CHILDREN'S HOSPITAL, Pendlebury.—Resident Medical Officer, unmarried, for six months. Salary at rate of £100 per annum.

MANCHESTER, HULME DISPENSARY, Dale-street, Stretford-road.—House Surgeon. Salary £180 per annum, with apartments, attendance, coal, and gas.

MANCHESTER ROYAL INFIRMARY.—Medical Officer for Out-Patients and Accidents for six months. Salary at rate of £100 per annum, with board and residence. Also Three House Physicians, House Surgeon, and Four Junior House Surgeons, unmarried. Board and residence provided.

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN, Park-place, Cheetham Hill-road.—House Surgeon. Salary £120 per annum, with apartments and board.

MANCHESTER (SOUTH) HOSPITALS. West Didsbury.—Second and Third Assistant Resident Medical Officers. Salary £175 and £150 per annum respectively, with rations, apartments, and attendance.

METROPOLITAN HOSPITAL, Kingsland-road, N.E.—House Surgeon and Assistant House Surgeon for six months. Salary at rate of £60 and £40 per annum respectively, with board and washing.

NEWPORT (MON.), ROYAL GWENT HOSPITAL.—Resident Medical Officer. Salary for first six months at rate of £100 per annum, second six months £125, and third six months £150, with board, residence, and laundry.

NORFOLK EDUCATION COMMITTEE.—Assistant Medical Officer. Salary £300 per annum.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon, unmarried. Salary £180 per annum, with apartments (not board), attendance, light, and fuel.

NOTTINGHAM GENERAL HOSPITAL.—Senior House Physician. Salary £120 per annum, with board, residence, and laundry.

OLDHAM, COUNTY BOROUGH OF.—Clinical Tuberculosis Officer. Salary £350 per annum.

PAISLEY INFECTIOUS DISEASES HOSPITAL.—Resident Medical Officer. Salary £150 per annum, with board, washing, and attendance.

PORTSMOUTH ROYAL HOSPITAL.—House Surgeon for six months. Salary £90 per annum, with board, &c.

PRESTON ROYAL INFIRMARY.—House Physician. Salary £120 per annum, with board, residence, and laundry.

PUTNEY HOSPITAL, Putney Common, S.W.—Resident Medical Officer. Salary £100 per annum, with rooms, board, and laundry.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone-road, N.W.—Resident Medical Officer for four months. Salary at rate of £60 per annum, with board, residence, and washing.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E.—House Surgeon for six months. Salary £80 per annum, with board, residence, and washing. Also Female House Physician and Casualty House Surgeon for six months. Salary £80 per annum, with board, residence, and washing.

READING, ROYAL BERKSHIRE HOSPITAL.—Second House Surgeon. Salary at rate of £80 per annum, with lodging, board, and laundry.

ROCHESTER, ST. BARTHOLOMEW'S HOSPITAL.—Resident House Physician for six months. Salary at rate of £110 per annum, with board, residence, and laundry.

ROTHERHAM HOSPITAL.—Assistant House Surgeon. Salary £110 per annum, with board, lodging, and washing.

ROYAL NAVAL MEDICAL SERVICE.—Twenty-five Appointments.

ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN, S.E.—Junior Resident Medical Officer. Salary at rate of £70 per annum, with board and washing. Also Senior Resident Medical Officer. Salary at rate of £90 per annum, with board and washing.

ST. LEONARD, SHOREDITCH, INFIRMARY, Hoxton-street, N.—Junior Assistant Medical Officer for six months. Salary £150 per annum, with board, apartments, and washing.

ST. MARY'S HOSPITAL MEDICAL SCHOOL, Paddington, W.—Demonstrator of Physiology. Salary £150 per annum.

SALFORD ROYAL HOSPITAL.—Casualty House Surgeon. Salary at rate of £100 per annum, with board and residence.

SALISBURY (GENERAL) INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with apartments, board, and lodging. Also Assistant House Surgeon. Salary £75 per annum.

SAMARITAN FREE HOSPITAL FOR WOMEN, Marylebone-road, N.W.—Resident House Surgeon. Salary £80 per annum, with board and washing.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Senior and Junior House Surgeons. Salaries £100 and £80 per annum respectively, with board, residence, &c.

SHEFFIELD, EAST-END BRANCH OF THE CHILDREN'S HOSPITAL.—House Surgeon. Salary £120 per annum, with board and residence.

SHEFFIELD ROYAL HOSPITAL.—Honorary Assistant Dental Surgeon.

SHERBURN HOSPITAL, near Durham.—Medical Officer. Salary £300 per annum and house.

SOMERSET COUNTY EDUCATION COMMITTEE.—Assistant School Medical Officer. Salary £300 per annum.

STOCKPORT UNION, STEPPING HILL HOSPITAL.—Resident Assistant Medical Officer. Salary £150 per annum, with apartments, rations, &c.

SWANSEA GENERAL AND EYE HOSPITAL.—House Surgeon. Salary £125 per annum, with board, washing, and attendance. Also House Physician. Salary £125 per annum, with board, apartments, and laundry.

TRURO, ROYAL CORNWALL INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with rooms, board, and washing.

WALSALL AND DISTRICT HOSPITAL.—Junior House Surgeon and Anæsthetist. Salary £110 per annum, with board, residence, and laundry.

WALTHAMSTOW EDUCATION COMMITTEE.—Assistant School Medical Officer. Salary £300 per annum.

WARRINGTON, LANCASHIRE COUNTY ASYLUM, Winwick.—Assistant Medical Officer, unmarried. Salary £250 per annum, with board, apartments, attendance, and washing. Also Locum Tenens Medical Officer. Salary 6 guineas per week, with apartments, board, attendance, and washing.

WEST BROMWICH AND DISTRICT HOSPITAL.—Assistant Resident House Surgeon and Anæsthetist, unmarried. Salary £100 per annum, with board, residence, and washing.

WEST HAM AND EASTERN GENERAL HOSPITAL, Stratford, E.—Resident Medical Officer. Salary £160 per annum. Also Senior House Physician and Senior House Surgeon. Salary £120 per annum. Also Junior House Physician and Junior House Surgeon. Salary £100 per annum. Board, residence, and washing provided in each case.

WEST LONDON HOSPITAL, Hammersmith-road, W.—Two House Physicians and Three House Surgeons for six months. Board, lodging, and laundry provided.

WHITECHAPEL UNION INFIRMARY, Vallance-road, E.—Second Assistant Resident Medical Officer. Salary £120 per annum, with rations, apartments, and washing.

WHITEHAVEN AND WEST CUMBERLAND INFIRMARY.—Resident House Surgeon. Salary £120 per annum, with board, washing, and attendance.

WREXHAM INFIRMARY.—Resident House Surgeon. Salary £120 per annum, with board, lodging, and washing.

THE Home Secretary gives notice of a vacancy for a Medical Referee under the Workmen's Compensation Act, 1906, for the Eastern District of the Sheriffdom of Perth. Applications should be addressed to the Private Secretary, Scottish Office, not later than Sept. 4th.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies for Certifying Surgeons under the Factory and Workshop Acts at Corris, in the county of Merioneth; and at Yatton, in the county of Somerset.

Births, Marriages, and Deaths.

BIRTHS.

MÁSINÁ.—On July 23rd, at Nepean Sea-road, Malabar Hill, Bombay, India, the wife of H. M. Másiná, F.R.C.S., of a daughter.

MARRIAGES.

BOOTH—ELLIOTT.—On August 18th, at St. Barnabas Church, Kensington, by the Rev. G. Pelham Ackworth, uncle of the bridegroom, Claude Hebden Barker, M.R.C.S., son of the late Samuel Barker Booth, of Gray's Inn, London, to Grace Octavia, youngest daughter of the late Edmund Frederick Elliott and Mrs. Elliott, of Holland-road, Kensington.

MALPAS—SCHARLACH.—On August 15th, at All Souls', Langham-place, Dr. Douglas Duncan Malpas, elder son of D. D. Malpas, M.D., of Biarritz, France, to Hilda Louisa, daughter of Dr. F. Scharlach, of The Briers, Highams Park.

PIRIE—COLLIE.—On August 15th, at Balnagarth Pifodels, Aberdeen, by the Rev. Martin Lewis, D.D., assisted by the Rev. C. W. Hunter, M.A., and the Rev. James Wishart, B.D., William Rattray Pirie, M.B., C.M., M.A. Aberd., to Ella Gordon, daughter of the late George Collie, Advocate in Aberdeen.

DEATHS.

BRUCE.—On June 30th, at Quilpué, near Valparaiso, Chile, Peter Bruce, M.R.C.S. Eng., L.D.S. Eng., L.S.A. Lond., aged 63.

KELSALL.—On August 12th, at Surbiton, Isabel Gertrude, wife of Captain Robert Kelsall, Indian Medical Service, and only daughter of the late Brigade-Surgeon Edward James Sexton, aged 38.

MCCULLOCH.—On August 12th, suddenly, at Bognor, Dr. Henry D. McCulloch, M.B., aged 54.

TREWHELLA.—On August 9th, at Monart, Torquay, Henry Ellery Trewhella, M.D., aged 82.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

STUDENTS' NUMBER OF THE LANCET.

INFORMATION intended for the Students' Number of THE LANCET must be sent WITHOUT DELAY, addressed to the Sub-Editor, and marked on the envelope "Students' Number Only."

THE COST OF LIVING IN AUSTRIA AND GERMANY.

A PARAGRAPH in our Vienna letter of Jan. 25th, 1913, makes interesting reading to-day. It deals with the increased cost of living in Austria, and states that the fact that a large proportion of the population is underfed has been officially admitted in connexion with the results of recruiting for the army. Austria is being rapidly transformed into a manufacturing country, the agricultural part of the population now forming less than 40 per cent. of the total. The recruits coming from towns are, as a rule, less well fed than those from the country, unless they belong to well-to-do families. Within the last six years the price of food has increased considerably—milk 30 per cent., meat 40 per cent., sugar 25 per cent., flour 25 per cent., vegetables 50 per cent., and fruit 30 per cent. House rent has gone up to the extent of 30 or even 100 per cent.

Germany, also, has been remarkably transformed into a manufacturing country since the empire was founded in 1871, when there were only eight towns with a population of over 100,000 inhabitants, whereas the number of such towns in 1913 was 50. The number of people engaged in agriculture has remained stationary since the beginning of the last century, and all the increased population has gone to make the towns. It is a nation of town-dwellers. The reason is that the German workmen prefer to do skilled work themselves and leave "unskilled" to foreigners.

These facts go to show that the influence of the increase of town life has a most important bearing upon the whole welfare and future of any State and that this question deserves far more close attention by the authorities than it has yet received; for with the rapid growth of towns and the neglect of agriculture the whole character of a population and its aspirations must be entirely changed, sometimes with most far-reaching and disastrous effects.

NUMBER OF DOCTORS ON THE PANEL.

To the Editor of THE LANCET.

SIR,—With reference to my inquiry in THE LANCET of July 11th on this subject, I now observe that the question has been answered in the *British Medical Journal* of August 15th, p. 149, where extracts are printed from a document placed before the annual Representative meeting at Aberdeen which had been prepared by instruction of the council. From it I observe that the total number of individual panel practitioners in England, Scotland, and Wales is 14,522, and the total number of individual non-panel practitioners in the same area is 14,967, giving a total of panel and non-panel together of 29,489 individual medical men. I observe also that of the total of 14,967 non-panel men there are 10,545 not in general practice, leaving 4422 non-panel men in general practice who probably could be, but are not, on the panel; but it is also remarked that many non-panel men have partners or assistants who are on the panel. This valuable information throws a much clearer light on the situation than has hitherto been done, although it is not safe to draw from the figures too definite conclusions as to the real popularity or otherwise of panel practice.

I am, Sir, yours faithfully,
London, August 15th, 1914. INQUIRER.

WHAT TO DO WITH CHEAP FRUIT.

IT is stated in the Memoirs of Sir A. D. Home, K.C.B., whose death we recorded last week, that both in the Crimea and in India men and officers alike craved for marmalade or jam. Here is an opportunity for some wealthy patriots to negotiate for converting some of the cheap fruit which we learn is on the market into jam and get it conveyed to the front. The price of sugar may not be such a drawback, as there are other scientific methods of sweetening jams which could be adopted to meet the circumstances of the occasion. The cause for the surplus of cheap fruit is reported to be that fruit is largely, and in some cases almost entirely, withdrawn from the ordinary dietary of the public at this time of stress, the rooted idea in this country being that fruit is a luxury. There is no doubt that to dispense entirely with fruit on such an assumption is foolish; it reflects hardly upon a number of people engaged in commerce, while the public deprives itself of pleasant, economical, and valuable food. It will be seen on referring to the report of the committee which investigated the food requirements of the body in active service, published in THE LANCET of Jan. 3rd, 1914, p. 59, that, amongst other things, 4 oz. of jam (additional to the existing issue) was recommended.

SUNFLOWER OIL.

A CORRESPONDENT points out that the oil from sunflower seeds could probably be used in the place of olive oil, and as a large quantity of this plant is grown more or less extensively in this country for decorative purposes and for drying up the moisture in damp soils, he suggests that the seeds might be forwarded to some central station where the oil could be expressed. The sunflower, however, would have to be cultivated on a very large scale before any important yield was obtained, as under the best conditions 100 parts by weight of seed give not more than 15 to 20 parts of oil. The sunflower oil industry is centred chiefly in Russia.

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B. L.—The following books could well be added to the list published last week: Die Schussverletzungen des Schädels im Kriege, Beobachtungen und Erfahrungen während des Russisch-Japanischen Krieges, 1904–1905. Von Otto Holbech. Berlin: August Hirschwald. Pp. 479. Price 12 marks. (Shot Wounds of the Skull in War, Observations and Experiences during the Russo-Japanese War.) This volume formed one section of a series of official publications relating to military medicine and surgery, and contains an extensive bibliography. It was reviewed in THE LANCET of Nov. 1st, 1913, p. 1263. It may now be inaccessible. Les Blessures de Guerre par les Armes Modernes et leur Traitement. Par le Dr. Th. Weiss, Médecin principal de 2e Classe de l'Armée Territoriale, Professeur à la Faculté de Médicine de Nancy. Paris: Berger-Levrault, 1912. Pp. 89, with 54 illustrations. Price 3 francs.

G. R. (Middlesbrough).—Our correspondent has omitted to sign his letter on the subject of health visitors.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

A DIARY OF CONGRESSES.

THE following Congresses, Conferences, and Exhibitions are announced.
In 1914:—

May 1st–Nov. 1st (Lyons).—International Town Hygiene Exhibition.
,, 15th–Oct. 15th (Berne).—Swiss National Exhibition.
May–October (London, Shepherd's Bush).—Anglo-American Exposition.
July–September (Australia).—Eighty-fourth Annual Meeting of the British Association for the Advancement of Science. (August 20th to 26that Sydney, August 27th to Sept. 1st at Brisbane).
Aug. 29th–Sept. 14th (Toronto).—Canadian National Exhibition.
Sept. 7th–12th (Berne).—International Congress for Neurology, Psychiatry, and Psychology.
,, 10th–12th (Fort William and Port Arthur, Ontario).—Fourth Annual Congress of the Canadian Public Health Association.
,, 21st–26th (Victoria, B.C.).—Dominion Exhibition.
,, 21st–26th (Vienna).—Third International Congress on Diseases of Occupation.
,, 30th–Oct. 4th (Brussels). Fourteenth French (de langue française) Congress of Medicine.
Oct. 31st–Nov. 2nd (Berlin).—First Congress of the International Society for Sexual Research.
Nov. 15th–21st (London).—Health Week. (Under the direction of the Health Week Committee appointed by the Royal Sanitary Institute.)

In 1915:—

Feb. 20th (opens) (San Francisco).—Panama-Pacific International Exposition.
May 31st–June 5th (London, South Kensington).—Sixth International Congress of Social Work and Service.
Sept. 5th–8th (Hamburg).—Tenth International Congress of Otology.
,, 8th (begins) (Manchester).—Meeting of the British Association
,, 9th–12th (Hamburg).—Fourth International Rhino-Laryngological Congress.
,, 13th–17th (New York).—Seventh International Congress for Obstetrics and Gynæcology.

The following magazines, journals, &c., have been received:— Journal of Laryngology, Rhinology, and Otology, Journal of Pathology and Bacteriology, Therapist, Journal of State Medicine, Tumori, Journal of Tropical Medicine and Hygiene, American Journal of Surgery, Bulletin of the Johns Hopkins Hospital, Interstate Medical Journal, Clinical Medicine, Maryland Medical Journal, St. Paul Medical Journal, Symons's Meteorological Magazine, Child, South African Medical Record, Canadian Practitioner and Review, British Journal of Dermatology, Albany Medical Annals.

Medical Diary for the ensuing Week.

ECTURES, ADDRESSES, DEMONSTRATIONS, &c.

OST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

Monday.—10 a.m., Dr. Simson: Diseases of Women. 2 p.m., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Dr. Pritchard: Bacterial Therapy Department. Mr. Gibb: Diseases of the Eye.

Tuesday.—10 a.m., Dr. Simson: Gynæcological Operations. 2 p.m., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

Wednesday.—10 a.m., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 2 p.m., Medical and Surgical Clinics. X Rays. Mr. Souttar: Operations. Dr. Simson: Diseases of Women. Mr. Gibb: Diseases of the Eye.

Thursday.—9 a.m., Dr. Bernstein: Bacterial Therapy Department. 2 p.m., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Mr. Gibb: Diseases of the Eye.

Friday.—10 a.m., Dr. Simson: Gynæcological Operations. 2 p.m., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

Saturday.—10 a.m., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear, Eye Operations. 2 p.m., Medical and Surgical Clinics. X Rays. Mr. Souttar: Operations.

ONDON HOSPITAL MEDICAL COLLEGE (University of London), London Hospital, Mile End-road, E.

Demonstrations in Clinical Medicine:—

Monday.—2.15 p.m., Dr. Wall: Pulmonary Tuberculosis. (Clinical Theatre.)

Tuesday.—2.15 p.m., Dr. Grünbaum: Diseases of the Blood. (Clinical Theatre.)

Wednesday.—2.15 p.m., Dr. Miller: Abdominal Diseases. (Out-patient Department.)

Thursday.—2.15 p.m., Dr. Thompson: Diseases of the Nervous System. (Clinical Theatre.)

Friday.—2.15 p.m., Dr. L. Smith: Common Cardiac Conditions. (Clinical Theatre.)

Saturday.—10.15 a.m., Dr. Hutchison: Demonstrations on Selected Cases. (Wards or Clinical Theatre.)

Demonstrations on Selected Surgical Cases and on Cases of Interest in the Wards of the Hospital:—

Monday.—2 p.m., Mr. Milne.
Tuesday.—2 p.m., Mr. Lett.
Wednesday.—2 p.m., Mr. Howard.
Thursday.—2 p.m., Mr. Warren.
Friday.—2 p.m., Mr. Walton.

THE THROAT HOSPITAL, Golden-square, W.

Monday.—5.15 p.m., Special Demonstration of Selected Cases.
Thursday.—5.15 p.m., Clinical Lecture.

ROTUNDA HOSPITAL POST-GRADUATE COURSES, Dublin.

Monday.—10 a.m., Obstetrical Lecture: Extra-uterine Pregnancy. 11 a.m., Examination of Patients and Minor Operations.

Tuesday.—10 a.m., Major Operations.

Wednesday.—10 a.m., Obstetrical Lecture: Extra-uterine Pregnancy (continued). 11 a.m., Examination of Patients and Minor Operations.

Thursday.—10 a.m., Major Operations.

Friday.—10 a.m., Gynæcological Lecture: Vesico-vaginal Fistulæ. 11 a.m., Examination of Patients and Minor Operations.

For further particulars of the above Lectures, &c., see Advertisement Pages.

EDITORIAL NOTICES.

It is most important that communications relating to the Editorial business of The Lancet should be addressed *exclusively* "To the Editor," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

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We cannot prescribe or recommend practitioners.

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Letters relating to the publication, sale, and advertising departments of The Lancet *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

The Index and Title-page to Vol. I. of 1914, which was completed with the issue of June 27th, were given in The Lancet of July 4th.

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(Taken daily at 8.30 a.m. by Steward's Instruments.)

The Lancet Office, August 19th, 1914.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Aug. 13	30·20	E.	...	123	81	61	63	65	Fine
" 14	30·07	E.	...	124	80	63	63	67	Fine
" 15	29·90	S.E.	...	84	69	62	62	65	Overcast
" 16	29·96	E.	...	127	76	56	58	62	Cloudy
" 17	30·09	N.E.	...	121	73	57	58	61	Cloudy
" 18	30·17	N.E.	...	115	70	54	54	59	Fine
" 19	30·13	S.E.	...	94	68	59	56	60	Overcast

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THE STUDENT'S GUIDE.

SESSION 1914–1915.

IT has been for many years our habit to preface the Students' Number of THE LANCET with an address directed mainly to those who have just joined our ranks; but the medical session 1914–1915 opens in circumstances which remove the need for laying any emphasis whatever either upon the merits of our calling or the responsibilities which ts choice entails. At a time when the whole nation s called upon to exercise self-control, industry, and patience, it is almost an impertinence to beg our recruits to believe that the professional life upon which they have embarked will make an especial call upon such virtues: at a time when curative and preventive medicine and surgery may be put to the greatest collective trial which they have ever experienced it is unnecessary to insist upon the supreme mportance to the world of their close study. We welcome our new colleagues upon the threshhold of an arduous career where the material prizes are neither many nor arge, but where success has a sweetness that cannot be rivalled.

The following is a brief explanation of the scheme upon which the Students' Number of THE LANCET is constructed. The General Council of Medical Education and Registration, conveniently known as the General Medical Council, is the controlling authority, under the Privy Council, of the medical education of the land. Under the provisions of the Medical Acts various universities and corporations are recognised as being examining bodies whose degrees or diplomas entitle to medical registration, and it is among the duties of the General Medical Council to keep the official register and to ensure by periodical visitations that the tests of the various examining bodies are maintained at a due standard. We begin by describing the powers of the General Medical Council, and go on to give in detail the regulations of the various examining bodies.

But the student must be taught as well as examined, and the systems under which he can obtain instruction do not conform to one pattern. The curriculum of the medical student falls into two parts, the preliminary subjects and the professional subjects, and the two cannot be sharply divided. The important preliminary subjects are chemistry, pharmacology, physics, biology, anatomy, and physiology, and they are taught in the school proper; the professional subjects, medicine, surgery, and obstetric medicine—under which headings all forms of specialism are included—must be learned in the wards of a hospital. All schemes of medical education require a school and a hospital, but there their uniformity ends.

The first point on which the medical student has to make up his mind is whether he desires a medical degree which will give him the definite title of Doctor or Bachelor of Medicine (coupled in many cases with that of Bachelor of Surgery), or whether he will be content with a diploma certifying him to be a Member or Licentiate of one or other of the great medical corporations. The medical corporations have no longer the objection which they once had to the use colloquially by their Licentiates of the style of Doctor, and by a wise pronouncement of the Royal College of Physicians of London Licentiates of the College may now use the courtesy title of Dr. if they so wish. Other corporations had previously adopted this reasonable attitude. If the student desires a degree he must matriculate at a university and go through the course of studies required by the regulations of its medical faculty, and it is well that he should bear this in mind from the outset, for many diplomates, wishing later to become medical graduates, have been debarred from doing so through having neglected to pass a university matriculation examination at a time when they were freshly versed in their preliminary literary and general studies. It is in many ways useful to take the London matriculation examination, and we print with some detail the regulations for that standard test of a good all-round secondary education.

Next we have collected together under their respective headings the chief information concerning the facilities for medical study, both "preliminary" and "professional," and the regulations for examinations at the various teaching centres of the United Kingdom, so that a student desiring to obtain a medical degree at any university may find under one heading an account of the medical faculty of that university, of the hospitals which form its field for clinical instruction, and of the prizes which it offers to the student of medicine. It is impossible to adhere rigidly to this plan without a good deal of overlapping and doubling of information, for, as is well known, the medical schools of some universities are served chiefly by hospitals in other centres. Thus the medical students of Oxford and Cambridge almost uniformly pursue their clinical studies in London, whilst any student who has gone through all his statutory training in a provincial centre may sit for a medical degree at the University of London. Again, when we come to consider the corporations which have the power to grant diplomas qualifying their possessors for the practice of medicine we find that they usually have no schools attached to them, but that they examine students who have gone through the curriculum at any recognised metropolitan or provincial school to the satisfaction of their teachers, and in accordance with the regulations of the corporations. The plan adopted has been to divide the Guide into the three headings of England and Wales, Scotland, and Ireland, and to deal with medical education in each country as a separate entity, describing first the medical faculties of the universities in each country, and following with an account of the medical corporations having powers to grant diplomas by examination. Under the heading of each university we give a general description of its arrangements for conferring medical degrees, of its facilities for preparing its students for those degrees, particulars of its scholarships and prizes, and of those hospitals affording clinical instruction which are situated in the neighbourhood of the university buildings. Following this plan, the metropolitan medical schools and hospitals are grouped in their proper place as schools of the University of London, although they serve other universities, and the diploma-granting bodies. A similar plan is adopted in dealing with the provincial universities, the hospitals in connexion with each being described; for though these may not be officially "schools" of the universities they supply an integral section of the teaching required by their candidates for medical graduation.

An account is given of the regulations of the various corporations granting diplomas for the practice of medicine. Medical employment in the Naval, Military, and Indian Medical Services and in the Public Health Service is fully described, and information is added as to diplomas in public health, as to special training in tropical medicine, and as to the system of education in dental surgery.

GENERAL COUNCIL OF MEDICAL EDUCATION AND REGISTRATION OF THE UNITED KINGDOM.

Powers and Duties of the General Medical Council.

THE full title is, "General Council of Medical Education and Registration of the United Kingdom." This title is in accordance with the Medical Act of 1858, by which the General Medical Council was established under the Privy Council to enable persons requiring medical aid to distinguish qualified from unqualified practitioners. The Council was thus instituted not primarily for the benefit of the medical profession but to ensure an efficient medical service to the public. It is obvious that by so doing the profession itself gained, in that official sanction was given to reputable practitioners only, while a proper guarantee was afforded to the public that the standard of medical education should always keep abreast of the scientific knowledge of the day. The powers of the Council under which it fulfils these important functions fall under four heads. It is first a registering body: it registers the attainment by students of the degrees or other qualifications that legally entitle them to practise medicine. This duty forms its chief service to the State, as a complete list of practitioners of legal standing, which is embodied in the Medical Register, is thus rendered available for the information of the public. No person, even though qualifications have been obtained, is a legally qualified medical practitioner unless his name appears on the Medical Register. For the purposes of medical education it also registers the entry by students upon their medical studies. Secondly, it assures the public that the education of medical men is kept up to an efficient standpoint by maintaining at the proper pitch the standard of the various medical examinations. Thirdly, it is a penal and disciplinary body, having power to remove from the Register any practitioner adjudged guilty of conduct "infamous in a professional respect." Here again it is the public interest that is first considered, although these powers are for the very material advantage of the medical profession. The last duty of the Council is the codification of pharmaceutical remedies. Registrars are appointed by the General Council and by the Branch Councils to keep registers of qualified persons. They are bound by Section XIV. of the Act to keep their registers correctly, a duty which, mainly owing to the apathy of members of the medical profession, can only be performed with difficulty.

It is as well here to put down the advantages, such as they are, of being duly registered. A duly registered practitioner may assume a name, title, addition, or description implying that he is registered under the Act and recognised by law. A duly registered practitioner may sue in the courts of law for the recovery of charges for medical attendance or advice, or surgical attendance or advice, or for the supply of medicine, or for the performance of any operation—provided that he is not debarred from suing by being a Fellow or a Member of any corporation which objects to its Fellows or Members so suing. If "actually practising" he may be exempted, if he so desire, from serving on juries. He may also be exempted from serving sundry corporate and parochial offices. Only a registered practitioner can hold appointments in the navy, army, and in sundry Poor-law and other institutions. Only a registered practitioner can sign a valid medical certificate. Removal of the name from the Register debars a man from all the above-mentioned privileges.

The General Medical Council is in no way a medical protection society or a medical defence union. It is not a professional union or a guild charged with looking after the interests of the medical profession after the manner of the old trades guilds, except in so far as it is concerned with the education of medical students. It has no powers over any member of the medical profession except to remove the name of any offending member from the roll of t profession or Medical Register. Practitioners may removed from the Medical Register (1) if convicted felony or misdemeanour in England, or in Ireland, or Scotland of any crime or offence, and (2) on being adjudg by the General Medical Council to have been guilty "infamous conduct in a professional respect."

The General Medical Council is primarily a body charg with looking after medical education; it is not concern with medical politics in the ordinary sense, but it is general felt to possess a mandate to interfere when the course legislature may directly affect the status of the medical pr fession in relation to the public. For example, the inte vention of the General Medical Council during the debat upon the National Insurance Act was probably of conside able value. The time of the Council is almost entire taken up with considering educational and registratio matters, the latter including the penal cases of remov from the Register. The Council at present consists of members, of whom, as will be seen by the annexed lis all but 11 are official representatives of some corporat body. Five members are chosen by the Crown on th advice of the Privy Council, and six others are elected b the members of the medical profession as Direct Repre sentatives.

President of the General Council: Sir Donald MacAliste K.C.B. Members of the General Council: Dr. Norma Moore, chosen by the Royal College of Physicians of London Sir Henry Morris, Bart., Royal College of Surgeons o England; Mr. George Wilks, M.B., Apothecaries' Society o London; Mr. Arthur Thomson, M.B., University of Oxford Sir T. Clifford Allbutt, K.C.B., University of Cambridge; Si George Hare Philipson, M.D., University of Durham; Dr Frederick Taylor, University of London; Dr. Grafton Ellio Smith, Victoria University of Manchester; Dr. Rober Saundby, University of Birmingham; Dr. Richard Caton University of Liverpool; Dr. Alfred George Barrs, Universit of Leeds; Rutherfoord John Pye-Smith, F.R.C.S., Uni versity of Sheffield; Sir Isambard Owen, University o Bristol; and Dr. David Hepburn, University of Wales Dr. William Russell, chosen by the Royal College o Physicians of Edinburgh; Mr. James William Beema Hodsdon, F.R.C.S. Edin., Royal College of Surgeon of Edinburgh; David Neilson Knox, M.B., Facult of Physicians and Surgeons of Glasgow; Sir Thoma Richard Fraser, M.D., University of Edinburgh; Sir Donald MacAlister, K.C.B., M.D., University of Glasgow; Dr. John Theodore Cash, University of Aberdeen; and Dr. John Yule Mackay, University of St. Andrews. Sir John William Moore, chosen by the Royal College of Physicians of Ireland Sir Lambert Hepenstal Ormsby, Royal College of Surgeons in Ireland; Dr. Francis George Adye-Curran, Apothecaries' Hall of Ireland; Sir Charles Ball, Bart., University of Dublin; [vacant through death], National University of Ireland; and Sir William Whitla, M.D., Queen's University of Belfast. Nominated by His Majesty, with the advice of his Privy Council: Mr. Charles Sissmore Tomes, F.R.C.S., Dr. Arthur Newsholme, C.B., Sir Francis Henry Champneys, Bart., M.D., Dr. John Christie McVail, and Dr. James Little. Elected as Direct Representatives: Dr. Langley Browne, Dr. H. A. Latimer, Dr. J. A. MacDonald, Mr. Thomas Jenner Verrall, Dr. Norman Walker, and Dr. Leonard Kidd. Treasurers of the General Council: Mr. Charles Sissmore Tomes and Sir Henry Morris, Bart.

The Educational Curriculum.

Professional Education.—The course of professional study after registration occupies at least five years. The Final Examination in Medicine, Surgery, and Midwifery must not be passed before the close of the fifth academic year of medical study.

Registration and Preliminary Examination of Medical Students.—The following are the General Medical Council's Regulations in reference to the registration of students in medicine:—

Every medical student should be registered in the manner prescribed by the General Medical Council. The registration of medical students is placed under the charge of the Branch Registrars. Every person desirous of being registered as a medical student should apply to the Branch Registrar of the division of the United Kingdom in which he is residing;

and should produce or forward to the Branch Registrar a certificate of his having passed a preliminary examination as required by the General Medical Council, and evidence that he has attained the age of 16 years, and has commenced medical study at an institution approved by the Council. The Branch Registrar shall enter the applicant's name and other particulars in the Students' Register and shall give him a certificate of such registration. Each of the Branch Registrars shall supply to the several licensing bodies, medical schools, and hospitals, in that part of the United Kingdom of which he is registrar, a sufficient number of blank forms of application for the registration of medical students. The commencement of the course of professional study recognised by any of the qualifying bodies should not be reckoned as dating earlier than 15 days before the date of registration. In addition to the universities and schools of medicine there are many institutions where medical study may be commenced. Applications for special exceptions are dealt with by the Students' Registration Committee, which reports all such cases to the Council.

The Preliminary Examination in General Education, required to be passed previously to registration as a medical student, is as follows :—

1. English language, including grammar and composition. Paraphrasing; questions on British history and geography. 2. Latin, including grammar, translation from unprescribed Latin books, and translation of English passages into Latin. 3. Mathematics, comprising (*a*) arithmetic, (*b*) algebra, including easy quadratic equations, and (*c*) geometry, the subject matter of Euclid, Books I., II., and III., with simple deductions. 4. One of the following subjects: (*a*) Greek, (*b*) a modern language.

In some cases also the Council will not accept certificates without endorsement that all the required subjects are included. For a syllabus or for old examination papers application should be made to the Examining Bodies who can give details as to the requirements in regard to their own examinations.

A degree in Arts of any university of the United Kingdom or of the colonies or any other specially recognised university, or a certificate of having passed the final examination for a degree in Arts or Science of any university in the United Kingdom is considered a sufficient testimonial of proficiency.

Norman C. King, Registrar of the General Council and of the Branch Council for England, 299, Oxford-street, London, W.—James Robertson, Registrar of the Branch Council for Scotland, 54, George-square, Edinburgh.—Richard J. E. Roe, Registrar of the Branch Council for Ireland, 35, Dawson-street, Dublin. All communications should be addressed to "The Registrar" and not by name.

THE EXAMINING BODIES.

The following is a list of Examining Bodies whose examinations in general education are recognised by the General Medical Council as qualifying for registration as a medical or dental student.

It all cases it must be certified that all the required subjects have been passed at not more than two examinations.

Universities in the United Kingdom.

University of Oxford.—[1] Senior Local Examinations. (Certificates to be endorsed as fulfilling the Council's requirements.) Higher Local Examinations. Responsions. (Certificate to be supplemented by others showing that the required mathematical subjects have been passed.) Moderations.

University of Cambridge.—[1] Senior Local Examinations. (Certificates to be endorsed as fulfilling the Council's requirements.) Higher Local Examinations. Previous Examination. General Examination.

Oxford and Cambridge Schools' Examination Board.—[2] Higher Certificate Examination. [2] The School (or Leaving) Certificate Examination.

University of Durham.—Matriculation Examination of the Faculties of Medicine, Science, Letters, and Music.

University of London. — Matriculation Examination. Senior School Examination.

Victoria University of Manchester, University of Liverpool, University of Leeds, and University of Sheffield, Joint Matriculation Board of.—Matriculation Examination, Senior School Certificate (to include (*a*) English Language and Literature; (*b*) Latin; (*c*) Mathematics; (*d*) Greek or a Modern Language; and (*e*) and (*f*) any two other subjects as set out in the *Regulations* of the Board).

University of Birmingham.—Matriculation Examination. Senior School-leaving Certificate.

University of Bristol.—Matriculation Examination. School Certificate Examination.

University of Wales.—Matriculation Examination.

Universities of Scotland.—Preliminary Examination of the Joint Board of Examiners of the Scottish Universities for Graduation in Medicine and Surgery. Preliminary Examination of the Joint Board of Examiners of the Scottish Universities for Graduation in Arts or Science.

University of St. Andrews.—Final examination for the diploma of L.L.A.

University of Dublin.—(*a*) Junior Freshman Term Examination (exclusive of Trigonometry). (*b*) Special Preliminary Examination to be held in March, the standard and subjects of which shall be those of a Junior Freshman Examination (exclusive of Trigonometry). (*c*) Junior Exhibition Examination on obtaining marks of sufficient merit in the subjects of (*a*) or (*b*). (*d*) Examinations for the first, second, third, or fourth year in Arts. (Certificate to be signed in the approved form by the Medical Registrar of the University.)

Queen's University of Belfast.—Matriculation Examination.

National University of Ireland.—Matriculation Examination.

Government Examinations held in the United Kingdom.

Scotch Education Department.—Leaving Certificate Examinations: passes in Lower Grade. Leaving Certificate Examinations. Intermediate Certificate.

Intermediate Education Board of Ireland.—Middle Grade Examination, with Honours in three subjects. Senior Grade Examinations.

Central Welsh Board.—Senior Certificate Examinations.

Examinations by Chartered Bodies held in the United Kingdom.

College of Preceptors.—Examinations for the Senior Certificate. Preliminary Examination for Medical Students.

Educational Institute of Scotland.—Preliminary Medical Examination.

Royal Colleges of Physicians and Surgeons in Ireland.—Preliminary Examination.

Indian, Colonial, and Foreign Universities and Colleges.

Every Certificate from Indian, Colonial, and Foreign Universities and Colleges must contain evidence that the Examination has been conducted by or under the authority of the Body granting it, must include all the subjects required by the General Medical Council, and must state that all the subjects of Examination have been passed in at not more than two examinations; copies of the form of the required Certificate are supplied by the Registrar of the Council for the purpose. In the case of Natives of India or other Oriental countries whose vernacular is other than English an Examination in a Classical Oriental Language (e.g., Sanskrit, Arabic, Chinese) may be accepted instead of an Examination in Latin. The German Abiturienten-Examen of the Gymnasia and Real-gymnasia and the examinations entitling to the French diplomas of Bachelier ès Lettres and Bachelier ès Sciences and other corresponding Entrance Examinations to the Universities in Europe are recognised by the General Medical Council.

The remainder of the curriculum, though all under the supervision of the Council, is in detail in the hands of the various degree- and diploma-granting bodies whose representatives are members of the General Medical Council. In the next pages we give the regulations of the various examining bodies, but it must always be remembered that the examinations are under the supervision of the General Medical Council, who visit the various centres in turn and closely inspect the procedure.

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[1] A special leaflet showing the Council's requirements will be sent on application.

[2] For particulars see Regulations issued by the Board.

THE
MEDICAL EXAMINING BODIES
AND
SCHOOLS OF THE UNITED KINGDOM.

A GUIDE TO THE FACILITIES FOR OBTAINING THE VARIOUS MEDICAL DEGREES AND OTHER QUALIFICATIONS AVAILABLE IN THE BRITISH ISLANDS.[1]

I.—ENGLAND AND WALES.

THE UNIVERSITIES.

UNIVERSITY OF OXFORD.

THERE are two degrees in Medicine, *B.M. and D.M.*, two degrees in Surgery, *B.Ch. and M.Ch.*, and two diplomas, *Public Health* and *Ophthalmology*.

Graduates in Arts (B.A. or M.A.) are alone eligible for the degrees. The most convenient course for the B.A. degree for intending graduates in Medicine is to take Responsions, the Preliminary Science Examinations mentioned below, and the Final Honour School of Physiology. In order to obtain the degrees of B.M. and B.Ch. the following examinations must be passed:—1. Preliminary subjects: Mechanics and Physics, Chemistry, Animal Morphology, and Botany. 2. Professional. (*a*) First Examination: Subjects—Organic Chemistry, unless the candidate has obtained a first or second class in Chemistry in the Natural Science School; Human Physiology, unless he has obtained a first or second class in Animal Physiology in the Natural Science School; Human Anatomy. (*b*) Second Examination: Subjects—Medicine, Surgery, Midwifery, Pathology, Forensic Medicine with Hygiene, Materia Medica and Pharmacology. The approximate dates of the examinations are as follows:—Preliminaries—Mechanics, Physics, and Chemistry, December and June; Animal Morphology, December and March; Botany, March and June; Professional (First and Second B.M.), June and December.

The First Examination for the degrees of B.M. and B.Ch. may be passed as soon as the Preliminary Scientific Examinations have been completed. Anatomy and Physiology are to be passed together, and Organic Chemistry may be taken before or after these have been passed.

The Second Examination may be passed after the completion of the first, but Pathology, Hygiene, and Materia Medica and Pharmacology may be taken before or with the remaining subjects. Before admission to the Second Examination candidates must present certificates of attendance on a course of laboratory instruction in Practical Pathology and Bacteriology and of having acted as post-mortem clerk for three months, surgical dresser for six months, and clinical clerk for six months. Also they must produce certificates of instruction in Infectious and Mental Diseases, and of attendance on Labours, of proficiency in the practice of Vaccination and Anæsthetics, and of having attended a course of Practical Pharmacology. Also in respect of the First Examination candidates must present certificates showing that they have dissected the whole body once and have attended courses of laboratory instruction in Practical Histology and Practical Physiology.

The degree of D.M. is granted to Bachelors of Medicine of the University provided they have entered their thirty-ninth term and have composed on some medical subject a dissertation which is approved by the professors in the Faculty of Medicine and examiners for the degree of B.M. whose subject is dealt with. A book published within two years of the candidate's application for the degree may be substituted for a dissertation. The Regius Professor may direct the dissertation to be read in public. The degree of M.Ch. is granted to Bachelors of Surgery of the University who have entered their twenty-seventh term, who are members of the surgical staff of a recognised hospital, or have acted as Dresser or House Surgeon in such a hospital for six months, and who have passed the M.Ch. examination in Surgery, Surgical Anatomy, and Surgical Operations. This examination is held annually, in June, at the end of the Second B.M. Examination.

Diploma in Ophthalmology.—There is an examination once in each year in the Theory and Practice of Ophthalmology for the purpose of granting certificates of proficiency therein, styled Diplomas in Ophthalmology. The examination is under the supervision of the Board of the Faculty of Medicine, which has power to make regulations as to the subjects of the examination, the time at which the examination is held, and the conditions of admission. No candidate is admitted to the examination for the diploma who has not pursued at Oxford a course of study in Ophthalmology approved by the Board of the Faculty of Medicine, and extending over a period of at least three months. The fee for admission to the examination is £15, unless the candidate is a graduate of the University, in which case it is £10 only.

Public Health.—See page 614.

Travelling Fellowship, Scholarships, and Prizes.—A Radcliffe Travelling Fellowship is awarded annually after an examination held in February. It is tenable for three years and is of the annual value of £200. The examination is in Physiology, Pathology, and Hygiene, and is partly "practical." Candidates must be graduates in Medicine of the University. The holder must travel abroad for the purpose of medical study. Application should be made to the Radcliffe Examiners, Radcliffe Library, University Museum. A Rolleston Memorial Prize is awarded once in two years to members of the Universities of Oxford and Cambridge of not more than ten years' standing for an original research in some Biological subject, including Physiology or Pathology. The Radcliffe Prize, founded by University College (1907), is of the value of £50 and is awarded biennially for research in some branch of medical science. The prize will be awarded in 1915. Candidates must send in their memoirs to the University Registry on or before Dec. 1st, 1914. The Theodore Williams Scholarships of the value of £50 each are awarded annually in the subjects of Anatomy, Physiology, and Pathology. The Scholarships in Science which are offered by several Colleges are open to those who intend to pursue Medicine. The value of these scholarships is usually £80 a year for four years.

More detailed information may be obtained from the University Calendar; from the Examination Statutes, 1902, from the Student's Handbook to the University (all of which are published by the Clarendon Press); from the Regius Professor of Medicine; and from the Professors in the several departments of medical science.

Professors — Botany (Sherard): S. H. Vines, M.A. Chemistry (Waynflete): W. H. Perkin, D.Sc. Comparative Anatomy (Linacre): G. C. Bourne, D.Sc. Human Anatomy: A. Thomson, M.A. Lecturer in Applied Anatomy: A. P. Dodds-Parker, B.M. Medicine (Regius): Sir W. Osler, Bart., D.M. Litchfield Lecturer: Wm. Collier, M.D. Surgery, Litchfield Lecturer: A. P. Dodds-Parker, B.M. Natural Philosophy (Sedleian): A. E. H. Love, D.Sc. Physics (Wykeham): J. S. E. Townsend, M.A. Physiology (Waynflete): C. S. Sherrington, M.D. Zoology: E. B. Poulton, D.Sc. Pathology: G. Dreyer, M.D. Lecturer: E. W. A. Walker, D.M. Pharmacology (Reader): James Gunn, M.D.

In addition to the University lectures and classes the several Colleges provide their undergraduates with tuition for all examinations up to the B.A. degree.

In the Radcliffe Infirmary and County Hospital clinical instruction is given by the Regius Professor of Medicine, the Litchfield Lecturers in Medicine and Surgery, and the other physicians and surgeons. Instruction is also given in post-mortem work and Clinical Pathology in connexion with the courses in Pathology.

UNIVERSITY OF OXFORD: RADCLIFFE INFIRMARY AND COUNTY HOSPITAL.—Courses of instruction are given in connexion with the Oxford University Medical School. These include (1) a course in Practical Medicine by the Regius Professor of Medicine; (2) Clinical lectures by the Litchfield Lecturers in Medicine and Surgery; and (3) tutorial instruction and demonstrations in special Regional Anatomy (medical and surgical). methods of Medical and Surgical Diagnosis, and Surgical Manipulation. (4) Pathological demonstrations and instruction in post-mortem work are given by the Assistant Pathologist. Practical Pharmacy is taught in the Radcliffe Dispensary. Opportunities are offered to students who wish to act as surgical dressers and clerks. The Hospital contains 170 beds. Honorary Physician: Dr. E. B. Gray. Honorary Surgeon: Mr. A. Winkfield. Active Consulting Physician: Professor Sir William Osler, Bart. Acting Staff:—Honorary

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[1] *Tropical Medicine and Hygiene.*—Information on these subjects is given on p. 614 under the section on Public Health.

Physicians: Dr. W. Tyrrell Brooks, Dr. W. Collier, and Dr. E. Mallam. Honorary Assistant Physician and Medical Registrar: Dr. A. Waters. Electro-Therapeutic Physician: Dr. W. J. Turrell. Honorary Surgeons: Mr. Horatio P. Symonds, Mr. R. H. A. Whitelocke, and Mr. A. P. Dodds-Parker. Honorary Assistant Surgeon and Surgical Registrar: Mr. E. C. Bevers. Consulting Ophthalmic Surgeon: Mr. P. E. H. Adams. Honorary Consulting Pathologist: Professor Georges Dreyer. Honorary Assistant Pathologist: Dr. A. G. Gibson. Consulting Dental Surgeon: Mr. E. A. Bevers. Honorary Radiographer: Mr. R. H. Sankey. House Physician: Dr. T. O. Thompson. House Surgeon: Mr. D. McDonald. Casualty House Surgeon: Mr. E. H. Udall.

UNIVERSITY OF CAMBRIDGE.

The student must enter at one of the Colleges, or as a non-collegiate student, and keep nine terms (three years) by residence in the University. He must pass the Previous Examination in Classics, Mathematics, &c., which may, and should if possible, be done before he comes into residence in October, or he may obtain exemption through the Oxford and Cambridge Schools Examination Board, the Oxford or Cambridge Senior Local Examinations, the London Matriculation Examination, the Scotch Education Department, Responsions at Oxford, and the Joint Matriculation Board of the Universities of Manchester, Liverpool, Leeds, and Sheffield, or by being graduates of other Universities in the United Kingdom. He may then devote himself to medical study in the University, attending the hospital and the medical lectures, dissecting, &c. Or he may, as nearly all students now do, proceed to take a degree in Arts, either (1) by passing either (*a*) the General Examination and one Special Examination, or (*b*) two Special Examinations for the ordinary B.A. degree, or going out in one of the Honour Triposes. The Natural Sciences Tripos is taken most frequently, as some of the subjects are practically the same as those for the first and second M.B.

For the degree of *Bachelor of Medicine* (*M.B.*) five years of medical study are required. This time may be spent in Cambridge or at one of the recognised Schools of Medicine. The first three or four years are usually spent in Cambridge, the student remaining in the University till he has passed, say, the examination for the Natural Sciences Tripos and the first and second examinations for M.B. Hospital practice and many of the requisite lectures may be attended in Cambridge, and a certain number of students remain to attend lectures and hospital practice until they have passed the second part of the second examination for M.B. The laboratories for Pathology, Bacteriology, and Pharmacology are well equipped. Addenbrooke's Hospital makes provision for the necessary clinical training.

There are three examinations for M.B. The *first* includes Chemistry and other branches of Physics and Elementary Biology. These parts may be taken together or separately. The *second* is divided into two parts—viz., (1) Human Anatomy and Physiology; and (2) Pharmacology and General Pathology. The *third* is also divided into two parts: (1) Principles and Practice of Surgery (including Special Pathology and Midwifery and Diseases Peculiar to Women); and (2) Principles and Practice of Physic (including Diseases of Children, Mental Diseases, Medical Jurisprudence), Pathology (including Hygiene and Preventive Medicine), and Pharmacology (including Therapeutics and Toxicology). The examinations are partly in writing, partly oral, and partly practical, in the hospital, in the dissecting room, and in the laboratories. An Act has then to be kept in the Public Schools, by the candidate reading an original dissertation composed by himself on some subject approved by the Regius Professor of Physic.

Candidates who have passed both parts of the third M.B. examination are admitted to the registrable degree of *Bachelor of Surgery* (*B.C.*) without separate examination and without keeping an Act.

The degree of *Doctor of Medicine* (*M.D.*) may be taken three years after that of M.B. or four years after that of M.A. An Act has to be kept, consisting of an original Thesis sustained in the Public Schools with *vivâ voce* examination; and a short extempore essay has to be written on a topic taken from the general subject of his thesis, whether it be Physiology, Pathology, Pharmacology, the Practice of Medicine, State Medicine, or the History of Medicine.

For the degree of *Master of Surgery* (*M.C.*) the candidate must have passed all the examinations for B.C., or, if he is an M.A., have obtained some other registrable qualification in surgery. He is required either (1) to pass an examination in Principles and Practice of Surgery, Surgical Anatomy and Surgical Operations, and Pathology, and to write an extempore essay on a Surgical Subject; or (2) to submit to the Medical Board original contributions to the advancement of the Science or Art of Surgery. Before he can be admitted to the examination two years at least must have elapsed from the time when he completed all required for the degree of B.C. Before submitting original contributions he must have been qualified at least three years.

An abstract of the Regulations and Schedules of the range of the examinations in Chemistry, Physics, Biology, Pharmacology, and General Pathology may be obtained upon sending a stamped directed envelope to the Registrary, the Registry, Cambridge.

The Professors, Readers, and Lecturers in the various subjects are as follows. Professors—Anatomy: A. Macalister, M.D. Biology (Quick): G. H. F. Nuttall, Sc.D. Botany: A. C. Seward, M.A. Chemistry: W. J. Pope, M.A. Natural Philosophy (Jacksonian): Sir James Dewar, M.A. Pathology: G. Sims Woodhead, M.A. Physic (Regius): Sir T. Clifford Allbutt, M.D. Physiology: J. N. Langley, Sc.D. Surgery: F. H. Marsh, Sc.D. Therapeutics (Downing Professor of Medicine): J. B. Bradbury, M.D. Zoology, &c.: J. Stanley Gardiner, M.A. Readers—Botany: F. F. Blackman, M.A. Chemical Physiology: F. G. Hopkins, M.A. Zoology: A. E. Shipley, Sc.D. Lecturers—Bacteriology: G. S. Graham-Smith, M.D., and Louis Cobbett, M.D. Botany: A. G. Tansley, M.A. Chemistry: W. J. Sell, Sc.D., and H. J. H. Fenton, Sc.D. Organic Chemistry: S. Ruhemann, M.A. Chemistry and Physics as Applied to Hygiene: J. E. Purves, M.A. Advanced Morphology of Vertebrates: H. Gadow, M.A. Advanced Morphology of Invertebrates: A. E. Shipley, Sc.D. Pathology (Huddersfield): T. S. P. Strangeways, M.A. Physics: G. F. C. Searle, Sc.D., and C. T. R. Wilson, M.A. Pharmacology: W. E. Dixon, M.A. Advanced Physiology: W. H. Gaskell, M.D., and L. E. Shore, M.D. Physiology: H. K. Anderson, M.D. Physiological and Experimental Psychology: W. H. R. Rivers, M.A. Medical Jurisprudence: B. Anningson, M.D. Medicine: L. Humphry, M.D. Physiological Anthropology: W. L. H. Duckworth, M.D., Sc.D.

University Prize in Medicine.—There is only one University Prize in Medicine. The Raymond Horton Smith Prize (value £19) is awarded to that candidate for the degree of M.D. who presents the best thesis for the degree during the academical year, provided that he has taken honours in a tripos examination. Medical Studies are endowed by the numerous Natural Science scholarships at the various colleges, information about which can be obtained from the respective Tutors.

ADDENBROOKE'S HOSPITAL.—Clinical Lectures in Medicine and Surgery, in connexion with Cambridge University Medical School, are given at this hospital twice a week during the academical year; and practical instruction in Medicine and Surgery is given in the wards and out-patients' rooms by the physicians and surgeons daily during the term time and vacations. The fee for pupilship is 3 guineas a term. Physicians: Professor Sir Clifford Allbutt, Professor Bradbury, and Dr. L. Humphry. Assistant Physicians: Dr. E. Lloyd Jones and Dr. J. Aldren Wright. Surgeons: Professor F. Howard Marsh, Mr. G. E. Wherry, Mr. F. Deighton, and Dr. Griffiths. Assistant Surgeon: Mr. Arthur Cooke. All communications by students should be made to Dr. J. Aldren Wright.

UNIVERSITY OF LONDON.

The University of London was established by Royal Charter in 1836 as an examining and degree conferring body with affiliated colleges but no direct teaching functions. In 1900 it was reconstituted under the Act of Parliament 1898 and became a teaching as well as an examining body. Many schools already existing became constituent colleges, including all the metropolitan medical schools. Teachers were also appointed in special subjects to give lectures at the University. The question of the centralisation of preliminary scientific studies has for some years occupied the very serious attention of the University and its constituent schools, but has only partially been carried into effect at present. The whole subject of medical education in London has lately been under consideration, and far-reaching changes were proposed in the Report of the Royal Commission on University Education in London which was issued last year. The Commissioners' proposals have provoked considerable discussion among those who hold divergent views on the University problem in London, but it cannot be said that during the past 12 months the problem has come much nearer to a solution.

The medical degrees awarded by the University are those of M.D., M.S., and M.B., B.S., the two latter being now given together as a graduating degree, whereas formerly the M.B. alone was a qualifying degree and the B.S. was taken optionally as a separate examination. The medical degrees of the University of London are granted to both internal and external students, the former being students of the constituent schools and colleges of the University.

Teaching Staff.—The teaching staff of the University is organised under two heads: 1. Appointed teachers—i.e., such as are appointed by, and are paid out of the funds of, the University. 2. Recognised teachers—i.e., those who have been appointed and are paid by the several schools of the University and other institutions at which instruction is given under the auspices of the University, and who have been recognised by the Senate as conducting work of University standard. Courses by non-recognised teachers may also be approved in schools of the University. Thus in the Faculty of Medicine there are at present nine appointed teachers, and there are 405 recognised teachers belonging to the various metropolitan medical schools. There are 235 recognised teachers in the Faculty of Science. The lecturers in the Medical Sciences and the professors in the Faculties of Medicine in University College, London, and King's College, London, will be found enumerated under their respective medical schools.

Internal and External Students.—Matriculated students of the University may be either internal or external. Internal students of the University are students who have matriculated at the University and who are pursuing a course of study approved by the University, either (*a*) under the direct control of the University or a committee appointed thereby; or (*b*) under one or more of the appointed or recognised teachers of the University. Centres for preliminary and intermediate medical studies have been established by the University at University and King's Colleges. Internal students must pursue their studies at one of the above centres, or at one of the medical schools connected with the University. These are University College Hospital, King's College Hospital, St. Bartholomew's Hospital, the London Hospital, Guy's Hospital, St. Thomas's Hospital, St. George's Hospital, the Middlesex Hospital, St. Mary's Hospital, Charing Cross Hospital, Westminster Hospital, and the London (Royal Free Hospital) School of Medicine for Women. The London School of Tropical Medicine and the Lister Institute of Preventive Medicine are also recognised as schools of the University in special departments. External students are all other matriculated students, and may pursue their studies at other universities and medical schools, presenting themselves for examination at the University of London.

The Matriculation Examination.—Students before being admitted to the University must either (1) have passed the Matriculation or the School Examination (Matriculation or Higher Standard), or (2) have been exempted therefrom under Statute 116 of the University which recognises certain other examinations in its lieu. Such exemption is granted to graduates of British and certain Colonial Universities, and under certain conditions to matriculated students of Colonial Universities and the Universities of Manchester, Liverpool, Leeds, and Sheffield, to holders of the senior local certificates of the Universities of Oxford and Cambridge, the higher certificate and the school certificate of the Oxford and Cambridge Schools Examination Board, the Scotch school-leaving certificate, the senior grade certificate of the Intermediate Examination Board for Ireland, the matriculation certificate of the Joint Board of the Northern Universities, and to students who have passed their previous examination at Cambridge. These exemptions allow of a wide choice of examinations to students who intend to take the University course. The examinations for matriculation take place three times in each year—namely, on Sept. 15th (if that day be a Monday, or if not, on the Monday next preceding the 15th), on the second Monday in January, and on the second Monday in June (or July, as may be hereafter determined). The examinations in January and June (or July), but not that in September, may be held not only at the University of London, but also, under special arrangement, in other parts of the United Kingdom or in the Colonies. (Neither Botany nor Drawing can be chosen for subjects in the Colonies.) It is noteworthy that the September examination affords an opportunity for prospective medical students who may have failed at the midsummer examination to pass the Matriculation in time to enter upon their medical course in October. Students who pass the January Matriculation are able to enter for the First Examination for Medical Degrees in the following July under certain conditions in the case of internal students. Every candidate must, on or before August 20th for the September examination, on or before Nov. 25th for the January examination, and on or before April 25th for the June (or July) examination, apply by postcard to the Principal for a form of entry, of which the first in order must be returned 14 days before the commencement of the September examination, the second on or before Dec. 1st, and the third on or before May 1st, accompanied in the same cover by a certificate showing that the candidate has completed his sixteenth year, and by his fee for the examination. A certificate from the Registrar-General in London or from the superintendent registrar of the district, or a certified copy of the baptismal register, or a declaration of the candidate's age, made before a magistrate by his parent or guardian, or by the candidate if of full age, will be accepted. As candidates cannot be admitted after the list is closed, any candidate who may not have received a form of entry within a week after applying for it should communicate immediately with the Principal, stating the exact date of his application and the place where it was posted. Every candidate must pay a fee of £2. If he withdraws his name before the last day of entry it shall be returned to him. If he fails to present himself he shall be allowed to enter for a subsequent Matriculation within eight months on payment of £1. If he retires after the commencement of the examination or fails to pass it the full fee of £2 shall be payable on every re-entry. Candidates must show a competent knowledge of each of the following five subjects, according to the details specified: 1. English—Composition, Précis-writing, salient facts in English History and Geography. A subject for an essay, to be chosen by candidates, to test power of expression, thought, and arrangement and general knowledge. 2. Elementary Mathematics —Arithmetic, Algebra (including quadratic equations and graphs of simple functions), and the subjects of Euclid (Books I. to IV). 3. Latin, or Elementary Mechanics, or Elementary Physics (Heat, Light, and Sound), or Elementary Chemistry, or Elementary Botany. 4 and 5. Two of the following subjects, neither of which has been taken under Section 3 (if Latin be not taken, one of the other subjects must be another language from the list): Latin, Greek, French, German, Ancient History, Modern History, Logic, Physical and General Geography, Geometrical and Mechanical Drawing, Mathematics (more advanced), Elementary Mechanics, Elementary Chemistry, Elementary Physics (Heat, Light, and Sound), Elementary Physics (Electricity and Magnetism), and Botany. One of the subjects may be some other language than Latin, Greek, French, and German, subject to the approval of the Matriculation Board, provided that six months' notice is given before the beginning of the Matriculation examination for which they enter and an additional fee paid. Additional subjects, of which, however, candidates must give notice two months previous to the examination, are: Arabic, Sanskrit, Spanish, Portuguese, Italian, Hebrew, Chinese, Modern Dutch, and Zoology.

Provincial Examinations for Matriculation.—These examinations are appointed by the Senate from time to time upon the application of any city, institution, or college desiring to be named as a local centre for one or more examinations, and are carried on simultaneously with the examinations in London under the supervision of sub-examiners also appointed by the Senate. Candidates wishing to be examined at any provincial centre must give notice upon their forms of entry to the Principal of the University, who will then make all necessary arrangements. Besides the University fee, a fee usually varying from £1 to £3 is charged by the local authorities and must be paid *at the* *local centre* immediately before the commencement of the several examinations.

Faculty of Medicine.—The Faculty of Medicine grants the joint degrees of M.B., B.S. (*Bachelor of Medicine and Surgery*), and the higher separate degrees of M.D. (*Doctor of Medicine*) and M.S. (*Master of Surgery*).

It is noteworthy that the curriculum for the medical degrees is now five and a half years from the time of matriculation, except in the case of students who have passed the Preliminary Scientific Examination or the First Examination for Medical Degrees before July, 1910, and that the examinations formerly known as the Preliminary Scientific, the Intermediate, and the Final Examination in Medicine are now respectively entitled the First, Second, and Third Examinations for Medical Degrees. Part II. of the former Preliminary Scientific Examination has now been made Part I. of the Second Examination.

A. *Internal Students.*—In order to be admitted to the Bachelor's degrees a student must normally, after registration as an internal student, have: (1) Attended prescribed courses of study for five and a half years in one or more schools of the University. (2) Passed the following examinations, under the conditions mentioned below: (*a*) The First Examination for Medical Degrees in Inorganic Chemistry, Physics, and General Biology; (*b*) the Second Examination for Medical Degrees: Part I., Organic and Applied Chemistry; Part II., Anatomy, Physiology, and Pharmacology, including Pharmacy and Materia Medica; (*c*) the Third Examination for Medical Degrees, or M.B., B.S. Examination in Medicine, including Therapeutics and Mental Diseases, Surgery, Midwifery and Diseases of Women, Pathology, Forensic Medicine and Hygiene.

B. *External Students.*—To be admitted to the Bachelor's degrees an external student must (1) have passed the Matriculation examination or have been exempted therefrom under Statute 116 not less than five and a half years previously; (2) have passed subsequent examinations similar to those required of an internal student; and (3) have been engaged in professional studies during the five and a half years subsequently to Matriculation and four and a half years subsequently to passing the First Examination for Professional Degrees at one or more of the medical institutions or schools recognised by this University for the purpose, one year at least of the four and a half years to have been spent in one or more of the recognised institutions or schools in the United Kingdom.

The First Examination for Medical Degrees (Inorganic Chemistry, Physics, and General Biology) will take place twice in each year, commencing on the Monday following Dec. 10th and on the second Monday in July. It must as a rule be passed by internal students not less than one academic year after matriculation and by external students not less than nine months after matriculation. Candidates, however, who have passed or been admitted under Statute 116 as exempt from matriculation in the preceding January will be admitted to the first examination for medical degrees in July as external students, or as internal students if they have attended the prescribed course of study throughout the session and obtained the consent of the authorities of their school or institution. Every candidate must apply (internal students to the academic registrar and external students to the external registrar) for a Form of Entry on or before Nov. 1st or May 24th, which must be returned, accompanied by the proper fee, not later than Nov. 8th for the December examination or June 1st for the July examination. The fee is £5 for each entry to the whole examination, provided that all the subjects are taken at one time. When less than the whole examination is taken at one time it is £2 for each subject. The examination will include two papers in each of the three subjects, three hours being allowed for each paper. Three hours each will be devoted to practical examinations in Inorganic Chemistry and Physics and six hours to a practical examination in General Biology. *Candidates must, at their first entry, present themselves in all three subjects.* Candidates failing in one subject only may, with permission, present themselves for re-examination in that subject on payment of the proper fee.

The Second Examination for Medical Degrees (Part I.): Organic Chemistry.—This examination will take place twice in each year, commencing on the Thursdays following the third Monday in March and the second Monday in July. No candidate will be admitted to this examination within six months of having passed the First Examination. Every candidate must apply on or before Feb. 8th or May 24th for a form of entry, which must be returned not later than Feb. 15th for the March examination or June 1st for the July examination. The fee is £2 for the first and every subsequent entry. The examination will consist of a paper and practical work, and may include oral questions in Organic Chemistry, which is "to be treated in an elementary manner, and with special regard to its applications in physiology, pharmacology, and pathology."

The Second Examination for Medical Degrees (Part II.) takes place twice in every year, commencing on the third Monday in March and on the first Monday in July. The subjects of the examination are Human Anatomy and Embryology, Physiology, and Pharmacology, including Pharmacy and Materia Medica. No candidate shall be admitted to the examination unless he has passed the First Examination for Medical Degrees at least 18 months previously, and has passed Part I. of the Second Examination for Medical Degrees. Internal students must have completed the courses of study prescribed for them by the University, and external students must produce certificates of having subsequently to having passed the First Examination for Medical Degrees been students during one and a half academic years at one or more of the medical institutions or schools recognised by the University and of having attended (1) a course of not less than 100 lectures and demonstrations on Human Anatomy; (2) a course of Dissections for not less than 12 months; (3) a course of not less than 60 lectures on Physiology; (4) adequate courses of Experimental Physiology, Histology, and Physiological Chemistry; (5) adequate courses of lectures and demonstrations on Pharmacology, Pharmacy, and Materia Medica; and (6) Practical Pharmacy for not less than two months. These certificates must be transmitted to the Registrar at least not later than Feb. 15th or June 1st for the March and July examinations respectively, applications for forms of entry having been made by Feb. 1st or May 17th. The fee for each entry to the whole examination is £8. For re-examination in one subject it is £4.

M.B., B.S. Examination.—The M.B., B.S. examination takes place twice in each year, commencing on the fourth Monday in October and on the first Monday in May. No candidate except those who pass the Preliminary Science or First Examination for Medical Degrees before July will be admitted to this examination within three academic years from the date of passing in Anatomy and Physiology at the Second Examination (Part II.), nor unless he has completed that examination together with prescribed courses of study or practice summarised below. (1) Principles and Practice of Medicine; (2) Clinical Methods and Physical Diagnosis; (3) Insanity (with clinical demonstrations at a recognised Asylum); (4) Therapeutics; (5) Vaccination; (6) Principles and Practice of Surgery; (7) Operative Surgery, Surgical Anatomy, Practical Surgery, and the Administration of Anæsthetics; (8) Diseases of the Eye, Ear, and Throat; (9) Lectures and Demonstrations on Midwifery and Diseases of Women; (10) Practical Midwifery, the conduct of at least 20 Labours, and practice as a Clinical clerk in Gynæcological work; (11) Pathology and Bacteriology; (12) work of the Post-mortem room; (13) Forensic Medicine; and (14) Hygiene. He must also have attended the Medical and Surgical practice of a recognised hospital for two years and a course of instruction at a recognised Fever Hospital for two months. He must have had clinical instruction and must have held the posts of medical clinical clerk and surgical dresser for periods of six months each. For internal students the above form the subjects of the last two and a half years of study as prescribed by the University. Forms of entry for the examination must be applied for on or before Sept. 21st or March 24th and returned with certificates of having undertaken the above-mentioned courses of study by Sept. 28th or April 1st respectively. Candidates will be examined in Medicine (including Therapeutics and Mental Diseases), Pathology, Forensic Medicine and Hygiene, Surgery, Midwifery, and Diseases of Women. The subjects may be divided into two groups—namely: (1) Medicine, Pathology, Forensic Medicine, and Hygiene; and (2) Surgery, Midwifery, and Diseases of Women. These groups may be taken either separately or together. The fee is £10 for each entry to the whole examination and £5 for examination or re-examination in either group. There will be no separate examination held for Honours, but the list of candidates who have passed will be published in two parts—namely, an Honours list and a Pass list. Bachelors of Medicine of this University who graduated in or before May, 1904, may obtain the B.S. degree by passing the Surgical part of the M.B., B.S. examination.

Doctor of Medicine.—The examination for this degree takes place twice in each year, commencing on the first Monday in December and on the first Monday in July. Candidates must have taken the degrees of M.B., B.S. not less than two years previously, but for those who have taken the M.B , B.S. degrees with honours or have done certain original work, or have had such exceptional experience in the branch in which they present themselves as may be approved by the University, this period of delay may be reduced to one year. Those who have obtained their M.B. degrees in or before May, 1904, will not be required to hold the degree of B.S. before seeking the doctorate. Candidates may present themselves for examination in one of the following branches, namely: (1) Medicine; (2) Pathology; (3) Mental Diseases; (4) Midwifery and Diseases of Women; (5) State Medicine; and (6) Tropical Medicine. In most branches a six months' appointment at an approved hospital, subsequently to qualification, is necessary. Certain conditions have to be fulfilled in each case, varying according to the nature of the branch in question. Candidates who have passed or presented themselves for the M.D. examination in one branch may present themselves for examination in another branch at a subsequent examination. Any candidate for the degree of M.D. may transmit to the Registrar, not less than two months before the commencement of the examination, a thesis or published work having definite relation to the branch of Medicine in which he is a candidate, and if the thesis be approved by the examiners the candidate may be exempted from the written examination in that subject. The fee is £20, and for re-examination £10.

In Branches I. and IV. candidates (other than those who present a thesis) for the July examination must apply to the Academic or External Registrar for forms of entry on or before May 20th, which must be returned not later than June 1st, and candidates (other than those who present a thesis) for the December examination must apply for forms of entry on or before Oct. 20th, which must be returned not later than Nov. 1st. The corresponding dates for application for, and return of, forms of entry for candidates in Branches II., III., V., and VI., and candidates in other branches who present a thesis, are April 20th and May 1st for the July examination; and Sept. 20th and Oct. 1st for the December examination. Forms of entry must be returned duly filled up, accompanied by the proper fee, and by the certificates required for the branch concerned.

Master in Surgery.—The examination for the degree of Master in Surgery takes place twice in each year and commences on the first Monday in December and on the first Monday in July. Candidates must produce certificates of having taken the degrees of M.B. and B.S. not less than two years previously (with certain exemptions, as in the examination for the M.D.). They may present themselves for examination either in Branch I., Surgery, including Surgical Pathology and Anatomy, a Clinical examination, and operations on the dead body; or in Branch II., Dental Surgery, including Oral Anatomy, Physiology, Surgery, and Therapeutics, and a practical examination in Bacteriology. Candidates must have held for at least six months a Surgical (Branch I.) or a Dental (Branch II.) resident or non-resident hospital appointment approved by the University, subsequently to having obtained a registrable qualification to practise medicine. Any candidate for the degree of M.S. may transmit to the Registrar, not later than two months before the commencement of the examination, a thesis or published work having definite relation to Surgery (Branch I.), or Dental Surgery (Branch II.), and if the thesis be approved by the examiners the candidate may be exempted from the written examination. The fee is £20, and for re-examination £10.

Full details of the prescribed curricula of study, with the syllabus for each examination and of certain exemptions which the Senate has power to grant in respect to certain examinations and the courses of study presented for them, and the names of the recognised Internal and External Schools of the University, can be obtained free on application to the Academic Registrar, University of London, South Kensington, S.W.

MEDICAL SCHOOLS OF THE UNIVERSIT OF LONDON.[1]

ST. BARTHOLOMEW'S HOSPITAL AND COLLEGE.—T clinical practice of the hospital is large. The hospi contains 757 beds, of which 687 are for patients in t hospital at Smithfield and 70 for convalescent patients Swanley.

This hospital receives within its walls over 8000 i patients annually and its out-patients and casualties amou to more than 78,000 annually.

Special departments have been organised for Diseases Women and Children, the Eye, Ear, Larynx, and Skin, well as for Orthopædic and Dental Surgery in whic Chief Assistants and Clinical Assistants are appointe annually. There are Electrical and X Ray Department Surgical operations take place every day at 1.30 P.M. an Surgical Consultations are held on Thursdays at the sam hour. Medical Consultations are held on Thursdays 3.15 P.M. The physicians and surgeons deliver clinic lectures weekly during both the winter and the summ sessions. Clinical Lectures on all special subjects are als given. The visits of the physicians and surgeons are mad at 1.30.

Ten house physicians and ten house surgeons ar appointed annually. During their first six month of office they act as "junior" house physicians an house surgeons and receive a salary of £25 a yea During their second six months they become "senior house physicians and house surgeons and are provide with rooms by the hospital authorities and receive £8 a year as salary. A resident midwifery assistant, a ophthalmic house surgeon, and a house surgeon for disease of the throat, nose, and ear are appointed every six months and are provided with rooms and receive a salary of £80 year. Three resident anæsthetists are appointed annually, and receive salaries of £120, £100, and £100 respectively, wit rooms. An extern midwifery assistant is appointed every thre months, and receives a salary of £80 a year. The clinica clerks, the obstetric clerks, the clerks to the medical outpatients, the dressers to the surgical in-patients and to the out-patients, and the dressers in the special departments are chosen from the students. All the appointments are now free. A residential college is attached to the hospital.

New Buildings.—The new buildings comprise residential quarters for the resident staff, new casualty, medical, surgical, and special out-patient departments, new casualty wards, dispensary, and clinical lecture theatre. A new chemical laboratory has been added to the Medical School, and a laboratory devoted to instruction in Public Health. A second new block is devoted to Pathology, and contains the post-mortem room as well as extensive laboratories for bacteriology, clinical pathology, pathological histology, and pathological chemistry.

The Medical School Buildings include three large lecture theatres, a large dissecting room, a spacious library (containing 13,000 volumes), a well-appointed museum of anatomy, physiology, comparative anatomy, materia medica, botany, and pathological anatomy. The pathological museum is the most complete in the kingdom. There are laboratories for chemistry, physiology, pharmacology, physics, public health, and biology, giving ample accommodation in every department.

Special Classes for the Primary and Final F.R.C.S. are held twice yearly.

Instruction in Preliminary Science is given to University of London students in chemistry, biology, and physics throughout the year.

Laboratory Instruction for the D.P.H. is provided during the winter and summer sessions, and elementary instruction in Bacteriology is also given throughout the year.

The recreation ground of 10 acres is at Winchmore Hill for the use of the members of the Students' Union, which all students are expected to join. The Students' Union contains a large reading and smoking room, a committee and writing room, luncheon and dining hall, and a miniature rifle range.

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[1] For Ancillary Metropolitan Medical Schools see p. 571.

Staff.—Consulting Physicians: Sir William S. Church, Bart., K.C.B., Dr. Hensley, Sir Lauder Brunton, Bart., F.R.S., Sir Dyce Duckworth, Bart., Dr. Norman Moore, Dr. S. West, and Dr. Ormerod. Consulting Physician Accoucheur: Sir Francis Champneys, Bart. Consulting Surgeons: Professor Marsh, Mr. Harrison Cripps, and Mr. Lockwood. Consulting Aural Surgeon: Mr. Cumberbatch. Consulting Medical Officer to the Electrical Department: Dr. Lewis Jones. Physicians: Sir Wilmot Herringham, Dr. Tooth, C.M.G., Dr. Garrod, F.R.S., Dr. Calvert, and Dr. Morley Fletcher. Surgeons: Sir Anthony Bowlby, C.M.G., Mr. D'Arcy Power, Mr. Waring, Mr. McAdam Eccles, and Mr. Bailey. Physicians with charge of Out-patients: Dr. Drysdale and Dr. Horton-Smith Hartley, C.V.O. Assistant Physicians: Dr. Horder, Dr. Langdon Brown, and Dr. Thursfield. Surgeons with charge of Out-patients: Mr. Rawling and Mr. Gask. Assistant Surgeons: Mr. Gordon Watson, Mr. Harold Wilson, and Mr. Girling Ball. Physician Accoucheur: Dr. Griffith. Physician Accoucheur with charge of Out-patients: Dr. Williamson. Assistant Physician Accoucheur: Dr. Barris. Ophthalmic Surgeons: Mr. Jessop and Mr. Holmes Spicer. Surgeon for Diseases of the Throat and Nose: Mr. Harmer. Assistant Surgeon for Diseases of the Throat and Nose: Mr. Rose. Aural Surgeon: Mr. Ernest West. Assistant Aural Surgeon: Mr. Sydney Scott. Dental Surgeons: Mr. Ackland and Dr. Austin. Assistant Dental Surgeons: Mr. F. Coleman and Mr. Atkinson Fairbank. Orthopædic Surgeon: Mr. Elmslie. Physicians for Diseases of Children: Dr. Fletcher and Dr. Thursfield. Physician for Diseases of the Skin: Dr. Adamson. Medical Officer in charge of Electrical Department: Dr. Cumberbatch. Medical Officer to the X Ray Department: Dr. Walsham. Pathologist: Professor Andrewes. Assistant Pathologist: Dr. Gordon. Administrators of Anæsthetics: Mr. Gill and Mr. Cross. Assistant Administrators of Anæsthetics: Mr. Boyle and Mr. Trewby. Medical Registrars: Dr. Hinds Howell and Dr. Gow. Surgical Registrars: Mr. Blakeway and Mr. Roberts. Casualty Physicians: Dr. Hamill and Dr. Graham.

Lecturers and Demonstrators.—Medicine: Dr. Norman Moore (Emeritus Lecturer), the Physicians, and Assistant Physicians. Clinical Medicine: Sir Wilmot Herringham, Dr. Tooth, C.M.G., Dr. Garrod, F.R.S., Dr. Calvert, and Dr. Morley Fletcher. Practical Medicine: Dr. Langdon Brown and Dr. H. Thursfield. Surgery: The Surgeons and Assistant Surgeons. Clinical Surgery: Sir Anthony Bowlby, C.M.G., Mr. D'Arcy Power, Mr. Waring, Mr. McAdam Eccles, and Mr. Bailey. Practical Surgery: Mr. Harold Wilson and Mr. Girling Ball. Operative Surgery: Mr. Rawling, Mr. Gordon Watson, and Mr. Wilson. Midwifery and Diseases of Women: Dr. Griffith, Dr. Williamson, and Dr. Barris. Practical Midwifery: Dr. M. Donaldson. Pathology: Professor Andrewes and Dr. Gordon. Chemical Pathology: Dr. Garrod, F.R.S., and Mr. Wallis. Morbid Anatomy and Post Mortems: Dr. Hinds Howell, Dr. A. E. Gow, Mr. Blakeway, and Mr. Roberts. Practical Pathology: Dr. Stansfeld, Mr. Vick, Mr. Canti, Mr. Davis, and Mr. Just. Ophthalmic Medicine and Surgery: Mr. Jessop and Mr. Holmes Spicer. Ophthalmoscopic Demonstrations: Mr. Holmes Spicer. Diseases of the Ear: Mr. Ernest West and Mr. Sydney Scott. Diseases of the Throat and Nose: Mr. Harmer and Mr. Rose. Orthopædic Surgery: Mr. Elmslie. Diseases of the Skin: Dr. Adamson. Diseases of Children: Dr. Morley Fletcher and Dr. Thursfield. Medical Electricity: Dr. E. P. Cumberbatch. X Ray Practice: Dr. Walsham. Mental Diseases and Insanity: Dr. Claye Shaw (Emeritus Lecturer) and Dr. Robert Jones. Dental Surgery: Mr. R. C. Ackland and Dr. Austin. Anæsthetics: Mr. R. Gill, Mr. Cross, Mr. Boyle, and Mr. Trewby. Forensic Medicine: Dr. R. A. Lyster. Descriptive and Surgical Anatomy: Dr. Macphail. Practical Anatomy: Dr. Macphail, Mr. Stanley, Mr. Grange, and Mr. Moreton. General Anatomy and Physiology: Dr. Edkins. Practical Physiology: Dr. Edkins, Dr. Trevan, and Dr. Lukis. Materia Medica, Pharmacology, and Therapeutics: Dr. Hamill. Biology and Comparative Anatomy: Dr. Shore. Practical Biology: Dr. Shore and Dr. Cunnington. Chemistry: Dr. Hurtley. Practical Chemistry: Dr. Hurtley and Mr. Cahen. Physics: Mr. Womack. Practical Physics: Mr. Womack and Mr. Lloyd Hopwood. Public Health: Sir George Newman. Sanitary Law: Dr. Lyster. Museum Curator: Professor Andrewes. Junior Curator: Mr. Armstrong. Dean of the Medical School: Dr. Shore. Warden of the College: Mr. Girling Ball.

Scholarships given in aid of Medical Study.—At this school various Scholarships, prizes, &c., are given, none of those in the following list having a less value than £10. There are also other prizes and medals on a lower scale of value. For five of the Scholarships and the Exhibition—namely, (*a*), (*b*), (*c*), three Entrance Scholarships of the respective values of £75, £75, and £150; (*d*) Entrance Scholarship in Arts, £100; (*e*) Jeaffreson Exhibition, £50; and (*f*) Shuter Scholarship, £50—a full or University course at St. Bartholomew's Hospital is required. The awards of (*a*), (*b*), and (*c*) are made after examination in selections from the subjects of Chemistry, Physics, Zoology, Botany, Physiology, and Anatomy; (*d*) and (*e*) are awarded after examination in Latin, Mathematics, and Greek or French or German; (*f*) is awarded after competitive examination among Cambridge Graduates in Anatomy and Physiology. For the remaining Scholarships and prizes study at St. Bartholomew's Hospital is required. These remaining Scholarships and prizes, with the money value and the subjects of examination, are as follows:—Four Junior Scholarships: (*g*) No. 1, £30, Anatomy and Physiology; (*h*) No. 2, £20, Anatomy and Physiology; (*i*) No. 3, £25, Chemistry, Physics, and Biology; (*j*) No. 4, £15, Chemistry, Physics, and Biology; (*k*) Senior Scholarship, £50, Anatomy, Physiology, and Chemistry; (*l*) Kirkes Scholarship, £30 and medal, Clinical Medicine; (*m*) and (*n*) two Brackenbury Scholarships, £39 each, one in Medicine and one in Surgery; (*o*) Sir G. Burrow's Prize, £10, Pathology; (*p*) Skynner Prize, 13 guineas, Regional and Morbid Anatomy; (*q*) Matthews Duncan Medal and Prize, £20, Midwifery and Gynæcology; (*r*) Luther Holden Research Scholarship in Surgery, awarded by election, £105; and (*s*) Lawrence Research Scholarship and gold medal in Pathology, awarded by election, £115.

CHARING CROSS HOSPITAL.—This School, with its Hospital, is situated in the very centre of London, and is easily accessible from all parts. It is within a few minutes' walk of the University of London Laboratories at King's College, and provides for full instruction in all subjects of the medical curriculum. Its courses of instruction are specially designed to meet the requirements for the University of London degrees, the diplomas of the Royal Colleges, and the final studies of other universities. The Hospital, with its Convalescent Home at Limpsfield, contains 225 beds. Over 2000 cases pass through its wards each year, and some 24,000 out-patients and casualties are treated. There are special departments for Mental Diseases, Midwifery, Diseases of Women, of Children, of the Skin, Eye, Ear, Throat, Nose, and Teeth, for Orthopædic Cases, X Ray work, and for Electrical Examination and Treatment.

Appointments.—In the Medical School Demonstratorships and Assistant Demonstratorships are open to students of the School. Medical, Surgical, and Obstetric Registrars to the Hospital are appointed annually. Six House Physicians, six House Surgeons, and two Resident Obstetric Officers are appointed each year after competitive examination. They are provided with board and residence in the Hospital. Clinical Clerks and Dressers are appointed in all the general and special departments of the Hospital, and arrangements are also made for students who have not entered for the entire medical curriculum to hold these posts. Every student holds in turn the post of Pathological Assistant and assists at the necropsies, and on the completion of his clinical appointments takes up the duty for three months of Pathological Clerk in the Clinical Laboratory under the immediate supervision of the Bacteriologist. The above appointments are open without any additional fee.

Recent Developments.—The School, alike in the interests of university efficiency, and in accordance with one of the chief recommendations of the University of London—of which it is a constituent school—has now an arrangement whereby its students can carry out their work in the primary and intermediate portions of their studies in the laboratories of the University of London (King's College), situated within a few minutes' walk of the hospital. The arrangement has proved to be a most successful one. It enables its students to get the best university education from a large professorial and teaching staff in their earlier studies while still allowing them to take advantage of their own school for social and collegiate purposes. As a further result of this reorganisation the school has now exceptionally large and commodious laboratories for the Final studies. A large Laboratory, capable of accommodating up to 100 students, is available for general pathological work, demonstrations and research, under the immediate charge of the Lecturer and Assistant Lecturer on Pathology. Systematic demonstrations, covering the whole range of Pathology, are arranged daily throughout each session between 10 A.M. and 5 P.M. Good departments are also available for other final subjects of Bacteriology, Clinical Pathology, Materia Medica, Toxicology, Public Health, and Operative Surgery, and also for Research Work by Post-graduates.

Public Health Laboratories.—A further important development has recently been effected in connexion with Public Health and Bacteriology. The School has adapted an exceptionally fine series of its laboratories for purposes of these studies, and the University of London, King's College, have taken these over as their "University Laboratories of Public Health and Bacteriology," and have transferred to them their full professorial and teaching staff. The fullest course of instruction for the Diploma of Public Health is given in these laboratories.

The *Museum* contains over 4000 specimens, and has recently received a notable collection of over 700 gynæcological specimens, "The Cuthbert Lockyer Collection," from one of the members of its hospital and school staff.

Library.—The Library contains the latest editions of the usual text-books and the chief medical periodicals. The Students' Club Union includes reading and smoking rooms, cloak room, refreshment room, &c. Extensive alterations have recently been made in these, adding greatly to the social comfort of the students.

Fees.—Sessional payments of 17 guineas for the Winter Session and 8 guineas for the Summer Session for London University and other University students, and 15 guineas and 7 guineas respectively for Conjoint Board students, with an entrance fee of 10 guineas; or a total composition fee for five and a half years' tuition of 125 guineas in the case of London University students and of 110 guineas for five years' tuition for the Conjoint Board students. Special facilities are offered for students and post-graduates desiring to take up particular classes of work in the wards and special departments of the hospital for longer or shorter periods. The fees are those of the classes attended or in accordance with the period and character of hospital attendance desired. Students and graduates entering for these shorter courses are eligible for the various resident and assistant appointments in the hospital. The above fees are inclusive of the full course of instruction given in the School and in the University Laboratories.

All information regarding scholarships, prizes, &c., or any further information desired may be had of the Dean (Dr. William Hunter, F.R.C.P.), The Medical School, Charing Cross Hospital, London, W.C.

ST. GEORGE'S HOSPITAL.—This hospital has a service of 436 beds, of which 180 are allotted to surgical, 150 to medical cases, and 100 are at the Convalescent Hospital at Wimbledon. One ward is set apart for Diseases Peculiar to Women. Children's beds are placed in all the women's wards. Two wards are allotted to ophthalmic cases.

The Winter Session commences on Oct. 1st, but students can enter at any time or for any particular course. The Hospital and Medical School are situated at Hyde Park Corner and are readily accessible from all parts of London. At this school Entrance Scholarships and Endowed Prizes of a total value of £461 are awarded annually; a detailed list is placed below. As the scientific and clinical parts of the medical student's curriculum are entirely separate there is no longer any object in conducting the scientific course upon hospital premises. The entire teaching and laboratories are therefore now devoted to purely clinical subjects, as in other universities, to the great advantage of students in their fourth and fifth years of study. Arrangements have been made with the University of London for students who enter during the first, second, or third year of the curriculum as students of St. George's to carry out the necessary courses of instruction at either University College or King's College. Students therefore have the unrivalled advantages of the lectures and practical classes of these Colleges of the University during the preliminary and intermediate portions of their studies, and then complete their course, without payment of any entrance fee, in a school entirely devoted to Clinical work. Students are permitted to enter the wards of the hospital at any hour. Dresserships to the surgeons and clinical clerkships to the physicians are open without fee to all students of the hospital. Eight house physicians and eight house surgeons are appointed annually. All house appointments are open without fee to every perpetual student of the hospital and are made strictly in accordance with the merits of the candidates. Special attention is directed to the following paid appointments, among others, which are open to students after they have held house office:—Medical Registrarship at £200 per annum; Surgical Registrarship at £200; Assistant Curatorship of the Museum at £100; Obstetric Assistantship (Resident) at £50; the post of Resident Anæsthetist at £100; the post of Senior Anæsthetist at £50; the posts (3) of Junior Anæsthetists, each at £30. Great attention is paid by members of the staff to individual teaching. A number of special courses are given in which the requirements of university and other examinations receive careful attention. The following may be cited as examples:—(1) Elementary Bacteriology; (2) Advanced Bacteriology; (3) Clinical Pathology; (4) Systematic Pathology; (5) Histological Pathology and Morbid Anatomy; (6) Pharmacology; (7) Surgical Anatomy; (8) Advanced Anatomy and Physiology; (9) Operative Surgery; (10) Public Health; and (11) Tropical Diseases. Special classes are held by members of the staff for all examinations. The St. George's Hospital Club, with smoking- and luncheon-rooms on the hospital premises, and an athletic ground at Wimbledon, is an amalgamation of the Hunterian Society, the *Gazette*, and the chess, lawn tennis, boxing, hockey, rifle, and golf clubs. Students have the advantage of a library of medical and scientific books which is kept up-to-date. A register of accredited apartments and a list of medical men and others willing to receive St. George's men as boarders may be seen on application to the Dean. Further information may be obtained from the Dean of the Medical School.

Staff.—Consulting Physicians: Dr. T. T. Whipham, Sir Isambard Owen, and Dr. W. Ewart. Consulting Surgeons: Mr. Pick, Mr. Haward, Sir W. Bennett, and Mr. Marmaduke Sheild. Consulting Obstetric Physician: Dr. W. R. Dakin. Consulting Ophthalmic Surgeons: Mr. Brudenell Carter and Mr. Adams Frost. Consulting Aural Surgeons: Sir William Dalby and Mr. W. C. Bull. Consulting Dental Surgeon: Mr. Winterbottom. Consulting Bacteriologist: Dr. Charles Slater. Physicians: Dr. H. D. Rolleston, Dr. Ogle, Dr. Latham, and Dr. Collier. Obstetric Physician: Dr. A. F. Stabb. Assistant Physicians: Dr. Jex-Blake, Dr. Golla, and Dr. Torrens. Assistant Obstetric Physician: Dr. Darwall Smith. Physician to the Skin Department: Dr. W. S. Fox. Physician Anæsthetist: Sir Frederic Hewitt, M.V.O. Surgeons: Mr. G. R. Turner, Mr. F. Jaffrey, Mr. Pendlebury, and Mr. T. Crisp English. Ophthalmic Surgeon: Mr. H. B. Grimsdale. Assistant Ophthalmic Surgeon: Mr. R. R. James. Assistant Surgeons: Mr. W. F. Fedden, Mr. I. Back, and Mr. C. H. Frankau. Surgeons to the Throat and Ear Department: Mr. H. S. Barwell and Mr. L. Colledge. Dental Surgeon: Mr. N. G. Bennett. Assistant Dental Surgeon: Mr. Morley.

Lecturers.—Baillie Lecturer in Physic: Sir William Osler, Bart. Clinical Medicine: the Physicians and Assistant Physicians. Clinical Surgery: the Surgeons and Assistant Surgeons. Principles and Practice of Physic: Dr. Rolleston, Dr. Ogle, Dr. Latham, and Dr. Collier. Tropical Medicine: Dr. T. S. Kerr. Principles and Practice of Surgery: Mr. Turner, Mr. Jaffrey, Mr. Pendlebury, and Mr. English. Midwifery and Diseases of Women and Children: Dr. Stabb. Assistant Lecturer on Midwifery and Diseases of Women and Children: Dr. Darwall Smith. Vaccination: Mr. E. Climson Greenwood. Insanity and Clinical Instructor in Insanity: Dr. Seymour Tuke. Ophthalmic Surgery: Mr. Grimsdale. Diseases of the Skin: Dr. Fox. Diseases of the Throat, Nose, and Ear: Mr. Barwell and Mr. L. Colledge. Dental Surgery: Mr. Norman Bennett. Assistant Lecturer on Dental Surgery: Mr. Morley. Practical Medicine: Dr. Jex-Blake. Practical Surgery: Mr. Back. Operative Surgery: Mr. C. H. Frankau. Surgical Anatomy: Mr. Fedden. Edward Jenner Lecturer on Public Health: Mr. C. M. Fegen. Hygiene: Dr. H. Spitta, M.V.O. Forensic

Medicine and Toxicology: Dr. Trevor. Toxicological Chemistry: Mr. Gardner. Pathological Chemistry: Dr. Golla. Pathology: Dr. Trevor. Bacteriology: Dr. Spitta, M.V.O. Assistant Lecturer on Bacteriology and Lecturer on Clinical Pathology: Dr. E. L. Hunt. Materia Medica and Therapeutics: Dr. Cyril Ogle. Pharmacology: Dr. Golla. Anæsthetics: Sir Frederic Hewitt, M.V.O. Teacher of Anæsthetics: Dr. Blumfeld. Assistant Teachers of Anæsthetics: Dr. Powell, Dr. Longhurst, and Dr. Horne. Advanced Anatomy: Mr. Jaffrey. Advanced Physiology and Histology: Dr. Buckmaster. Advanced Chemistry and Pharmacological Chemistry: Mr. Gardner. Teacher of Skiagraphy: Dr. Simmons. Curator of the Museum: Dr. Trevor. Assistant Curator of the Museum and Demonstrator in Pathology: Mr. J. R. H. Turton. Obstetric Tutor: Dr. D. W. Roy. Curator of the Peirse-Duncombe Laboratory: Dr. Harold Spitta, M.V.O. Demonstrator in Materia Medica: Dr. A. Manuel. Medical Tutor: Dr. W. E. Waller. Surgical Tutor: Mr. G. A. Ewart. Dean of the Medical School: Dr. R. Salusbury Trevor.

Scholarships and Prizes.—At this school two entrance scholarships are given, the money value and the subjects of examination being as follows: two University Entrance Scholarships, 70 guineas and £50 respectively, Anatomy and Physiology. The others are as follows: (*c*) William Brown Exhibition, tenable for two years and open to perpetual pupils having registrable qualifications, £112 per annum, Practice of Medicine, Midwifery, and Surgery; (*d*) William Brown Exhibition, tenable for three years and open to perpetual pupils qualified not more than three years previously, £42 per annum, Essay and Original Work; (*e*) Allingham Scholarship in Surgery for Students qualified not more than three years, £50, Competitive Essay; (*f*) and (*g*) two Brackenbury Prizes, one in Medicine and one in Surgery, £30 each, open to students of not more than five years' standing; (*h*) Treasurer's Prize for Proficiency in Clinical Examination of Cases and a written Examination in Medicine, Surgery, and Midwifery, £10 10*s.*; (*i*) H. C. Johnson Memorial Prize, £15, Practical Anatomy; (*j*) Pollock Prize, £17, Physiology, Physiological Chemistry, and Histology; (*k*) Clarke Prize, £5; (*l*) Thompson Medal, £7, Clinical Reports; (*m*) Brodie Prize, £6 6*s.*, Clinical Reports; (*n*) Webb Prize, open to perpetual pupils, £30, Bacteriology; (*o*) Anæsthetics Prize, £5 5*s.*

GUY'S HOSPITAL.—This hospital, founded by Thomas Guy in 1721 for the reception of 400 patients, and enlarged through the aid of a large bequest from the late William Hunt, contains at the present time 617 beds. The school buildings have recently been rebuilt and now offer very complete accommodation. Within the grounds of the hospital are situated the residential college, with accommodation for 60 students, the students' club, with reading, smoking, luncheon, and dining-rooms, a fives court, and swimming bath. The athletic ground and club house is situated at Honor Oak Park, and can be reached in 20 minutes from the hospital.

House physicians, house surgeons, out-patient officers and assistant house surgeons, obstetric residents, ophthalmic house surgeons, clinical assistants, clerks to anæsthetists, surgeons' and assistant surgeons' dressers, surgical and medical clinical clerks, post-mortem clerks, extern obstetric attendants, and dressers and clerks in the special departments are appointed from among the students upon the recommendation of the medical council according to merit.

Medical and Surgical Staff.—Consulting Physicians: Sir James F. Goodhart, Bart., Dr. F. Taylor, and Dr. Newton Pitt. Consulting Surgeons: Mr. Thomas Bryant, Sir H. G. Howse, Mr. W. H. A. Jacobson, Mr. R. C. Lucas, and Mr. Golding-Bird. Consulting Physician for Mental Diseases: Sir George Savage. Consulting Aural Surgeon: Mr. W. Laidlaw Purves. Consulting Anæsthetists: Mr. Tom Bird and Dr. H. F. Lancaster. Consulting Ophthalmic Surgeons: Mr. C. Higgens and Mr. W. A. Brailey. Consulting Dental Surgeons: Mr. Newland-Pedley and Mr. W. A. Maggs. Physicians and Assistant Physicians: Dr. W. Hale White, Sir Cooper Perry, Dr. L. E. Shaw, Dr. J. Fawcett, Dr. A. P. Beddard, Dr. H. S. French, Dr. A. F. Hertz, Dr. H. C. Cameron, Dr. G. H. Hunt, and Dr. E. P. Poulton. Surgeons and Assistant Surgeons: Sir W. Arbuthnot Lane, Bart., Mr. L. A. Dunn, Sir Alfred Fripp, C.B., K.C.V.O., Mr. F. J. Steward, Mr. C. H. Fagge, Mr. R. P. Rowlands, Mr. Philip Turner, Mr. E. C. Hughes, and Mr. R. Davies-Colley. Obstetric Physicians: Mr. G. Bellingham Smith and Mr. H. Chapple. Ophthalmic Surgeons: Mr. H. L. Eason and Mr. A. W. Ormond. Physician in Charge of Skin Department: Sir Cooper Perry. Physician in Charge of Nervous Diseases: Dr. Hertz. Physician in Charge of Children: Dr. Cameron. Physician in Psychological Medicine: Dr. Maurice Craig. Surgeon in Charge of Genito-Urinary Department: Mr. A. R. Thompson. Surgeons in Charge of Throat and Ear Department: Mr. W. M. Mollison and Mr. T. B. Layton. Surgeon in Charge of the Orthopædic Department: Mr. W. H. Trethowan. Dental Surgeons: Mr. R. Wynne Rouw, Mr. H. L. Pillin, Mr. M. F. Hopson, and Mr. J. B. Parfitt. Anæsthetists: Mr. G. Rowell, Mr. C. J. Ogle, Dr. F. E. Shipway, Mr. H. M. Page, and Mr. H. T. Depree. Medical Registrars and Tutors: Dr. N. Mutch, Mr. H. W. Barber, Mr. Heaton, and Mr. J. A. Ryle. Surgical Registrars and Tutors: Mr. A. H. Todd, Mr. G. T. Mullally, Mr. R. C. Ozanne, and Mr. E. G. Schlesinger. Actino-Therapeutic Department: Dr. C. E. Iredell. Radiographers: Mr. E. W. H. Shenton and Dr. Lindsay Locke. Bacteriologist to the Hospital: Dr. J. W. H. Eyre. Resident Surgical Officer: Mr. F. D. Saner. Hon. Librarian, Wills Library: Dr. H. S. French. Lying-in Charity: Mr. Bellingham Smith and Mr. Chapple. Dean of the Medical School: Dr. H. C. Cameron. Warden of the College: Mr. L. Bromley, M.C.

Lecturers and Demonstrators.—Clinical Medicine: the Physicians and Assistant Physicians. Clinical Surgery: the Surgeons and Assistant Surgeons. Medicine: the Physicians. Practical Medicine: Dr. N. Mutch, Mr. H. W. Barber, Mr. T. B. Heaton, and Mr. J. A. Ryle. Surgery: Sir W. A. Lane, Bart., Mr. Dunn, Sir Alfred Fripp, and Mr. Steward. Operative Surgery: Mr. P. Turner and Mr. Hughes. Practical Surgery: Mr. Todd, Mr. Mullally, Mr. Ozanne, and Mr. Schlesinger. Midwifery and Diseases of Women: Mr. Bellingham Smith and Mr. Chapple. Practical Obstetrics: Mr. McNair. Psychological Medicine: Dr. Craig. Ophthalmic Surgery: Mr. Eason. Dental Surgery: Mr. Wynne Rouw. Aural Surgery: Mr. Mollison and Mr. Layton. Diseases of the Skin: Sir Cooper Perry. Diseases of Children: Dr. Cameron. Diseases of Nervous System: Dr. Hertz. Diseases of the Throat: Mr. Mollison and Mr. Layton. Anæsthetics: Mr. Rowell. Hygiene and Public Health: Dr. R. King Brown. Pathology: Dr. P. P. Laidlaw. Gordon Lecturer on Experimental Pathology: Dr. P. P. Laidlaw. Morbid Anatomy: Dr. French, Dr. Cameron, and Dr. Hunt. Morbid Histology and Bacteriology: Dr. Eyre, Dr. Laidlaw, and Dr. Goodhart. Medical and Surgical Pathology Classes: Dr. Hunt and Mr. Davies-Colley. Bacteriology: Dr. Eyre. Practical Bacteriology: Dr. Eyre. Forensic Medicine: Mr. Ryffel. Anatomy: Mr. Fagge and Mr. Rowlands. Practical Anatomy: Mr. Bromley and four Demonstrators. Physiology: Dr. Pembrey. Practical Physiology: Dr. Pembrey and two Demonstrators. Materia Medica and Therapeutics: Dr. A. P. Beddard. Pharmacology: Dr. A. J. Clark. Practical Pharmacy: the Hospital Pharmacist. Chemistry: Dr. Martin Lowry, F.R.S. Practical Chemistry: Dr. Lowry, Dr. Merriman, and Mr. Rogerson. Experimental Physics: Dr. Fison and Mr. Abram. Biology: Mr. Evans and Mr. Reed. Psychology: Dr. Craig.

Scholarships and Prizes.—For the first two scholarships in the list here given a course of study at Guy's Hospital is required; for all the others a perpetual course is required. There are five entrance scholarships, the money value, the conditions of eligibility, and the subjects of examination being as follows:—(*a*) one scholarship of £100 for students under 21 years of age, Latin, English, Greek or French or German, Arithmetic, Euclid, and Algebra; (*b*) one scholarship for students under 21 years, £120, Chemistry, Physics, and Biology; (*c*) a Scholarship of £50, open to candidates under 21 years of age, to be awarded either in Arts or in Science, according to the discretion of the Examiners, and to the percentage of the marks obtained; (*d*), (*e*) two Senior or University Scholarships, value £75 and £35, open to candidates under 25 years of age—any two of the following subjects: Anatomy, Physiology, Pharmacology, General Pathology, Organic Chemistry; (*f*) Hilton prize for senior students, £5, Dissections; (*g*), (*h*), (*i*) three Junior General Proficiency Prizes, £20, £15, and £10 respectively, Anatomy, Histology, &c. ; (*j*) Michael Harris Prize for second-year students, £10, Human Anatomy ; (*k*) Sands Cox Scholarship for second-year students tenable for three years, £15 per annum, Physiology, Histology, &c. ; (*l*) Wooldridge Memorial Prize for second-year students £10, Physiology, Histology, &c. ; (*m*) and (*n*), two, Treasurer's Gold Medals, one for Clinical Medicine and one for Clinical Surgery, open to senior students ; (*o*) Golding-Bird Prize for senior students, £20 and Medal, Bacteriology ; (*p*) Beaney Prize, £34, Pathology ; (*q*) Gull Studentship tenable for three years, awarded for research without competitive examination, £150 per annum, Pathology ; (*r*) Beaney Scholarship tenable for three years awarded for research without competitive examination, £31 10*s*., Therapeutics ; (*s*) Arthur Durham Travelling Studentship tenable for three years, £100 ; (*t*) Douglas Research Studentship, £300 per annum ; and (*u*) Oldham Prize in Ophthalmology, £30.

UNIVERSITY OF LONDON : KING'S COLLEGE.—The medical department (Faculty of Science, Medical Division) at this College only deals with Preliminary and Intermediate subjects, and instruction in these subjects is given in the College laboratories by university professors and their assistants. The following four hospital schools which deal only with the subjects of the final examinations—viz., King's College Hospital, Westminster Hospital, St. George's Hospital, and Charing Cross Hospital—send their students to King's College for the earlier part of the curriculum.

The following are the teachers in the subjects concerned :—Anatomy : Dr. D. Waterston (Professor), Dr. Gladstone, and Demonstrators. Physiology : Dr. W. D. Halliburton (Professor), and Dr. Myers-Ward, Dr. Rosenheim, and Dr. Locke (Lecturers). Psychology : Dr. W. Brown (Reader). Pharmacology : Dr. W. E. Dixon (Professor). Zoology : Dr. A. Dendy (Professor). Botany : Dr. W. B. Bottomley (Professor). Chemistry : Mr. H. Jackson (Senior Professor), Dr. Crossley (Professor), Mr. P. H. Kirkaldy (Assistant Professor), with Lecturers and Demonstrators. Physics : Dr. O. W. Richardson (Professor), with Lecturers and Demonstrators.

Fees.—For London University course : For First examination for medical degrees, 25 guineas ; for the Second examination, 58 guineas, or two instalments of 30 guineas each. For Conjoint Board course : For First examination, 20 guineas ; for Second examination, 58 guineas, or two instalments of 30 guineas each. For prospectus and further information application should be made to the Dean of the department.

KING'S COLLEGE HOSPITAL MEDICAL SCHOOL.—The advanced or final subjects in the curriculum are dealt with at the Medical School attached to King's College Hospital. It is situated at Denmark Hill, S.E. This hospital, which is the newest in London, is also the farthest south, and stands in the midst of a vast population, from which an immense amount of clinical material is forthcoming. Although it has only been at work since October, 1913, an average of 3500 out-patients are dealt with weekly. There are 280 beds available for in-patients, and provision will ultimately be made for 600 beds. The hospital contains special departments for diseases of women and children, and of the eye, ear, throat and nose, skin, and teeth. There are special operation theatres for diseases of women, for eye, and for throat, nose, and ear cases. There is a clinical pathologist, and a laboratory in the hospital where histological, bacteriological, hæmatological, and chemical investigations are carried out. The appointments open to students are those of senior clinical assistant to the special departments ; senior medical, surgical, and obstetric tutorships ; resident casualty officer ; resident anæsthetist ; resident assistant pathologist ; and Sambrooke medical and surgical registrars, all of whom receive salaries. There are 16 resident medical and surgical officers appointed yearly, and the usual senior surgical dressers, medical and obstetric clinical clerks, surgical dressers, and clerks and dressers in all the special departments for in- and out-patients, and post-mortem clerks.

Hospital Staff.—Consulting Physicians : Dr. I. Burney Yeo, Dr. Greville Macdonald, Sir David Ferrier, and Sir Hugh Beevor, Bart. Consulting Surgeon : Mr. A. B. Barrow. Consulting Aural Surgeon : Dr. Urban Pritchard. Physicians : Dr. Nestor Tirard, Dr. Norman Dalton, Dr. Raymond Crawfurd, and Dr. Aldren Turner. Surgeons : Sir W. Watson Cheyne, Bart., Mr. A. Carless, Mr. F. F. Burghard, and Mr. G. L. Cheatle. Assistant Surgeons : Mr. T. P. Legg and Mr. Arthur Edmunds. Assistant Physicians : Dr. Tunnicliffe, Dr. J. C. Briscoe, and Dr. H. W. Wiltshire. Obstetric Physicians : Dr. John Phillips and Dr. Hugh Playfair. Assistant Obstetric Physician : Dr. E. L. Holland. Physician for the Diseases of Children : Dr. George F. Still. Assistant Physician for Diseases of Children : Dr. R. S. Frew. Surgeon for Diseases of the Throat : Sir StClair Thomson. Assistant Surgeon for Diseases of the Throat : Mr. C. W. N. Hope. Dental Surgeon : Mr. C. E. Wallis. Ophthalmic Surgeons : Mr. L. V. Cargill and Dr. H. Willoughby Lyle. Aural Surgeon : Mr. Arthur H. Cheatle. Assistant Aural Surgeon : Mr. G. J. Jenkins. Radiographer : Dr. Robert Knox. Physician for Diseases of the Skin : Dr. A. Whitfield. Physician for Tropical Diseases : Sir Ronald Ross. Anæsthetist and Instructor in Anæsthetics : Dr. J. F. W. Silk. Anæsthetist : Dr. G. B. Flux. Assistant Anæsthetist : Mr. Cecil Hughes. Clinical Pathologist : Dr. Emery. Pathological Registrar : Dr. P. B. Ridge. Senior Medical Registrar and Tutor : Dr. A. S. Woodwark. Senior Surgical Registrar and Tutor : Mr. E. G. Gauntlett. Obstetric Tutor : Dr. E. L. Holland. Sambrooke Registrars : Mr. J. Everidge and Mr. G. W. Shore. Resident Casualty Officer : Mr. H. P. Ashe. Resident House Anæsthetist : Mr. L. Game. Assistant Radiographer : Dr. R. W. A. Salmond. Resident Assistant Clinical Pathologist : Mr. H. G. Wiltshire.

Lecturers on Final Subjects.—Medicine (Principles and Practice of) : Dr. Nestor Tirard (Professor) ; Dr. Norman Dalton (Lecturer). Neuro-Pathology : Dr. W. A. Turner (Lecturer). Psychological Medicine : Dr. Steen (Professor). Surgery (Principles and Practice of) : Mr. A. Carless (Professor). Surgery (Operative) : Mr. T. P. Legg (Lecturer). Surgical Pathology : Mr. Arthur Edmunds (Lecturer). Obstetric Medicine and Diseases of Women and Children : Dr. John Phillips (Professor). Practical Obstetrics : Dr. Hugh Playfair (Lecturer). Diseases of Children : Dr. G. F. Still (Professor). Pathology : Dr. d'Este Emery (Lecturer). Forensic Medicine : Dr. W. R. Smith (Professor). Hygiene : Dr. W. J. R. Simpson (Professor). Bacteriology : Dr. Emery and Dr. P. B. Ridge (Lecturers). Ophthalmic Surgery : Mr. L. V. Cargill and Dr. H. Willoughby Lyle. Aural Surgery : Mr. A. H. Cheatle (Lecturer) and Mr. G. J. Jenkins. Dermatology : Dr. A. Whitfield (Professor). Anæsthetics : Dr. J. F. W. Silk (Lecturer) and Dr. G. B. Flux (Instructor). Dental Surgery : Mr. C. E. Wallis (Lecturer).

Fees.—The composition fee for Hospital work and Final subjects of the curriculum is 70 guineas in one sum, or 72 guineas if paid in two instalments, on entrance and on commencement of second year of study respectively. For information and prospectus application should be made to the Dean of the Hospital, or to Mr. Clifton Kelway, the Secretary of the Medical School, Denmark Hill, S.E.

Athletics.—The King's College Hospital Clubs and Societies Union was formed in 1908, and consists of the Medical and Musical Societies, the Hospital Common Room, and the various athletic and sports clubs. Admirable playing fields, over six acres in extent, have been provided for the use of the students on Dog Kennel Hill, Lordship-lane, S.E., about ten minutes from the hospital. There are also Tennis Clubs in the grounds of "The Platanes," the hall of residence for students belonging to the hospital.

Scholarships and Prizes.—For the first two scholarships in the list here shown a perpetual course at King's College is required. The money value and subjects of examination are as follows :—(*a*) and (*b*) Two Warneford Scholarships, tenable for four years, £25 each per annum, Divinity, English History, Latin, Greek, French, German, and Mathematics ; (*c*) Sambrooke Exhibition, £100, Mathematics, Physics, Inorganic Chemistry, Botany, and Zoology ; (*d*) Rabbeth Scholarship, £20, Preliminary Scientific Subjects ; (*e*) and (*f*) Two Science Exhibitions, open to students under 19 years of age and tenable for two years, £30 and £20 per annum respectively, Mathematics, Mechanics, Physics, &c. ; (*g*) and (*h*) Medical Entrance Scholarships, £50, Anatomy and Physiology, and Pathology and Pharmacology, open to students who (1) propose to take a degree at any British University and have passed the examination there in Biology, Chemistry, and Physics, and who (2) will become perpetual students at King's College from date of entering upon Scholarship; (*i*), (*j*), (*k*), and (*l*) Two Medical Entrance Exhibitions, one in Arts and one in Science, £50 each, tenable for five years, successful candidates to study at King's College and King's College Hospital; (*m*). (*n*), and (*o*), Three Medical Scholarships, £40 for fourth-year students, £20 for third-year students, and £20 for second-year students; (*p*) and (*q*), Two Sambrooke Registrarships, open to matriculated students who have filled certain appointments in hospitals, £50 each; (*r*) Daniel Scholarship, open to six-months' laboratory students, and tenable for two years, £20 per annum, Chemistry; (*s*) Carter Prize, £15, Botany; (*t*) Tanner Prize, £10, Obstetrics and Diseases of Women and Children; (*u*) Todd Prize, £4 4*s*. and medal, Clinical Medicine.

London Hospital.—The hospital has 922 beds in constant use and no beds are closed. It is the only general hospital for East London—i.e., for a million and a half people. In-patients last year, 17,096; out-patients, 173,774; accidents, 10,363; major operations, 6751. Owing to the enormous number of patients more appointments are open to students than at any other hospital. Registrars, resident accoucheurs, receiving-room officers, house physicians, house surgeons, emergency officers, pathological assistants, out-patient clinical assistants, senior dressers to out-patients, &c.: 141 of these qualified appointments are made annually and more than 150 dressers, clinical clerks, &c., appointed every three months. All are free to students of the College. Holders of resident appointments have free board. Special classes are held for the degrees of the University of London, the Fellowship of the Royal College of Surgeons, and other higher examinations. Special entries for medical and surgical practice can be made. The Students' Hostel has recently been extended, and accommodation is now provided for 30 students. The Clubs Union Athletic Ground is within easy reach of the hospital. The Metropolitan and other railways have stations close to the hospital and the college.

Staff.—Consulting Physician: Dr. Warner. Consulting Surgeons: Mr. Couper, Mr. McCarthy, Sir Frederick Treves, Bart., Mr. Tay, Mr. Mansell Moullin, Mr. Hurry Fenwick, and Mr. Dean. Consulting Obstetric Physician: Dr. Lewers. Consulting Dental Surgeon: Mr. Barrett. Consulting Aural Surgeon: Mr. Mark Hovell. Consulting Anæsthetist: Sir Frederic Hewitt. Physicians: Dr. Percy Kidd, Dr. Frederick J. Smith, Dr. W. J. Hadley, Sir Bertrand Dawson, K.C.V.O., Dr. Henry Head, Dr. Robert Hutchison, Dr. Lewis Smith, Dr. Cecil Wall, Dr. O. Grünbaum, and Dr. T. Thompson. Assistant Physician: Dr. C. H. Miller. Surgeons: Sir Frederic Eve, Mr. J. Hutchinson, Mr. T. H. Openshaw, Mr. P. Furnivall, Mr. Rigby, Mr. Sherren, and Mr. Lett. Assistant Surgeons: Mr. Russell-Howard, Mr. R. Warren, Mr. Frank Kidd, Mr. R. Milne, and Mr. A. J. Walton. Obstetric Physician: Dr. H. R. Andrews. Assistant Obstetric Physician: Dr. R. D. Maxwell. Physician to Cardiac Department: Dr. James Mackenzie. Physician to the Skin and Light Department: Dr. J. H. Sequeira. Ophthalmic Surgeons: Mr. A. B. Roxburgh and Mr. W. T. Lister. Surgeon to the Throat Department: Dr. Lambert Lack. Aural Surgeon: Mr. Hunter Tod. Surgeon in charge of the Orthopædic Department: Mr. T. H. Openshaw. Dental Surgeons: Mr. H. Chapman, Mr. F. M. Farmer, Mr. G. Northcroft, Mr. Paton Pollitt, Mr. Evelyn Sprawson, and Mr. Wilton Thew. Medical Officer in charge of the Radiographic Department: Dr. Gilbert Scott. Medical Officer in charge of the Electro- and Physico-Therapeutical Departments: Dr. R. S. Woods. Analyst to the Hospital: Mr. Hugh Candy. Bacteriologist to the Hospital: Professor W. Bulloch. Assistant Bacteriologist: Dr. P. Fildes. Inoculation Department: Dr. G. T. Western. Pathological Institute: Dr. H. M. Turnbull, Director; Dr. G. B. Bartlett, Assistant Director. Clinical Pathologists: Dr. P. N. Panton; Assistant, Dr. H. L. Tidy. Anæsthetists: Dr. Probyn-Williams, Mr. Clapham, and Mr. Daly. Assistant Anæsthetists: Dr. Austin Cooper and Mr. J. D. Lyle.

Professors, Lecturers, and Demonstrators.—Medicine: Dr. W. J. Hadley. Clinical Medicine: the Physicians and Assistant Physicians. Cardiac Research: Dr. J. Mackenzie and Dr. J. Parkinson. Surgery: Mr. J. Hutchinson and Mr. R. Howard. Clinical Surgery: the Surgeons and Assistant Surgeons. Anatomy: Professor W. Wright, Dr. N. C. Rutherford, Mr. A. J. Walton, Mr. H. S. Souttar, and Mr. L. J. Austin. Physiology and Histology: Professor Leonard Hill, Dr. Martin Flack, and Mr. I. Feldman. Chemistry: Mr. Hugh Candy and Mr. J. F. Twort. Physics: Dr. A. H. Fison and Mr. O. W. Griffith. Biology: Mr. G. P. Mudge and Mr. R. A. Buddicom. Pathology: Professor W. Bulloch. Special: Dr. H. M. Turnbull. Surgical Pathology: Mr. R. Howard. Clinical: Dr. P. N. Panton. Midwifery and Diseases of Women: Dr. H. R. Andrews. Clinical Obstetrics: the Obstetric Physicians. Practical Obstetrics: Dr. R. D. Maxwell. Forensic Medicine—(1) Public Health: Dr. J. C. Thresh; and (2) Medical Jurisprudence and Toxicology: Dr. F. J. Smith. Mental Diseases: Dr. J. Kennedy Will. General Therapeutics: Dr. R. Hutchison. Pharmacology, Materia Medica, and Practical Pharmacy: Dr. Grünbaum, Dr. E. Mellanby, and Mr. F. A. Hocking. Ophthalmic Surgery: Mr. A. B. Roxburgh and Mr. W. T. Lister. Diseases of the Throat: Dr. Lambert Lack and Dr. N. Patterson. Aural Surgery: Mr. Hunter Tod and Dr. F. F. Muecke. Orthopædic Surgery: Mr. Openshaw. Dental Surgery: Mr. H. Chapman, Mr. F. M. Farmer, Mr. G. Northcroft, Mr. G. P. Pollitt, Mr. E. Sprawson, and Mr. W. Thew. Foods and Dietetics: Dr. R. Hutchison. Neuroses and Psychoses of Children: Dr. F. Warner. Diseases of Children: Dr. R. Hutchison. Operative Surgery: Mr. Lett and Mr. Howard. Demonstrators of Morbid Anatomy: Dr. F. J. Smith, Dr. W. J. H. Hadley, Dr. Grünbaum, Dr. Theodore Thompson, and Dr. C. H. Miller. Bacteriology: Professor W. Bulloch and Dr. P. Fildes. Pathological Histology: Dr. G. B. Bartlett. Anæsthetics: Dr. R. J. Probyn-Williams, Mr. E. W. Clapham, and Mr. A. S. Daly. Elementary Clinical Medicine: Dr. O. Grünbaum and Dr. T. Thompson. Medical Tutor: Dr. C. H. Miller. Elemental Clinical Surgery: Mr. R. Warren and Mr. Milne. Surgical Tutor: Mr. R. Milne. Obstetric Tutor: Dr. S. G. Luker.

Sir Frederick Treves, Bart., Emeritus Professor of Surgery, Mr. Hurry Fenwick, Emeritus Professor of Urology, and Sir Frederic Hewitt, Emeritus Lecturer on Anæsthetics, will give courses of lectures during the year. The Schorstein Memorial Lectures in Clinical Medicine will be given during 1914–15 by Dr. Archibald Garrod, F.R.S., physician to St. Bartholomew's Hospital. Dean: Professor William Wright, M.B., D.Sc., F.R.C.S. Secretary of College: Mr. E. J. Burdon.

Scholarships and Prizes.—At this school the successful candidates for the first items in the list here shown must enter as full students. The value and the subjects of examination are as follows:—Price Scholarship £100; and one Entrance Scholarship of £50, subjects of First Medical Examination at the University of London; Epsom College Scholarship, free education, subjects of First Medical Examination as above; Price Scholarship, open to students of Oxford and Cambridge Universities, £52 10*s*., Human Anatomy and Physiology; Buxton Scholarship, £31 10*s*., subjects of Preliminary Examination in Arts; three Scholarships for Clinical Work, £20 each, Medicine, Surgery, and Obstetrics; Sutton Prize, £20, Pathology; Duckworth Nelson Prize, biennial, £10, Pathology, Practical Medicine, and Surgery; Letheby Prizes (2), £25, Chemistry; £25 in Anatomy and Physiology; eight Dressers' Prizes, amounting to £40, zeal, efficiency, and knowledge of Elementary Clinical and Minor Surgery; Hutchinson Prize, triennial, £40, Clinical Surgery; two Practical Anatomy Prizes, £6 and £4 respectively; Andrew Clark Prize, biennial, £26, Clinical Medicine and Pathology James Anderson Prizes, £9, Elementary Clinical Medicine; Douro Hoare Prize, £5, Physiology; and Wynne Baxter Prize, £5 5*s*., Forensic Medicine; Liddle Prize, triennial £120, subject for 1917, the Etiology of Rheumatic Fever.

Medical Research Funds.—Research Funds of £21,000, including the Eliza Ann Alston Endowment Fund for Medical Research, provide valuable scholarships for men wishing to undertake research or desirous of preparing Theses for University degrees.

St. Mary's Hospital.—305 beds, 31 of which are situated in the Clarence Wing and are devoted to cases requiring treatment by therapeutic inoculation. The number of in-patients treated during 1913 was 4558. The number of out-patients was 19,608 with 21,726 casualty cases, a total of 41,334. The situation of the hospital and Medical School in the centre of the residential districts of Paddington, Bayswater, and North Kensington renders it exceptionally convenient for students' rooms, a register of which is kept by the authorities for the use of students.

Laboratories, &c.—The Medical School provides for the entire curriculum. Special laboratories are in use for Biology, Chemistry, and Physics, a series of lecture theatres and laboratories for anatomy and physiology, and a spacious and well-lighted dissecting-room. The Pathological Department is under the direction of Sir Almroth Wright, F.R.S., and Dr. B. H. Spilsbury, and a block of consulting-rooms and laboratories in the New Wing of the Hospital has been equipped for the department of Therapeutic Inoculation to meet the increased amount of work in that department. During the past year 310 in-patients have received treatment in the department. A special laboratory is provided for the study of chemical pathology.

Appointments.—All clinical appointments in the hospital are free to students of the Medical School and the resident medical officers are chosen by competitive examination. Six house physicians, six house surgeons, four obstetric officers, and two Resident Medical Officers for the Inoculation Wards are appointed in each year and receive board and lodging in the hospital. Two resident anæsthetists are appointed in each year and receive a salary at the rate of £100 per annum, with board and lodging. Four casualty house surgeons are appointed in each year upon the same conditions. Several assistants in the department of Therapeutic Inoculation are appointed annually at salaries of £100 per annum and upwards, the total sum available for salaries of assistants in this department being £1600 per annum. In addition to the above, the senior appointments, medical, surgical, and obstetric registrar, casualty physician, demonstrator of anatomy, physiology, and biology are made annually. Two assistant pathologists are also appointed annually and are eligible for re-election.

Clubs, &c.—The amalgamated clubs include all the various athletic clubs, as well as the medical society, &c. There is a students' club on the Hospital premises, the membership of which is included in the amalgamated clubs. The athletic clubs' ground is situated at Park Royal, Acton, and is easy of access from the Medical School. It consists of Rugby and Association football grounds, tennis courts, and a large cricket pitch, and has a large and well-equipped pavilion.

Special Tuition.—In addition to systematic courses of lectures and demonstrations special tuition is provided for the Intermediate and Final Examinations of the Universities of Oxford, Cambridge, and London, and for the Primary and Final F.R.C.S.

The composition fee for full students is £140 if paid in one sum, or £145 if paid in four instalments. University students who have completed their examinations in Anatomy and Physiology are admitted on payment of a composition fee of 65 guineas (£68 5*s.*) paid in one sum or by payment of two annual instalments of 40 guineas (£42) and 30 guineas (£31 10*s.*) respectively. A system of annual fees is also in force as an alternative to composition fees. University students who have not completed their examination in Anatomy and Physiology pay revision fees until they have passed these examinations, and then pay the composition fee. Separate courses of lectures, laboratory work, or hospital practice may be taken. The School Calendar and full information can be obtained from the Secretary, St. Mary's Hospital Medical School, Paddington, W.

Staff.—Consulting Physicians: Dr. Lees and Dr. Luff. Consulting Surgeons: Mr. Edmund Owen, Mr. Herbert Page, Mr. A. J. Pepper, Sir G. Anderson Critchett, Bart., and Mr. H. E. Juler (Ophthalmic), Sir Malcolm Morris (Skin), Mr. Morton Smale (Dental), Dr. Scanes Spicer (Throat), and Dr. M. Handfield Jones (Obstetric). Consulting Anæsthetist: Mr. Henry Davis. Physicians: Dr. Sidney Phillips, Dr. Wilfred Harris, and Sir John Broadbent, Bart. Surgeons: Mr. J. Ernest Lane, Mr. Warren Low, and Mr. W. H. Clayton Greene. Physicians in charge of Out-Patients: Dr. W. H. Willcox, Dr. R. H. Miller, and Dr. F. S. Langmead. Surgeons in charge of Out-Patients: Mr. Maynard Smith, Mr. Fitzwilliams, Mr. V. Z. Cope, and Mr. C. A. Pannett (supernumerary). Obstetric Surgeon: Dr. T. G. Stevens. Obstetric Surgeon in charge of Out-Patients: Mr. A. W. Bourne. Physician in charge of Children's Department: Dr. Sidney Phillips. Ophthalmic Surgeon: Mr. Leslie Paton. Assistant Ophthalmic Surgeon: Mr. G. Coats. Physician to the Skin Department: Dr. Graham Little. Physician to Department for Nervous Diseases; Dr. Wilfred Harris. Physician to Department for Mental Diseases: Dr. R. H. Cole. Dental Surgeon: Mr. W. H. Dolamore. Surgeons to the Ear, Nose, and Throat Department: Dr. G. William Hill and Mr. C. I. Graham (assistant). Administrators of Anæsthetics: Mr. Collum, Mr. Henry Chaldecott, and Mr. Phillips. Director in Medical Charge of Inoculation Department: Sir Almroth Wright. Assistant Director: Captain S. R. Douglas, I.M.S. Medical Officer in charge of X Ray Department: Dr. Harrison Orton. Dean: Sir John Broadbent.

Lecturers.—Clinical Medicine: Dr. Sidney Phillips. Clinical Surgery: Mr. Ernest Lane. Medicine: Dr. Harris, Sir John Broadbent, and Dr. Willcox. Surgery: Mr. V. Warren Low and Mr. Clayton Greene. Practical and Operative Surgery: Mr. Maynard Smith and Mr. Fitzwilliams. Pathology: Sir A. E. Wright, Dr. Spilsbury, and Dr. Kettle. Bacteriology: Captain S. R. Douglas, Dr. Freeman, and Mr. Fleming. Pathological Chemistry: Dr. W. H. Willcox and Mr. J. Webster (demonstrator). Midwifery and Gynæcology: Dr. Stevens. Materia Medica and Therapeutics: Dr. R. H. Miller. Forensic Medicine: Dr. Willcox. Neurology: Dr. Harris. Descriptive and Surgical Anatomy: Mr. J. Ernest Frazer; Demonstrators: Dr. R. H. Robbins and Mr. Kenneth Lees. Physiology and Histology: Dr. H. E. Roaf and Dr. Ellison (demonstrator). Biology: Dr. W. G. Ridewood; Demonstrator: Mr. W. Rushton. Chemistry: Dr. P. Haas and Mr. J. E. Cheesman (demonstrator). Physics: Mr. W. H. White. Hygiene and Public Health: Dr. W. H. Willcox. Mental Diseases: Dr. R. H. Cole. Diseases of the Eye: Mr. Leslie Paton and Mr. Coats. Diseases of the Ear, Nose, and Throat: Dr. G. William Hill and Mr. Graham. Diseases of the Skin: Dr. Graham Little. Dental Surgery: Mr. Dolamore. Medical Tutor: Dr. Miller. Surgical Tutor: Mr. Fitzwilliams. Obstetric Tutor: Mr. A. W. Bourne. Medical Registrar: Dr. H. G. P. Castellain. Surgical Registrar: Mr. C. W. G. Bryan. Obstetric Registrar: Mr. A. W. Bourne. Department for Nervous Diseases: Dr. Wilfred Harris. Practical Pharmacy: Mr. E. A. Andrews. School Secretary: Mr. B. E. Matthews.

Scholarships and Prizes.—The money value and subjects of examination of these are as follows: (*a*) and (*b*) Entrance Scholarships in Natural Science, £100 and £50 respectively, awarded by competition in September; (*c*) the Frederic John Palmer Scholarship in Natural Science, £25; (*d*) University Scholarship in Natural Science, open to members of Oxford or Cambridge University, £52 10*s.*; (*e*) University Scholarship in Natural Science, open to members of any British University, £52 10*s.*; (*f*) Epsom Scholarship, awarded by nomination, £52 10*s.*; (*g*) Gold Medal, £20, an Essay on Some Special Point in Clinical Medicine; (*h*) Dermatology Prize, awarded twice in each year, £5 5*s.*; (*i*) Meadows' Prize, awarded in alternate years, £8, Obstetrics; (*j*) nine Winter Session Prizes, £2 2*s.* each, subjects of the medical curriculum; and (*k*) nine Summer Session Prizes, £2 2*s.* each, subjects of the medical curriculum.

MIDDLESEX HOSPITAL.—The Hospital and Medical School are situated in Mortimer-street, at the top of Berners-street, and only a few minutes' walk from Goodge-street Station (Hampstead and Charing Cross Tube), Oxford Circus Stations (Bakerloo and Central London Tubes), and Portland-road Station (Metropolitan Railway).

The hospital contains 440 beds, including special wards for Cancer Cases, Maternity and Gynæcological Cases, and for Diseases of Children and the Skin and Eye.

The Cancer Charity, containing 90 beds and Special Investigation Laboratories, offers unrivalled opportunities for the study of Cancer, both in its clinical and pathological aspects.

In the Electro-Therapeutical Department students obtain instruction in the Treatment of Lupus and Cancer by the X Ray method. An electrocardiograph has recently been installed in this department.

The Hospital and Medical School are fully equipped for the theoretical and practical teaching of all the subjects of the medical curriculum, and for the Diplomas in Public Health. Ample laboratory and class-room accommodation s provided.

The Bland-Sutton Institute of Pathology, which is just completed, contains a new lecture theatre and large pathological, bacteriological, and clinical laboratories where every facility is given for original research. The Anatomical and Pathological Museum is now part of the Institute. Special classes are held to prepare students for the Intermediate examinations of the Universities, and for the Primary and Final examinations for the F.R.C.S. (England) Diploma. There is a Residential College in the hospital for students.

Hospital Appointments.—All appointments are made without fee of any kind, and the following are appointed at intervals annually: six house physicians, eight house surgeons, two obstctric and gynæcological house surgeons, two casualty medical officers, two casualty surgical officers, and two resident officers to the special departments. The medical and surgical casualty officers are appointed twice a year. The medical, surgical, and obstetric and gynæcological registrars are appointed as vacancies arise.

Non-resident qualified clinical assistants are appointed to assist in the various out-patient departments. Clinical clerks and surgical dressers are also appointed in every department.

Scholarships, Prizes, &c.—(*a*), (*b*), and (*c*), Three Entrance Scholarships, value £100, £50, and £25, and (*d*) a University Scholarship, value £50 (for Oxford and Cambridge students), are awarded annually in September. The successful candidates are required to become general students of the school. (*e*) A Freer Lucas Scholarship, value £126, for Students of Epsom College is awarded annually on the nomination of the Headmaster. There are also, (*f*) and (*g*), two Broderip Scholarships, value £60 and £40 respectively; (*h*) the Lyell Gold Medal and Scholarship, value £55 5*s.*; (*i*) the John Murray Medal and Scholarship, value £25 (awarded every third year); (*k*) the Freeman Scholarship, value £30; (*l*) the Hetley Clinical Prize, value £25; (*m*) the Leopold Hudson Prize, value 11 guineas; and (*n*) the Second Year's Exhibition, value 10 guineas. There are also numerous class prize examinations.

In connexion with the Cancer Investigation Department the following Scholarships are awarded:—Richard Hollins Research Scholarship, value £100; Salters' Company Cancer Research Scholarship, value £100; and a Cancer Research Scholarship, value £60.

Fees.—The Composition Fee for the curriculum for the diplomas of the Conjoint Board or Society of Apothecaries is 135 guineas; for the curriculum for the degrees of the University of London 145 guineas; for students who have passed the First Examination for Medical Degrees (University of London), 120 guineas; and for those who have completed their Anatomical and Physiological studies, 70 guineas. The fee for Dental students is 54 guineas. The fees may be paid by instalments.

The Amalgamated Students' Club includes the following: the Medical Society, the Common Room Society, the cricket club, the football clubs, the athletic club, the rowing club, the swimming club, the musical society, the chess club, the lawn tennis club, and the hockey club. The athletic ground, which is eight acres in extent, is situated within easy access of the hospital—at Park Royal. There is a gymnasium within the precincts of the hospital. A subscription to the Amalgamated Students' Club is payable by all General and Dental students.

Medical and Surgical Staff.—Consulting Physicians: Dr. Cayley, Dr. Sidney Coupland, Sir Richard Douglas Powell, Bart., and Sir James Kingston Fowler, K.C.V.O. Consulting Surgeon: Sir Henry Morris, Bart. Consulting Obstetric Physician: Dr. W. Duncan. Consulting Physician to the Skin Department: Dr. Liveing. Consulting Ophthalmic Surgeon: Mr. Lang. Consulting Surgeon to the Ear and Throat Department: Mr. Stephen Paget. Consulting Dental Surgeons: Mr. W. Hern and Mr. W. S. Nowell.

Physicians: Dr. Pasteur, Dr. Wynter, Dr. Voelcker, and Dr. Wethered. Surgeons: Sir Alfred Pearce Gould, K.C.V.O., Sir John Bland-Sutton, Mr. Murray, and Mr. Kellock. Physician and Assistant Physician to the Department for Skin Diseases: Dr. Pringle and Dr. MacCormac. Physician to the Department for Nervous Diseases: Dr. Campbell Thomson (Dean of the Medical School). Obstetric and Gynæcological Surgeon and Assistant Obstetric and Gynæcological Surgeon: Mr. Berkeley and Mr. Bonney. Physician to Out-patients: Dr. Young. Surgeon to Out-patients: Mr. Handley. Assistant Physicians: Dr. Lakin, Dr. MacCormac, and Dr. Cockayne. Assistant Surgeons: Mr. Taylor and Mr. Johnson. Ophthalmic Surgeon and Assistant Ophthalmic Surgeon: Mr. Lawson and Mr. Greeves. Surgeon to the Ear and Throat Department: Mr. Somerville Hastings. Dental Surgeon and Assistant Dental Surgeon: Mr. Turner and Mr. James. Anæsthetists: Mr. T. G. A. Burns, Mr. H. Charles, and Mr. R. E. Apperly. Assistant Anæsthetist (resident): Mr. A. O. Gray. Registrars: Dr. G. E. S. Ward, Mr. Gilliatt, Mr. Webb, and Dr. Morson. Resident Medical Officer: Dr. D. R. C. Shepherd.

Lecturers on Intermediate, Preliminary, and Special Subjects.—Emeritus Lecturer in Psychiatry: Dr. C. Hubert Bond. Lecturer in Psychiatry: Dr. James Chambers. Bacteriology: under the supervision of the director of the Bland-Sutton Institute of Pathology, Dr. Carl H. Browning. Lecturer in Anatomy and Embryology: Dr. Cameron. Lecturers in Physiology and Biology: Dr. Strickland Goodall and Dr. Earle. Lecturer in Chemistry and Physics: Dr. A. M. Kellas.

ST. THOMAS'S HOSPITAL.—This hospital received its present charter from King Edward VI., but as a monastic institution was in existence prior to the year 1207. The building occupies a unique position by the river, opposite the Houses of Parliament, and contains 620 beds. The in-patients last year numbered 9267, whilst the number of attendances as out-patients, including the casualty and light departments, was 250,507. There are departments for the treatment of women, children, the eye, ear, nose and throat, skin, and teeth. Departments for light treatment, X rays, and physical exercises are also special features. Exceptional facilities are offered in the hospital laboratories for the study of general pathology, clinical pathology, chemical pathology, and of treatment by serums and vaccines. Surgical operations take place in the main theatres every day except Saturdays at 2 P.M. Clinical teaching in the wards, out-patients' and special departments, is available every day of the week. Clinical lectures are delivered every Wednesday during the sessions. All appointments in the hospital are open to students without extra fee. Casualty officers and resident anæsthetists, house physicians, house surgeons, obstetric house physicians, ophthalmic house surgeons, and out-patient officers are appointed and hold office for six months. They are provided with rooms and commons in the hospital free of expense. Clinical assistants to all the special departments are appointed every three months; they are non-resident. A resident assistant physician and a resident assistant surgeon, at a salary of £150 each, are appointed biennially; also four hospital registrars (medical, surgical, obstetric, and ophthalmic), the two former receivc a salary of £100 and the two latter £50. An assistant in the clinical laboratory, at a salary of £200 per annum, and an assistant pathologist, at a salary of £200, are from time to time appointed. Appointments open to students before qualification: Clinical clerks and dressers for in- and out-patients are selected from students who have completed their third year's work. The accident dressers are provided with board and lodging during their periods of special duty. Every student acts as clerk in the post-mortem room and in one of the pathological laboratories, takes his turn on maternity duty under proper supervision in the maternity ward, containing 20 beds, which affords students full facilities for maternity training (this obviates any necessity for seeking instruction elsewhere, and fully prepares the student for the extern maternity practice of the hospital district), and is practically instructed in the administration of anæsthetics by one of the hospital anæsthetists. On completion of his term as clerk or dresser he is expected to fill appointments in one or more of the special departments. In their earlier years of study students are selected as assistants to the lecturers in the preliminary and intermediate subjects. The Medical School is fully equipped for the teaching of all subjects of the curriculum. A fine museum and large library are at the disposal of the students. There are three lecture theatres, an unusually large and well-ventilated dissecting-room, and special laboratories for biology, chemistry, physics, physiology, and pathology. The post-mortem room, where demonstrations are given every day, is well ventilated and provided with cold storage. The Students' Club comprises a spacious restaurant and magnificent smoking and reading room. There is no occasion for students to leave the hospital buildings during working hours. The athletic ground of the Amalgamated Clubs at Chiswick is over nine acres in extent and is easily accessible from Waterloo Station. The curriculum is arranged to meet the requirements of all the Examining Bodies. Special classes are held for the examinations at the University of London and for the First and Final Fellowship Examinations of the Royal College of Surgeons of England. Tutorial classes in all subjects precede the various examinations. The hospital is easily accessible from all parts. It is close to the Waterloo and Westminster Bridge Stations (L. & S.W., Bakerloo, and District Railways). Electric trams which pass the doors connect it with all parts of South London. A register of lodgings and a list of medical men and others who are willing to receive boarders is kept by the secretary, Mr. G. Q. Roberts, who will give any further information required.

Fees.—The annual composition fee is 30 guineas, covering all tutorial classes—in addition to a fee on entrance. Qualified practitioners are permitted to attend the hospital practice on terms which may be ascertained from the secretary.

Staff.—Consulting Physicians: Dr. Harley. Sir Seymour J. Sharkey, and Dr. Acland. Consulting Surgeons: Mr. B. Pitts. Consulting Obstetrical Physician: Dr. Gervis. Consulting Ophthalmic Surgeon: Mr. Liebreich. Consulting Anæsthetist: Mr. W. Tyrrell. Consulting Dentist: Mr. C. E. Truman. Physicians: Dr. Hawkins, Dr. Mackenzie, Dr. Turney, and Dr. Perkins. Surgeons: Mr. G. H. Makins, C.B., Mr. Battle. Mr. Ballance, M.V.O., Mr. Robinson, and Mr. Cuthbert Wallace. Physicians to Out-patients: Dr. Box, Dr. Russell, Dr. Buzzard, and Dr. Cassidy. Surgeons to Out-patients: Mr. E. M. Corner, Mr. Percy W. G. Sargent, Mr. C. A. R. Nitch, and Mr. J. E. Adams. Obstetric Physician: Dr. Tate. Obstetric Physician to Out-patients: Dr. Fairbairn and Dr. Hedley. Ophthalmic Surgeons: Mr. Lawford and Mr. Fisher. Physician for Diseases of Children: Dr. Box. Surgeon for Diseases of Children: Mr. J. E. Adams. Mental Diseases: Dr. R. Percy Smith. Surgeon for Diseases of the Throat: Mr. W. G. Howarth Physician for Diseases of the Skin: Dr. E. Stainer. Surgeon for Diseases of the Ear: Mr. Marriage. Dental Surgeon: Mr. R. McKay. Resident Assistant Physician: Dr. J. L. Birley. Resident Assistant Surgeon: Mr. B. C. Maybury. Anæsthetists: Dr. H. Low, Dr. Mennell. Dr. Hedley, Dr. Howitt, and Dr. Dunkley. Pharmaceutist: Mr. J. A. Jennings. Curator of Museum: Mr. S. G. Shattock. Director of Laboratories: Mr. L. S. Dudgeon. Chemical Pathologist: Dr. Hugh Maclean. Superintendent cf X Ray Department: Mr. A. D. Reid. Physical Exercise Department: Mr. R. Timberg. Tuberculosis Department: Dr. R. C. Wingfield. Cardiograph Department: Dr. M. A. Cassidy.

Lecturers and Demonstrators.—Anatomy: Mr. F. G. Parsons, Mr. Adams, Mr. Norbury, and Mr. Page. Chemistry: Dr. Le Sueur. Physiology: Dr. J. Mellanby and Dr. Ritson. Biology: Dr. R. R. Gates and Mr. W. Rushton. Pathology and Bacteriology: Mr. Shattock and Mr. Dudgeon. Surgery: Mr. Robinson and Mr. Wallace. Medicine: Dr. Mackenzie and Dr. Perkins. Practical and Operative Surgery: Mr. Robinson, Mr. Wallace, and Mr. Corner. Comparative Anatomy: Mr. Parsons. Applied Anatomy: Dr. Box. Anæsthetics: Dr. Low. Physics: Mr. Brinkworth. Clinical Medicine: The Physicians. Clinical Surgery: The Surgeons. Midwifery and Diseases of Women: Dr. Tate and Dr. Fairbairn. Diseases of the Eye: Mr. Lawford and Mr. Fisher. Pharmacology and Therapeutics: Professor Dixon. Throat Disease: Mr. W. G. Howarth. Obstetrical Demonstrators: Dr. Fairbairn and Dr. Hedley. Practical Medicine: Dr. Perkins, Dr. Box, Dr. Russell, and Dr. Cassidy. Surgical Classes: Mr. Wallace, Mr. Corner, Mr. Sargent, Mr. Fisher, and Mr. Shattock. Forensic Medicine and Toxicology: Dr. E. Smith and Dr J. C. Withers. Mental Diseases: Dr. W. H. B. Stoddart. Public Health: Professor Simpson, C.M.G. Tropical Medicine: Dr. Sandwith. Instruction in Vaccination by Dr. Cope. Dean of the School: Dr. E. Stainer. Sub-Dean: Dr. C. R. Box. Secretary: Mr. G. Q. Roberts, from whom any further information may be obtained.

Scholarships and Prizes.—At this school there are fiv Entrance Scholarships—namely, two in Arts, equivalent t the tuition fees for the first medical examination; two i Natural Science, of the value of £150 and £60 respectively to be taken out in tuition fees; and the University Scholarship of £50 in Anatomy, Physiology, and Chemistry. Th money value and subjects of examination of th remainder are as follows: (*a*) and (*b*) two Colleg Prizes, one for second-year students and one for third-yea students, £10 and £5 respectively; (*c*) William Tit Scholarship for second-year students, £25; (*d*) and (*e* Musgrove Scholarship or (alternately) Peacock Scholarship, each for third-year students and tenable for tw years, £35 each; (*f*) three College Prizes for fifth-yea students of £10 each and three of £5 each; (*g*) Cheselder Medal, Surgery and Anatomy; (*h*) Mead Medal, Medicine Pathology, and Hygiene; (*i*) Toller Prize, Medicine Pathology, and Hygiene; (*j*) Bristowe Medal, Patholog and Morbid Anatomy: (*k*) Solly Medal and Prize, biennially Surgical Reports; (*l*) Medal for the most distinguishe fifth-year student; (*m*) Wainwright Prize, Medicine, Pathology, and Hygiene; (*n*) Hadden Prize, Pathology; (*o*) Beane Scholarship, £50 biennially, Surgery and Surgical Pathology; (*p*) Sutton Sams Prize, biennially, reports of cases in Obstetric Medicine; (*q*) Grainger Testimonial Prize. £15, Anatomy and Physiology; (*r*) Salters' Company Research Fellowship, tenable for three years, £100 annually, Pharmacology; (*s*) Louis Jenner Research Scholarship, tenable for two years, £60 annually, Pathology; and (*t*) Research Scholarship, tenable for two years, £200 per annum.

University of London, University College.—University College has been constituted a University centre for the teaching of medical sciences. The College Faculty of Medical Sciences comprises the Departments of Physics, Chemistry, Botany, and Zoology (the Preliminary Medical Sciences); also the Departments of Anatomy, Physiology, and Pharmacology (the Intermediate Medical Sciences), and the Departments of Hygiene and Public Health, and of Pathological Chemistry (Post-graduate Study).

Faculty of Medical Sciences.—Composition fees.—For the courses required by the University of London. 1. For the First Medical Course, 26 guineas, entitling to one attendance and to the privileges of the Union Society (including the use of the gymnasium and the athletic ground at Perivale) for one session. 2. For the Second Medical (Intermediate) Course, 58 guineas if paid in one sum; 60 guineas if paid in two instalments of 30 guineas each. This fee entitles to attendance at Anatomy and Physiology during three years (including one attendance at each Practical Course in Physiology) and to one attendance at Organic and Applied Chemistry, Pharmacology, and Materia Medica, and to the privileges of the Union Society (including the use of the gymnasium and the athletic grounds at Perivale) for two sessions.

For the medical education required by the Examining Board in England and the Society of Apothecaries. First examination, Parts I., II., III., 21 guineas, entitling to one attendance and to the privileges of the Union Society (including the use of the gymnasium and the athletic ground at Perivale) for one session. First Examination, Part IV., and second examination, 58 guineas if paid in one sum, and 60 guineas if paid in two instalments of 30 guineas each. This fee entitles to attendance during three years and to the privileges of the Union Society (including the use of the gymnasium and the athletic ground at Perivale) for two sessions.

Professors and Lecturers.—1. First Medical Course.—Chemistry:—Professors: J. N. Collie. Ph.D., LL.D., D.Sc., F.R.S., and F. G. Donnan, M.A., Ph.D., F.R.S.; assistant professor: Samuel Smiles. D.Sc.; teachers of chemistry to medical students: R. H. Plimmer, D.Sc., and W. B. Tuck, D.Sc.; assistants: Irvine Masson, M.Sc., H. T. Clarke, D.Sc., F.I.C., and R. E. Slade, D.Sc.; demonstrators: C. R. Crymble, D.Sc., and H. Terry, B.Sc. Physics:—Professor: F. T. Trouton, M.A., Sc.D., F.R.S.; reader in thermodynamics: A. W. Porter, B.Sc., F.R.S.; assistants: N. Eumorfopoulos, B.Sc., A. O. Rankine, D.Sc., and D. O. Wood, B.Sc. Botany:—Professor: F. W. Oliver, M.A., D.Sc., F.R.S.; reader in plant physiology: T. G. Hill, A.R.C.S.; assistants: E. M. Cutting, M.A., and C. M. Green, B.Sc. Zoology:—Professor: J. P. Hill, D.Sc., F.R.S.; assistants: C. H. O'Donoghue, D.Sc., and F. J.

Bridgman, A.R.C.S. 2. Second Medical (Intermediate) Course.—Anatomy :—Professor G. D. Thane, LL.D., Sc.D., F.R.C.S. ; demonstrator and lecturer in surgical anatomy : H. T. Mant, M.S., F.R.C.S. ; demonstrator, lecturer in physical anthropology, and curator of the museum : D. E. Derry, M.B., Ch.B. ; demonstrator and lecturer in anatomy : T. B. Johnston, M.B., Ch.B. ; assistant demonstrators : J. A. Binning and H. L. G. Foxell, M.R.C.S., L.R.C.P. Jodrell Professor of Physiology : E. H. Starling, M.D., B.S., Sc.D., F.R.C.P., F.R.S. Professor of General Physiology : W. M. Bayliss, D.Sc., F.R.S. Readers : G. A. Buckmaster, M.D., and R. H. Plimmer, D.Sc. Assistant and Sharpey Scholar : C. Lovatt Evans, D.Sc. Pharmacology :—Professor : A. R. Cushny, M.D., F.R.S.

Scholarships and Prizes.—The first three items on the present list require a complete intermediate course at University College. The money value and subjects at examinations are as follows : (*a*) The Bucknill Scholarship, 135 guineas ; (*b*) and (*c*) two Entrance Exhibitions, 55 guineas each, Chemistry, Physics, Botany, and Zoology ; (*d*) Cluff Memorial Prize, £15 biennially, Anatomy, Physiology, and Chemistry ; (*e*) Schäfer Prize in Physiology, £18 triennially ; (*f*) Sharpey Physiological Scholarship, £105, Biological Sciences ; (*g*) Morris Bursary for sons of deceased professional men, by nomination, tenable for two years, £16 a year ; and (*h*) five Gold and five Silver Medals awarded annually in various departments.

UNIVERSITY COLLEGE HOSPITAL MEDICAL SCHOOL.—Dean : G. F. Blacker, M.D., F.R.C.P., F.R.C.S. Vice-Dean : J. Herbert Parsons, B.S., D.Sc., F.R.C.S. Secretary : L. R. Thomas. Fees for Preliminary and Intermediate Course : See under University College. For the Final M.B., B.S. (London) Course, 80 guineas if paid in one sum, 82 guineas if paid in two instalments, as follows—first year, 50 guineas ; second year, 32 guineas. This fee entitles to attendance on Lectures and Hospital Practice during three years and to one attendance on Practical Pathology and Practical Surgery. Vaccination and attendance at a Fever Hospital are not included. Students who obtain a medical qualification within three years of the time of commencing this course are not required to pay an additional fee for further attendance. This course of instruction is also suitable for the corresponding examinations at the Universities of Oxford, Cambridge, and Durham, and for the medical education required by the Examining Board in England and the Society of Apothecaries. There are over 300 beds in the hospital.

Special Departments, Clinical and Laboratory Facilities.—Those who are desirous of carrying out original research in Pathology, including Morbid Anatomy, Bacteriology, Experimental Pathology, and Chemical Pathology, are admitted to work in the laboratories of the school by the Director of Pathological Studies and Research, and under certain conditions can receive grants from the Charles Graham Medical Research Fund. A special course of instruction is given for preparation for the examinations for Diplomas in Public Health of the various universities and examining bodies ; also special courses of Lectures and Demonstrations in Anæsthetics, Diseases of the Eye, Ear, Nose, and Throat, Skin, and Diseases of the Teeth, in Electrical and Radioscopic Diagnosis and Treatment, in Clinical and Tropical Pathology, and in Cardiac Pathology. These courses are designed for senior students and graduates.

Appointments tenable by Students.—Clerkships and dresserships to the physicians, surgeons, anæsthetist, and pathologist are allotted amongst the students of the hospital. Maternity students are appointed each month and reside in the Students' House connected with the Medical School and Hospital. Eight house physicians and house surgeons, four senior and four junior obstetric assistants are selected annually by examination from among the senior students who have a medical qualification. The house physicians and house surgeons reside free in the hospital for six months, and the senior obstetric assistants for three months. In addition to these posts there are certain special appointments which are vacant from time to time and are filled by senior students of the hospital : 1. The Resident Medical Officer. This officer is appointed for a period of two years and is chosen from amongst the more senior recent residents of the hospital. 2. The Surgical Registrar is also chosen from among the more senior recent residents of the hospital. 3. The Obstetric Registrar. 4. Two Casualty Medical Officers and a Casualty Surgical Officer are appointed, each for a period of six months. 5. Assistant in Ear and Throat Department, appointed for one year. 6. Assistant in Ophthalmic Department, appointed for one year. 7. Registrar in Anæsthetic Department, appointed for one year. 8. Deputy Anæsthetists. During the absence of one or another of the Anæsthetists in the summer months a senior qualified student is appointed as a substitute and is granted a special certificate.

Museum of Pathological Anatomy.—The Museum, a spacious and well-lighted room, is open for study from 9 A.M. to 5 P.M. The collection is divided into three sections—medical, surgical, obstetrical and gynæcological. The surgical section is a particularly complete one and contains examples of every variety of surgical disease and injury. Diseases of the skin are well illustrated by a number of wax models which are conveniently displayed in glass cases. The obstetrical and gynæcological section is very complete. Microscopic sections of most of the specimens in the Museum have been prepared and are available for the use of students on application to the Curator. The Museum contains 1100 admirable paintings by Sir Robert Carswell and Sir Charles Bell and a collection of old surgical instruments formerly belonging to Robert Liston.

The Anatomical Museum of the University of London, University College, is open to all students of University College Hospital and Medical School on the recommendation of the School Committee.

The Medical Library is open daily for the purposes of study to every student of the Medical School from 9 A.M. to 5 P.M., Saturdays 9 A.M. to 1 P.M. It contains about 13,500 works on medical subjects, including all the current text-books and works of reference required for study or research.

The Medical Society of University College Hospital Medical School exists for the dual purpose (1) of promoting the study of Medical and Surgical Science, and (2) of promoting social intercourse among its members. All Students of the Medical School are eligible for membership. Meetings are held once a fortnight for the purpose of discussing subjects connected with the study of medicine and the allied sciences and for the exhibition of cases of pathological interest. One room in the Medical School is specially reserved as a Reading Room and is provided with current medical works and periodicals. The society also possesses an osteological and a pathological collection for the use of its members. In its social aspect the society includes various athletic clubs and has the management of three rooms on the ground floor of the Medical School, which are supplied with newspapers, magazines, writing materials, chess- and draught-boards, &c., solely for the use of its members. The society also superintends the gymnasium and squash racquet court in the Medical School. The Athletic Ground, which is used in conjunction with the Union Society of the University of London University College, is situated near the Great Western Railway station at Perivale and is within easy reach of the Hospital and School, about 35 minutes by train from Gower-street station. The following clubs are connected with the society : Cricket Club, Rugby Football Club, Association Football Club, Hockey Club, and Lawn-Tennis Club. The society also has the use of the College racquets and fives courts for its members. The affairs of the society are conducted by a committee elected annually by the members.

Residence of Students.—A register of boarding residences is kept in the office of the Medical School for the convenience of students ; these residences are not under the control of the school authorities. University College Hall, Ealing, is recognised by the Medical School authorities as a residential hostel. The Students' House in University-street contains large and comfortable rooms. The Maternity Students occupy them on payment of a moderate charge.

Private Instruction.—Gentlemen who desire assistance in their studies should consult the Dean or Lecturers.

Hospital Staff.—Consulting Physicians : Sir William R. Gowers, Dr. H. C. Bastian, Sir John Williams, Bart., G.C.V.O., Dr. F. T. Roberts, and Sir Thomas Barlow, Bart., K.C.V.O. Physicians : Sir John Rose Bradford, K.C.M.G., Dr. Sidney Martin, Dr. J. Risien Russell, Dr. H. Batty Shaw, and Dr. F. J. Poynton. Assistant Physicians : Dr. C. Bolton, Dr. T. R. Elliott, and Dr. T. Lewis. Obstetric

Physicians: Dr. H. R. Spencer and Dr. G. F. Blacker. Physician to Skin Department: Dr. A. M. H. Gray. Physician in charge of Mental Diseases Department: Dr. Bernard Hart. Consulting Surgeons: Sir John Tweedy (Ophthalmic) and Sir Victor Horsley. Surgeons: Mr. A. E. Barker, Mr. Raymond Johnson, and Mr. Wilfred Trotter. Assistant Surgeons: Mr. H. Morriston Davies and Mr. G. E. O. Williams. Ophthalmic Surgeons: Mr. Percy Flemming and Mr. J. H. Parsons. Professor and Lecturer on Public Health: Dr. Henry R. Kenwood. Dental Surgeons: Mr. Sidney Spokes and Mr. H. J. Relph. Anæsthetics: Dr. Dudley Buxton and Dr. H. J. Scharlieb. Assistant Anæsthetist: Dr. A. Beresford Kingsford. Surgical Registrar: Mr. F. J. F. Barrington. Resident Medical Officer: Mr. W. J. Pearson. Pathologist: Mr. T. W. P. Lawrence. Assistant Physician in Charge of Cardiographic Department: Dr. T. Lewis. Officer in Charge of Electro-Radiographic Department: Mr. R. H. Cooper. Pharmacist: Mr. C. H. Hampshire.

Teaching Staff.—Medicine—The Principles and Practice of Medicine: Dr. Sidney Martin. Clinical Medicine: Sir John Rose Bradford, Dr. Sidney Martin, Dr. J. Risien Russell, Dr. H. Batty Shaw, Dr. F. J. Poynton, Dr. C. Bolton, Dr. T. R. Elliott, and Dr. T. Lewis. Therapeutics: Dr. H. Batty Shaw. Surgery—The Principles and Practice of Surgery: Mr. Arthur E. J. Barker. Clinical Surgery: Mr. Arthur E. J. Barker, Mr. Raymond Johnson, Mr. Wilfred Trotter, Mr. H. Morriston Davies, and Mr. G. E. O. Williams. Practical Surgery: Mr. H. Morriston Davies and Mr. G. E. O. Williams. Surgical Anatomy: Mr. H. T. Mant. Midwifery and Gynæcology: Dr. H. R. Spencer. Clinical Midwifery and Gynæcology: Dr. H. R. Spencer and Dr. G. F. Blacker. Diseases of Childhood: Dr. F. J. Poynton, Mr. H. Morriston Davies, Mr. Percy Flemming, and Mr. Herbert Tilley. Pathology and Morbid Anatomy—General Pathology: Dr. Charles Bolton. Practical Pathology: Dr. F. H. Thiele, Mr. T. W. P. Lawrence, Mr. D. Embleton, and Mr. S. H. Warren. Laboratory and Special Instruction: Dr. Charles Bolton. Chemical Pathology and Clinical Pathology: Dr. F. H. Thiele. Museum of Pathological Anatomy and Post-mortem Examination: Mr. T. W. P. Lawrence. Cardiac Pathology: Dr. T. Lewis. Parasitic Protozoology: Mr. A. C. Stevenson. Forensic Medicine: Dr. F. J. Poynton. Diseases of the Eye—Ophthalmic Medicine and Surgery: Mr. Percy Flemming. Clinical Ophthalmology: Mr. Percy Flemming and Mr. J. Herbert Parsons. Diseases of the Ear and Throat: Mr. Herbert Tilley and Mr. G. Seccombe Hett. Diseases of the Skin: Dr. A. M. H. Gray. Psychiatry: Dr. Bernard Hart. Dental Surgery: Mr. Sidney Spokes and Mr. H. J. Relph, and the Staff of the Dental Department. (In the Dental Department in Great Portland-street, formerly known as the National Dental Hospital, there is afforded the opportunity for attending lectures and practical instruction in diseases of the mouth and teeth.) Instruction in the Use of Anæsthetics: Dr. Dudley W. Buxton. Electro-radiographic Department: Mr. R. Higham Cooper. Practical Pharmacy: Mr. C. H. Hampshire.

Scholarships and Prizes.—At this School the first two Scholarships (*a*) and (*b*) require a complete course at University College and University College Hospital Medical School; the second two (*c*) and (*d*) require a final course at the Medical School. The money value and subjects of examination are as follows:—(*a*) Entrance Scholarship, Bucknill, 135 guineas, Chemistry, Physics, Botany, and Zoology; (*b*) Epsom Free Medical Scholarship, subjects of Preliminary Scientific Examination and Nomination by Epsom College; (*c*) and (*d*) two Goldsmid Entrance Exhibitions, 80 guineas each, Anatomy and Physiology; (*e*) Graham Scholarship in Pathology £200 per annum for two years, awarded by the Senate of the University of London; (*f*) Atkinson Morley Scholarship, tenable for three years, £45 per annum, Surgery; (*g*) Atchison Scholarship, tenable for two years, £55 per annum; General Proficiency in Medical Studies: (*h*) Magrath Clinical Scholarship, about £100, Clinical Cases; (*i*) Filliter Exhibition, £30, Pathology; (*j*) Erichsen Prize, £10 10*s.*, Practical Surgery; (*k*) two Senior and two Junior Fellowes Clinical Medals for Clinical Medicine; (*l*) two Liston Gold Medals for Clinical Surgery; (*m*) Alexander Bruce Gold Medal for Pathology and Surgery; and (*n*) Tuke Silver and Bronze Medals for Pathology.

WESTMINSTER HOSPITAL.—The hospital contains 215 beds and affords relief to upwards of 2000 in-patients and 30,000 out-patients annually. There are separate departments for Diseases of the Eye, Ear, Skin, Teeth, and Throat, for Orthopædic practice, for Diseases of Women, for Diseases of Children, for Radiography, and for the Light Treatment. The Anatomical, Pathological, and Materia Medica Museums are open to all students of the school.

A medical and surgical registrar, each with a salary of £50, are appointed annually. Two house physicians, three house surgeons, and a resident obstetric assistant are appointed for six months after examination, and are provided with rooms and commons; also one assistant house physician and one assistant house surgeon with commons only. Clinical assistants to the assistant physicians and assistant surgeons, and to the officers in charge of special departments, are appointed from among qualified students of the hospital.

By a scheme for the concentration of the teaching of the preliminary and intermediate subjects of the curriculum, which has the support of the London University, an arrangement has been made by the Westminster School for the teaching of these subjects at King's College. Students, however, join the Westminster Medical School as formerly and may compete for Entrance Scholarships as heretofore.

There is laboratory accommodation for practical work in Chemistry, Physics, Biology, Anatomy, Physiology, Histology, Pathology, and Bacteriology, and a new Clinical Laboratory has recently been erected. Facilities for research are afforded in all the laboratories.

For membership of the Clubs Union students are not required to pay, the expense being covered by the entrance fee to the school.

Staff.—Consulting Medical Staff: Sir Bryan Donkin, Dr. de Havilland Hall, Dr. Hebb, and Dr. T. Colcott Fox. Consulting Surgical Staff: Mr. Richard Davy, Mr. G. Cowell, and Mr. N. C. Macnamara. Medical In-patient Staff: Dr. A. M. Gossage, Dr. Purves Stewart, and Dr. Carmalt Jones. Obstetric Physician: Dr. G. H. Drummond Robinson. Surgical In-patient Staff: Mr. C. Stonham, Mr. W. G. Spencer, and Mr. A. H. Tubby. Medical Out-patient Staff: Dr. D. H. de Souza, Dr. Kinnier Wilson, and Dr. O. K. Williamson. Physician for Diseases of the Skin; Dr. S. E. Dore. Assistant Obstetric Physician: Dr. S. Dodd. Medical Officer in Charge of Electrical Department: Mr. E. S. Worrall. Surgical Out-patient Staff: Mr. W. Turner, Mr. Arthur Evans, Mr. Rock Carling, and Mr. J. M. G. Swainson. Surgeon in charge of the Throat Department: Mr. P. R. W. De Santi. Ophthalmic Surgeon: Mr. G. Hartridge. Assistant Ophthalmic Surgeon: Mr. G. T. B. James. Surgeon in charge of the Orthopædic Department: Mr. W. Turner. Surgeon in charge of the Ear Department: Mr. P. R. W. De Santi. Dental Surgeons: Mr. C. W. Glassington and Mr. E. Gardner. Administrators of Anæsthetics: Dr. N. W. Bourns and Dr. V. B. Orr. Physician Pathologist: Dr. R. G. Hebb. Assistant Pathologist and Curator of Museum: Dr. J. A. Braxton Hicks. Resident Medical Officer: Mr. H. L. Attwater. Medical Registrar: Dr. H. B. Carlill. Surgical Registrar: Mr. R. Farrant. Pharmacist: Mr. A. E. Tanner. Secretary; Mr. S. M. Quennell.

Lecturers.—Clinical Medicine: Dr. Gossage, Dr. Stewart, and Dr. Carmalt Jones. Clinical Surgery: Mr. Stonham, Mr. Spencer, and Mr. Tubby. Clinical Gynæcology: Dr. Drummond Robinson. Medicine: Dr. Gossage, Dr. Purves Stewart, Dr. Carmalt Jones, Dr. de Souza, Dr. Kinnier Wilson, Dr. Williamson, and Lieutenant-Colonel Pratt. Elementary Practical Medicine: Dr. de Souza, Dr. Kinnier Wilson, and Mr. Worrall. Diseases of the Skin: Dr. S. E. Dore. Insanity: (vacant). Surgery: Mr. W. Turner. Ophthalmic Surgery: Mr. Hartridge. Surgery of the Throat and Nose: Mr. De Santi. Orthopædic Surgery: Mr. Tubby. Aural Surgery: Mr. De Santi. Dental Surgery: Mr. Glassington. Anæsthetics: Dr. Orr. Operative Surgery: Mr. Arthur Evans. Surgical Anatomy: Mr. Rock Carling. Practical Surgery: Mr. Swainson. Surgical Pathology: Mr. Arthur Evans. Midwifery and Diseases of Women: Dr. Drummond Robinson. General Pathology and Morbid Anatomy: Dr. Hebb. Post-mortem Demonstrations: Dr. Hebb and Dr. Braxton Hicks. Morbid Histology, Medical Pathology, and Clinical and Chemical

Pathology: Dr. J. A. Braxton Hicks. Materia Medica, Therapeutics, and Pharmacology: Dr. Dixon. Forensic Medicine: Dr. Bernstein. Toxicology: Dr. H. Wilson Hake. Public Health: Dr. S. Monckton Copeman. Bacteriology: Dr. Bernstein. Anatomy (Professor): Dr. David Waterston, (Lecturer) Dr. R. J. Gladstone. Demonstrators of Practical Anatomy: Mr. Boyd and Mr. Fenwick. Physiology: Dr. Halliburton. Practical Physiology and Histology: Dr. Halliburton, Mr. Myers-Ward, Dr. Locke, and Dr. Rosenheim. Biology: Dr. Bottomley and Mr. Schwartz. Chemistry and Practical Chemistry: Dr. Thomson, Mr. Jackson, Mr. Kirkaldy, Mr. Collins, and Mr. Hinkel. Physics: Dr. Richardson, Dr. Allen, Dr. H. Moore, and Mr. Martyn. Secretary and Librarian: Dr. E. B. Hulbert.

Scholarships and Prizes.—The following Entrance Scholarships are offered for competition: Winter Session: (*a*) Arts Scholarship, the "Guthrie," £60. (*b*) Science Scholarships: Natural Science Scholarship, £60; Chemistry and Physics Scholarship, £30; and Two Scholarships in Anatomy and Physiology, £50 each. Summer Session: Two Scholarships in Anatomy and Physiology, £50 each. During the period of study the following prizes may be competed for: Sturges Prize in Clinical Medicine, about £6, Notes of Cases; Clinical Surgery Prize, £5, Notes of Cases; Chadwick Prize £21 in books or instruments, Medicine and Surgery, including Pathology and Applied Anatomy and Physiology; Frederic Bird Medal and Prize, open to Fourth-year Students, £14 in medal and books or instruments—Midwifery, Diseases of Women, Medicine, Pathology, Forensic Medicine and Bacteriology, and Public Health and Toxicology; Abrahams Prize in Clinical Pathology, 5 guineas, a Paper and Tests in Practical Work; Alfred Hughes Memorial Prize, open to Second-year Students, about £5 in books or instruments—Anatomy; Huxley Memorial Prize, 3 guineas in books or cash, open to Second-year Students—Physiology; Carter Gold Medal and Prize for Botany, open to Students of not more than three years' attendance, gold medal and books of the joint value of £15; Jelf Medal awarded to Third-year Students; Second-year Scholarship, £20, Elementary Anatomy, Physiology, Histology, and Organic Chemistry; Daniell Scholarship, tenable for two years, £20, Chemistry; Rabbeth Scholarship, open to First-year Students, £20, Class Examinations in the Preliminary Scientific Course; and the Sambrooke King's College Scholarship in Science, value £25.

LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN, 8, Hunter-street, Brunswick-square, W.C.—The fee for the medical course for the degrees of the University of London and for the diplomas of the Royal Colleges of England is £160 in one sum, or £170 in five instalments. The fee for the course for the University of Durham, the Society of Apothecaries, and the Conjoint Colleges of Scotland, including Elementary Science, is £140 in one sum, or £150 in four instalments.

The hospital contains 165 beds, of which 78 are reserved for surgical, 64 for medical, 13 for gynæcological, six for ophthalmic, and four for isolation cases. A new block is in course of construction, and will be completed shortly, containing large and completely equipped departments for Out-patients, Massage, Dental, X Ray, and Electrical Work, Maternity (11 beds), and Casualty. New and enlarged students' quarters are also being provided. The number of in-patients treated during the past year was 2397. There is also a department for attending women in their confinements at their own homes. Students can also attend the in-patient and out-patient practice of the New Hospital for Women.

Special courses are arranged for the Primary Fellowship Examination of the College of Surgeons; also for dental students in conjunction with the National Dental Hospital.

Students after qualification can hold at the Royal Free Hospital the posts of house physician, house surgeon, obstetric assistants, clinical assistants, anæsthetists and assistant anæsthetist, medical and surgical registrars, medical electrician, and museum curator; and at the Medical School the posts of demonstrators in the departments of Anatomy, Physiology, Chemistry, and Physics. They can also hold posts at the New Hospital for Women, which is officered entirely by medical women, and at four other hospitals in London entirely officered by medical women. Various other resident posts in London are also open to them.

The School buildings have been entirely rebuilt in recent years, and there are spacious, well-equipped laboratories, which afford every facility for efficiency of teaching and practical work in all departments.

There are residential chambers at 8, Hunter-street, with accommodation for 16 students, and the Secretary can be consulted on the subject of other residences for students. The Students' Union arranges the social, athletic, and other clubs and societies at the School.

Staff.—Consulting Physicians: Dr. S. West and Dr. Sainsbury. Physicians: Dr. J. W. Carr and Dr. A. G. Phear. Assistant Physicians: Dr. W. P. S. Branson, Dr. Saunders, and Dr. Firth. Consulting Surgeon: Mr. A. B. Barrow. Surgeons: Mr. J. Berry, Mr. W. H. Evans, and Mr. Cunning. Consulting Neurologist: Dr. Farquhar Buzzard. Consulting Physician for Diseases of Women: Dr. Mary Scharlieb. Physician for Diseases of Women: Dr. Ethel Vaughan-Sawyer. Assistant Physician for Diseases of Women: Dr. Florence Willey. Surgeon for Diseases of Throat, Nose, and Ear: Mr. J. Gay French. Assistant Surgeon: Mr. C. Pannett and Mr. C. A. Joll. Surgeon for Diseases of Skin: Mr. W. H. Evans. Dental Surgeons: Dr. Eva Handley Read, L.D.S., and Mr. E. P. Hudson, L.D.S. Senior Resident Medical Officer: Mr. R. C. MacQueen. Registrars: Dr. Ellen Pickard and Miss E. Davies-Colley, F.R.C.S. Anæsthetists: Dr. May Dickinson Berry and Dr. Jane Turnbull. Secretary: Mr. Reginald Garratt.

Lecturers.—At the School: Anatomy and Practical Anatomy: Dr. F. Wood-Jones. Physiology and Practical Physiology: Dr. Winifred Cullis. Chemistry: Mr. J. A. Gardner, M.A., F.I.C., and Miss Widdows, B.Sc. Physics: Miss E. Stoney, M.A. Biology: Mr. Mudge, A.R.C.S. Pharmacology: Dr. F. Ransom. Practice of Medicine: Dr. J. W. Carr and Dr. Emily Flemming. Midwifery: Dr. Florence Willey. Gynæcology: Dr. Ethel Vaughan-Sawyer. Forensic Medicine: Dr. Hawthorne. Toxicology: Dr. Wilson Hake. Practice of Surgery: Miss Aldrich-Blake and Mr. W. H. Evans. Operative Surgery: Mr. Cunning. Pathology: Dr. W. d'Este Emery. Mental Pathology: Dr. Stoddart. Tropical Diseases: Dr. C. W. Daniels. Operative Midwifery: Dr. Florence Willey. Demonstrators of Anatomy, Dr. Mary Lucas; of Physiology, Mrs. Tribe, B Sc.; of Chemistry, Miss Laycock, B.Sc.; of Physics, Miss Waller, B.Sc.; of Practical Pharmacy, Miss Buchanan, M.P.S. At the Royal Free Hospital: Clinical Medicine: Dr. Carr and Dr. Phear. Clinical Surgery: Mr. Berry and Mr. Evans. Clinical Obstetrics: Dr. Florence Willey. Pathology: Dr. Helen Chambers. Bacteriology: Dr. Helen Chambers. Surgical Tutors: Mr. Cunning, Mr. Legg, and Mr. Pannett. Medical Tutors: Dr. Branson, Dr. Saunders, and Dr. Firth. Practical Pathology: Miss G. Gazdar, M.B., B.S.

Dean of the School, Miss Aldrich-Blake, M.D., M.S.; Honorary Secretary, Dr. May Thorne; Secretary and Warden, Miss L. M. Brooks.

Scholarships and Prizes.—At this School candidates for the second item (*b*) on the following list must be (1) not more than 20 years of age on June 1st in the year of the examination; (2) resident in the Metropolitan Police district; (3) Matriculated Students of the University of London; and (4) in need of an Exhibition for the prosecution of their medical studies. The third item (*c*) is given as the result of an examination held by the University of London in June to a student who has passed the First or Second Medical Examinations of that University held in the previous July or the July following the examination. Candidates are expected to read for the M.B., B.S. degree of the University of London. The money value and subjects of examination are as follows: (*a*) Isabel Thorne Scholarship, £30, English, Latin, Arithmetic, Euclid, and Algebra. (*b*) St. Dunstan's Medical Exhibition, tenable for three or five years, £60, English, Latin, Arithmetic, Euclid, and Algebra. (*c*) Bostock Scholarship, tenable for two or four years, and next to be awarded in June, 1915, £60. (*d*) Mabel Sharman-Crawford Scholarship, tenable for four years, £20; awarded on result of an examination in Biology, Chemistry, and Physics. (*e*) Mabel Webb Research

Scholarship, tenable for one year and renewable, £30, Physiology, Chemistry, or Pathology. (*f*) Fanny Butler Scholarship, tenable for four years; candidates must be willing to work in connexion with the Church of England Zenana Missionary Society; next award in September, 1914, £14 10*s*. (*g*) John Byron Bursary, tenable from two to four years, for students already in the School requiring assistance for the prosecution of their medical studies, application to the Secretary by March 31st; next award in March, 1916, £20. (*h*) Helen Prideaux Scholarship, awarded every second year to a student who has become qualified during the two years immediately preceding the award, and to be spent in assisting the holder to further study, £40, Medicine, Surgery, Obstetric Medicine, and Pathology. (*j*) Agnes Guthrie Bursary, value £60, is offered annually to students who desire to pursue a full conrse of study for the Licentiateship in Dental Surgery. Candidates will be required to fulfil the following conditions: (1) Have passed a Preliminary Arts Examination qualifying for registration; (2) produce evidence as to need for financial assistance; (3) furnish references from former teachers; (4) make a written statement of previous education and career. The Bursary will be awarded on the recommendation of a Board of Electors in September each year. Applications must reach the Secretary by Sept. 15th, 1914. (*k*) Dr. Edith Pechey Phipson Post-graduate Scholarship of the value of £40 is awarded annually in June by the Council of the London (Royal Free Hospital) School of Medicine for Women who are the trustees of the scholarship. It is open to all medical women, preferably coming from India, or going to work in India, for assistance in Post-graduate study. The scholarship may, at the discretion of the trustees, be held by one recipient for a term not exceeding three years. Forms of application can be obtained from the Secretary of the School and must be filled in and returned by May 31st in each year. Two Richardson-Kuhlmann Prizes are given each year, value £12 for proficiency in Clinical Obstetrics, value £8 8*s*. for proficiency in senior subjects respectively. Three Evans Prizes of £3 3*s*., £2 2*s*., and £1 1*s*. are given in alternate years on the results of the class examination in Midwifery. The Evans Prize for Operative Midwifery, value £5 5*s*., is awarded yearly. The Edith Pechey Phipson Prize in Pharmacology, value £3 3*s*., is awarded annually. Prizes of £10 each are awarded yearly in Anatomy and Physiology. There is also a small fund from which assistance can occasionally be given to students and to graduates who specially require pecuniary help. Prizes and Certificates of Honour are awarded in each class at the end of the session.

UNIVERSITY OF DURHAM.

Two Diplomas, one Licence, and six degrees are conferred—viz., the Diploma in Public Health, Diploma in Psychiatry, the Licence in Dental Surgery, and the degrees of Bachelor of Medicine, Bachelor of Surgery, Master of Surgery, Doctor of Medicine, Bachelor of Hygiene, and Doctor of Hygiene. These degrees, Diploma, and Licence are open to Men and Women.

For the degree of *Bachelor of Medicine* there are four professional examinations. The subjects of the First Examination are—Elementary Anatomy and Elementary Biology, Chemistry, and Physics. The subjects of the Second Examination are—Anatomy and Physiology. The subjects for the Third Examination are—Materia Medica and Pharmacy, Pathology, Medical Jurisprudence, Public Health, and Pathology and Elementary Bacteriology. The subjects of the Fourth Examination are—Medicine, Clinical Medicine and Psychological Medicine, Surgery and Clinical Surgery, Midwifery and Gynæcology, Therapeutics, and Diseases of the Skin, of the Throat, Nose, and Ear, and of Children.

It is required that at least one of the five years of professional education shall be spent in attendance at the University College of Medicine, Newcastle-upon-Tyne. Candidates who have passed the First and Second Examinations of the University will be exempt from First and Second Examinations of the Conjoint Board.

For the degree of *Bachelor of Surgery* every candidate must have passed the examination for the degree of Bachelor of Medicine of the University of Durham and must have attended one course of lectures on Operative Surgery and one course on Applied Anatomy. Candidates will be required to perform operations on the dead body and to give proof of practical knowledge of the use of surgical instruments and appliances.

For the degree of *Master of Surgery* a candidate must not be less than 24 years of age and must satisfy the University as to their knowledge of Greek or German. If he has not already satisfied the Matriculation Examiners in either Greek or German he must pass in one of these subjects at one of the ordinary matriculation examinations of the Newcastle division of the University. He must also have obtained the degree of Bachelor of Surgery of the University of Durham and must have been engaged for at least two years subsequently to the date of acquirement of the degree of Bachelor of Surgery, in attendance on the practice of a recognised hospital, or in the naval or military services, or in medical or surgical practice. The subjects of examination are:—Principles and Practice of Surgery, Surgical Pathology, Surgical Anatomy, Surgical Operations, Clinical Surgery.

For the degree of *Doctor of Medicine* a candidate must be not less than 24 years of age and must satisfy the University as to their knowledge of Greek or German. If he has not already satisfied the Matriculation Examiners in either Greek or German he must pass in one of these subjects at one of the ordinary matriculation examinations of the Newcastle division of the University. He must also have obtained the degree of Bachelor of Medicine of the University of Durham and must have been engaged for at least two years subsequently to the date of acquirement of the degree of Bachelor of Medicine in attendance on the practice of a recognised hospital, or in the military or naval services, or in medical and surgical practice. Each candidate must present an essay prepared entirely by himself, which must be typewritten, based on original research or observation, on some medical subject selected by himself, and approved of by the Professor of Medicine and must pass an examination thereon, and must be prepared to answer questions on the other subjects of his curriculum so far as they are related to the subject of the essay

Doctor of Medicine (without residence).—The University of Durham has instituted a special examination whereby the degree of Doctor of Medicine may be obtained without residence. Candidates shall not be under 40 years of age and shall have been in active practice for 15 years as registered medical practitioners. They shall produce certificates of moral character from three registered members of the medical profession, and if they have not passed an examination in Arts previously to the Professional Examination in virtue of which they have been placed on the Register, they shall be required to pass in Classics and Mathematics. Candidates who have passed an examination in Arts previously to being placed on the Register are required to pass an examination in Latin. They will be examined in the Principles and Practice of Medicine, including Psychological Medicine, Hygiene, and Therapeutics, the Principles and Practice of Surgery, Midwifery, and Diseases of Women and Children, Pathology (Medical and Surgical), Anatomy (Medical and Surgical), Medical Jurisprudence, and Toxicology. The fee will be 50 guineas, of which 20 guineas will be retained if the candidate fails to satisfy the examiners.

Candidates for any of the above degrees, diplomas or licence, must give at least 28 days' notice to Professor Howden, Secretary, College of Medicine, Newcastle-upon-Tyne. In the case of the M.D. (essay) examination candidates must send in their essays six weeks before the date of the examination.

Professors—Principles and Practice of Medicine: Sir G. H. Philipson, M.D., Dr. David Drummond, and Sir T. Oliver, M.D. Psychological Medicine: Dr. T. W. McDowall. Surgery: Mr. James Rutherford Morison, Mr. Henry Brunton Angus, and Mr. G. Grey Turner. Ophthalmology: Dr. John Dobson Wardale. Midwifery and Diseases of Women and Children: Dr. R. P. Ranken Lyle. Pathology: Dr. Stuart McDonald and Dr. William Tait Sewell. Medical Jurisprudence: Dr. Robert A. Bolam. Public Health: Dr. Thomas Eustace Hill. Therapeutics: Dr. Thomas Beattie. Anatomy: Dr. Robert Howden, F.R.S.E.; demonstrators, Dr. James Dunlop Lickley and Mr. W. Johnston. Applied Anatomy: Mr. John Clay. Physiology: Dr. Francis Arthur Bainbridge and Dr. James Acworth Menzies. Materia Medica and Pharmacology: Dr. William Errington Hume. Comparative Pathology and Bacteriology: Mr. H. J. Hutchens; lecturer, Mr. Percy Charles W. Laws; demonstrator (vacant); assistant demonstrator, Dr. George Hall.

Scholarships and Prizes.—In connexion with this University the following scholarships and prizes are awarded:—(*a*), (*b*), (*c*), and (*d*). Four Scholarships of £25 a year each, tenable for four years; the examination will be the September Matriculation Examination. Candidates must take English, Latin, Arithmetic, Euclid, Algebra, Geography, English History, with Greek or German, or both. (See College Calendar for special books.) Open to candidates desirous of being admitted as Medical Students. The successful candidates must take out their entire curriculum at the University of Durham College of Medicine, Newcastle-upon-Tyne. (*e*) Pears Scholarship of £50 a year (when vacant), tenable for three years; Matriculation Examination.—At the College of Medicine are: (*f*) Dickinson Scholarship, interest on £400 and gold medal; examination in Medicine, Surgery, Midwifery, and Pathology. Open to full students of the College of Medicine who have passed the third M.B. Examination. (*g*) Tulloch Scholarship, interest on £400; examination in Anatomy, Physiology, and Chemistry. No student is eligible who commenced his medical curriculum more than two academical years before the date of examination. (*h*) Charlton Memorial Scholarship, interest on £700; examination in Medicine. Open to full students of the College entered for the class on the Principles and Practice of Medicine. (*i*) Gibb Scholarship, interest on £500; awarded annually as a Scholarship in Pathology to full student who passes the best examination in that subject. No student is eligible after completion of his curriculum. (*j*) Luke Armstrong Memorial Scholarship, interest on £680: original essay on some subject in Comparative Pathology. (If no essay of sufficient merit be presented the scholarship may be awarded to the candidate who, in passing the first part of the Examination for the B.Hy. Degree, obtains the highest number of marks in Comparative Pathology during the year.) Open to all Graduates in Medicine or Hygiene and candidates for these degrees who have spent six months at the University and whose age does not exceed 30 years. (*k*) Stephen Scott Scholarship, interest on £1000; original essay on any Surgical subject. Open to any graduate in Medicine or Surgery of the University or any student of the College of Medicine. Student's age must not exceed 30 years. (*l*) Heath Scholarship, interest on £4000. For 1914: Original Essay on Natural Cures in Surgical Abdominal Disease. All Graduates in Medicine or Surgery of the University are eligible. (*m*) Gibson Prize, interest on £225; examination in subject of Midwifery and Diseases of Women and Children. Open to students who have attended one course of lectures on Midwifery and Gynæcology. (*n*) Outterson-Wood Prize, interest on £250, in Psychological Medicine. (*o*) Turnbull Prize and Medal; examination in Surface Anatomy. Open to students at end of their second winter session.—At the Royal Infirmary is (*p*) Goyder Memorial Scholarship, interest on £325; awarded annually to student who most distinguishes himself in Clinical Medicine and Clinical Surgery at the Royal Infirmary. For further information apply to Professor Howden, Secretary of the College.

Hygiene.—The regulations with regard to the degrees in Sanitary Science will be found under the section on Public Health.

THE COLLEGE OF MEDICINE, Newcastle-upon-Tyne.—A new wing has been added to accommodate the departments of physiology and bacteriology. It also contains a students' gymnasium and a set of Students' rooms.

Clinical Instruction.—The new Royal Victoria Infirmary, containing upwards of 400 beds, was opened by His late Majesty King Edward VII. in 1906. In it adequate accommodation is provided for the study of the various special subjects, in addition to the ordinary clinical work. The following Scholarships and Prizes are awarded annually:—Four University of Durham Scholarships, value £25, tenable for four years, for proficiency in Arts, awarded to full students in their first year. The Pears Scholarship, value £50 a year, tenable for three years (when vacant). The Dickinson Scholarship, value the interest of £400, and a Gold Medal, for Medicine, Surgery, Midwifery, and Pathology. The Tulloch Scholarship, value the interest of £400, for Anatomy, Physiology, and Chemistry. The Charlton Scholarship, value the interest of £700, for Medicine. The Gibb Scholarship, value the interest of £500, for Pathology. The Goyder Memorial Scholarship (at the Infirmary), value the interest of £325, for Clinical Medicine and Clinical Surgery. The Luke Armstrong Memorial Scholarship, value the interest of £680, for Comparative Pathology. The Stephen Scott Scholarship in Surgery, value the interest of £1000. Heath Scholarship: The late Dr. George Yeoman Heath, President of the University College of Medicine, bequeathed £4000 to found a Scholarship in Surgery, the interest to be awarded every second year. The Gibson Prize, interest on £225, in the department of Midwifery and Gynæcology. The Outterson-Wood Prize in Psychological Medicine. The Turnbull Prize and Medal for Surface Anatomy. At the end of each session Prizes of Books are awarded in each of the regular classes. Assistant Demonstrators of Anatomy, Prosectors, and Assistant Demonstrators of Physiology and Pathology are elected yearly. Pathological Assistants, Assistants to the Dental Surgeon, Assistants in the Eye Department, Throat and Ear Department, and Skin Department, Clinical Clerks, and Dressers are appointed every three months.

NEWCASTLE-UPON-TYNE ROYAL VICTORIA INFIRMARY.—This Infirmary was founded in 1751, but has been entirely rebuilt, the new hospital being opened by His late Majesty King Edward VII. in 1906. The number of beds is 466. The number of in-patients annually is 8900 and of out-patients 69,000. The aggregate out-patient attendance is 101,000. The medical students of the University of Durham attend the practice of this hospital. Clinical Lectures are delivered by the Physicians and Surgeons weekly and ward demonstrations are given daily. Tutorial classes are held by the Assistant Physicians, Assistant Surgeons, and Surgical Registrars weekly, and demonstrations are given in the several out-patient departments daily. Pathological demonstrations are given by the Pathologist daily or as opportunity occurs, and in the new buildings nothing has been spared in perfecting scientific equipment. In addition to medical and surgical in-patient and out-patient departments the following special departments are fully equipped for teaching students: Ophthalmic, Throat, Nose, and Ear, Skin, Gynæcological, and Electrical. The hospital building contains the following laboratories: 1. Special Pathological Laboratory, attached to the post-mortem rooms. 2. Bacteriological Laboratory, in which all clinical bacteriological investigations are carried out—opsonic indices estimated with a view to treatment by vaccines and serums, &c. 3. There is in addition a Clinical Laboratory attached to each ward and to the out-patient department. There are five operating theatres in use in the hospital, three large theatres, a smaller one for emergencies, and an out-patient theatre. The surgical practice is especially good; more than 8000 surgical operations were performed in the last 12 months. Every facility is given to students to take out the full or any part of the hospital curriculum, and clerkships or assistantships in any of the several special departments are open to undergraduates or graduates for periods of from one to three months. There are 12 resident medical and surgical officers, all of whom are paid, and preference for these appointments is given to students who have fulfilled their curriculum in the hospital. The session opens on April 18th and Oct. 1st of each year. Applications for detailed information should be made to the Dean, Dr. Horsley Drummond, at the hospital.

Staff.—Physicians: Dr. T. Beattie, Dr. W. E. Hume, Dr. Horsley Drummond, and Dr. Alfred Parkin. Assistant Physicians: Dr. George Hall, Dr. T. M. Allison, Dr. D. W. Patterson, and Dr. T. C. Hunter. Surgeons: Mr. A. M. Martin, Mr. H. B. Angus, Mr. J. V. W. Rutherford, and Mr. W. G. Richardson. Assistant Surgeons: Mr. J. W. Leech, Mr. John Clay, Mr. G. G. Turner, and Mr. R. J. Willan. Ophthalmic Surgeon: Mr. J. D. Wardale. Assistant Surgeon: Mr. T. Gowans. Throat and Ear Department: Surgeon: Mr. S. S. Whillis. Assistant Surgeon: Mr. W. F. Wilson. Gynæcological Department: Dr. R. P. R. Lyle. Skin Department: Physician: Dr. Robert A. Bolam. Electrical Department: Dr. W. D. Arnison. Pathologist: Dr. Stuart McDonald. Assistant Pathologist: Dr. W. T. Sewell. Bacteriologist: Dr. H. J. Slade. Pathological and Analytical Chemist: (vacant). Anæsthetists: Dr. F. G. Armstrong, Dr. W. J. Phillips, Dr. H. H. Markham, and

Dr. W. Seymour. Medical Registrars: Miss H. Gurney and Dr. J. Leslie Wilson. Surgical Registrars: Mr. J. W. Heslop, Mr. J. C. Stewart, Mr. R. J. Willan, Mr. Hamilton Drummond, and Mr. F. C. Pybus.

There are other institutions at which the student of medicine of the University of Durham can receive clinical instruction. Practical Midwifery can be studied at the Newcastle Lying-in Hospital. Instruction is given in Psychological Medicine at the Northumberland County Asylum, Morpeth, by Professor T. W. McDowall, the Superintendent. A special course of instruction is given in the City Hospital for Infectious Diseases by the Superintendent, the City Officer of Health, Dr. Harold Kerr.

NORTHUMBERLAND, DURHAM, AND NEWCASTLE INFIRMARY FOR DISEASES OF THE EYE, St. Mary's-place, Newcastle-on-Tyne.—Consulting Surgeon: Dr. F. Page. Staff Surgeons: Mr. A. S. Percival and Mr. H. P. Bennett. Assistant Surgeons: Dr. Stanley Robson. Honorary Anæsthetist: Dr. O. W. Ogden. House Surgeon: Miss F. Rahtkens. Matron: Miss M. Webster. Secretary: Mr. Richard Smith, 61, Westgate-road, Newcastle-on-Tyne. Out-patients 9853; in-patients, 338.

UNIVERSITY OF BIRMINGHAM.

The University of Birmingham grants the degrees of M.B., Ch.B., M.D., Ch.M., and also a degree and a diploma in Public Health. The course for the Bachelors' degrees extends over five years from the date of registration with the General Medical Council. As a rule the first four of these years must be spent in the University, but the Senate has power of recognising attendance at another University as part of the attendance qualifying for these degrees and of recognising examinations passed at such other Universities as exempting from the examinations in Chemistry, Physics, and Elementary Biology. In the case of such students at least three years must be spent in attendance upon classes at the University. The fifth year may be spent at any other school or schools of medicine recognised by the University. The students of the Medical Faculty can be members of the University Club, the University Athletic Club, and the University Officers' Training Corps, while they possess a guild—the Guild of Undergraduates—which is designed to be a recognised medium of communication between the teachers and the taught The University Medical Society and the Dental Students' Society also offer opportunities of coöperation for mutual benefit.

Degrees of Bachelor of Medicine and Bachelor of Surgery.—The student must have passed either the Matriculation Examination of the University or one of the following examinations. For the present the University will recognise any one of the following examinations, in lieu of its own Matriculation, in the case of medical students, provided always that such examination shall have included the subjects of English, Latin, Mathematics, and any one of the following: Greek, French, German, or any other modern foreign language, together with Chemistry or Experimental Mechanics, or some other branch of Experimental Physics, and that all the subjects have been passed at one examination: (*a*) the previous examination of the University of Cambridge; (*b*) Responsions of the University of Oxford; (*c*) the Preliminary or Matriculation Examination of a recognised University; (*d*) the (Higher) Certificate of the Oxford and Cambridge Examinations Board; (*e*) the Oxford or Cambridge Senior Local Examination. A Matriculation Examination will commence on Sept. 9th, 1914. First Examination.—Chemistry and Physics and Elementary Biology. Second Examination.—Anatomy and Physiology. Third Examination.—General Pathology and Bacteriology, Materia Medica, and Practical Pharmacy. Fourth Examination (at the end of the fourth year).—Forensic Medicine, Toxicology, Public Health, Therapeutics, and Special Pathology. Two years' hospital work must have been accomplished. Final Examination.—Medicine, Surgery, Midwifery, Diseases of Women, Mental Diseases, and Ophthalmology. Attendance at a general hospital for a year after the passing of the fourth examination will be required, also attendance at a fever hospital and lunatic asylum. Vaccination instruction must be taken out and courses of Ophthalmology, Medical and Surgical Anatomy, and Operative Surgery.

Degrees of Doctor of Medicine and Master of Surgery.—At the end of one year from the date of having passed the final M.B., Ch.B. examination the candidate will be eligible to present himself for the higher degrees of either Doctor of Medicine or Master of Surgery or both.

Candidates for either of these degrees will be required to comply with the following regulations. Every candidate for the degree of M.D. shall present a thesis embodying observations in some subject embraced in one of the departments of the medical curriculum enumerated below, and in addition he will be required to pass a general examination in Principles and Practice of Medicine. It will be in the power of the Board of Examiners to exempt a candidate whose thesis is of exceptional merit from any part of these examinations.

A thesis may be presented in any of the following departments of study: (*a*) Anatomy, including Comparative Anatomy, (*b*) Physiology, (*c*) Human or Comparative Pathology, (*d*) Bacteriology, (*e*) Pharmacology, (*f*) Therapeutics, (*g*) Medicine, (*h*) Mental Diseases, (*i*) Preventive Medicine or Public Health, (*j*) Toxicology, (*k*) Legal Medicine, (*l*) Midwifery.

Candidates for the degree of Ch.M. are required to comply with the following regulations:—At the end of one year from the date of having passed the final M.B., Ch.B. Examination candidates will be eligible to present themselves for the higher degree of Master of Surgery. Candidates for this degree will be required to comply with the following regulations: 1. Every candidate shall present a thesis, embodying observations in some subject embraced in one of the departments of the medical curriculum enumerated below; in addition the candidates will be required to pass a general examination in Principles and Practice of Surgery and to perform operations on the cadaver. 2. It will be in the power of the Board of Examiners to exempt a candidate whose thesis is of exceptional merit from any part of these examinations. 3. The candidate may be examined in that department of the medical curriculum from which the subject of his thesis is chosen and the examiners may require to see the notes of original observations on which the thesis is based, (*a*) Surgery, (*b*) Pathology, (*c*) Bacteriology, (*d*) Gynæcology, (*e*) Ophthalmology.

Degree in Public Health.—For the regulations for this degree and for the diploma in the same subject see p. 618.

Fees.—Matriculation, £2; First Examination, £2; Second Examination, £2; Third Examination, £2; Fourth Examination, £2; Final Examination, £8; M.D. or Ch.M., £10.

Professors—Physics: (Vacant). Chemistry: P. H. Frankland, Ph.D., F.R.S. Elementary Biology: F. W. Gamble, D.Sc., F.R.S. Medicine: R. Saundby, M.D., and Otto J. Kauffmann, M.D., F.R.C.P. Surgery: Wm. F. Haslam, M.B., F.R.C.S., and Charles Leedham-Green, M.B., Ch.M., F.R.C.S. Anatomy: Peter Thompson, M.D. (Dean of the Medical Faculty). Physiology: E. W. Wace Carlier, M.D. Therapeutics: Sir R. M. Simon, M.D. Forensic Medicine: J. T. J. Morrison, F.R.C.S. Hygiene and Public Health: A. Bostock Hill, M.D. Midwifery and Diseases of Women: Thomas Wilson, Ch.M., M.D., F.R.C.S. Pathology: R. F. C. Leith, F.R.C.P. Edin. Lecturers—Lunacy and Mental Disease: P. T. Hughes. Ophthalmology: J. Jameson Evans, M.D., F.R.C.S. Operative Surgery: Geo. Heaton, F.R.C.S.

At the University of Birmingham the following Scholarships are awarded:—(*a*) Myers Travelling Studentship of £150, tenable for one year, awarded by vote of committee to M.B., Ch.B. Birm., B.Sc. candidates, tenable at one of certain German universities; (*b*) Ingleby Scholarship of £10, awarded to the candidate at Final Examination obtaining highest "first-class" marks in the subjects of Midwifery and Diseases of Women; (*c*) Sydenham Scholarship of £42, tenable for three years, award of Council to orphan sons of medical practitioners; (*d*) Sands Cox Scholarship of £42, tenable for three years, awarded to the candidate, not being more than 19 years of age, taking the highest marks at the July Matriculation; (*e*) Dental Scholarship of £37 10*s*., Open Competitive Examination in subjects learned during apprenticeship; (*f*), (*g*), (*h*), and (*i*) Four Queen's Scholarships of £10 10*s*. each. In the Second and Fourth Examinations the Scholarship is awarded respectively to the student taking the first place and obtaining "first-class" marks. In the third Examination the Scholarship is awarded to the student obtaining the highest first-class marks in Pathology and Bacteriology, provided that such student passes at the same examination in the subjects of Materia Medica and Practical Pharmacy. In the Final Examination the Scholarship is awarded to the candidate taking the first place in the examination—that is, obtaining the greatest aggregate number of marks—provided that in each of the subjects of Medicine, Surgery, and Midwifery he gains not less than 60 per cent. of the total available marks; (*j*) George Henry Marshall Scholarship of £10, awarded annually, for the encouragement of Research Work in Ophthalmology; and (*k*) Russell Memorial Prize, a prize of books, value about £2, awarded annually to the student who, not being of more than six years' standing as a student of the School of Medicine of the University, shall pass the best examination in the subject of Nervous Diseases.

Clinical Instruction.—The medical students of the University receive their clinical instruction by attending the amalgamated practice of the General Hospital and the Queen's Hospital, details of which follow.

The clinical instruction of the Birmingham medical students is carried on under the direction of the University Clinical Board. The hospitals present an excellent field for clinical work, possessing more than 500 beds, treating annually over 8000 in-patients and 100,000 out-patients. The students spend part of their curriculum in each hospital, and thus have every opportunity of acquiring a varied, full, and practical knowledge of their professional work. The curriculum is adapted in the first place to meet the needs of the students of the University of Birmingham, but it is also well adapted to the requirements of students preparing for the examinations of all other universities and licensing bodies. At the General Hospital there are open to the students the following appointments: A resident medical officer, elected annually (£100); a resident surgical officer, elected annually and eligible for re-election for three years (£100); a resident pathologist, elected for six months (£50); three surgical casualty officers, elected annually and eligible for re-election (£50); three house physicians and four house surgeons hold office for six months, receiving board, residence, and salaries at the rate of £50 a year; two house surgeons to the gynæcological, ophthalmic, and aural departments are elected every six months, receiving board, residence, and a salary of £50 a year; two assistant house surgeons are elected every three months, receiving board, residence, and salaries at the rate of £40 a year; a resident medical officer at the Jaffray Hospital, who is elected annually but is eligible for re-election, and who receives £150 a year; and a resident medical assistant at this hospital, who is not necessarily qualified, is provided with board and residence, and holds office for three months. At the Queen's Hospital there are open to the student the following appointments: Three house physicians, three house surgeons, and one obstetric and ophthalmic house surgeon, who hold office for six months and have salaries at the rate of £70 a year. Thirty-eight other appointments of varying value are at the City Workhouse and Workhouse Infirmary, at the Birmingham General and Branch Dispensaries, at the Birmingham Lunatic Asylums, at the City Fever Hospitals, at the Children's Hospital, at the Birmingham and Midland Eye Hospital, at the Orthopædic and Spinal Hospital, at the Maternity Hospital, and at the Ear and Throat Hospital.

THE BIRMINGHAM GENERAL HOSPITAL.—The General Hospital contains 349 beds in daily use, upwards of 5908 in-patients passing through the wards yearly. There are special wards for children, for gynæcological, septic and infectious cases, and special beds are reserved for eye, ear, and skin cases. Some 58,815 out-patients are treated there annually. The post-mortem department is in a separate building. It consists of a mortuary with a small viewing room, a post-mortem room proper, and laboratories for bacteriology and morbid histology. In addition there are separate rooms in the main building, adjoining the various medical and surgical wards, for clinical pathology, and these are under the direction of special officers. There are four operating theatres, all designed and fitted on the most modern lines. In connexion with the hospital is the Jaffray Suburban Hospital of 56 beds at Gravelly Hill. The arrangements for clinical teaching at this hospital are very thorough. In addition to the clinical teaching given in the wards and out-patient department by the honorary staff medical and surgical tutorial classes are held for senior and junior students, while clinical instruction is given in all the special departments by the gentlemen in charge of them.

Staff:—Consulting Physicians: Dr. Robert Saundby and Sir Robert M. Simon. Consulting Obstetric Officer: Dr. Edward Malins. Physicians: Dr. T. Stacey Wilson, Dr. T. Sydney Short, Dr. J. W. Russell, and Dr. A. Stanley Barnes. Surgeons: Mr. Gilbert Barling, Mr. William F. Haslam, Mr. George Heaton, and Mr. A. Lucas. Obstetric Physician: Dr. Thomas Wilson. Aural Surgeon and Laryngologist: Dr. F. W. Foxcroft. Physician in Charge of Skin Department: Dr. A. Douglas Heath. Ophthalmic Surgeon: Dr. R. Beatson Hird. Assistant Physicians: Dr. William H. Wynn, Dr. J. E. H. Sawyer, Dr. L. G. Parsons, and Dr. K. D. Wilkinson. Assistant Surgeons: Mr. Leonard P. Gamgee, Mr. Frank Barnes, Mr. Seymour Barling, and Mr. E. Musgrave Woodman. Assistant Obstetric Officer: Mr. H. B. Whitehouse. Visiting Pathologist: Dr. W. J. Logie. Anæsthetists: Dr. Sydney Haynes, Dr. W. J. McCardie, and Mr. R. H. R. Whitaker. Surgical Photographers and Radiographers: Mr. J. Hall-Edwards and Mr. F. Emrys-Jones. Dental Surgeon: Mr. R. H. Astbury.

THE QUEEN'S HOSPITAL.—Similar arrangements for clinical teaching are made here, and the material also is excellent. Ward and tutorial classes are regularly conducted by the staff, there are daily clinics in the out-patient department, while teaching duties are definitely assigned to the house physicians and house surgeons. There are also special departments for gynæcology and ophthalmology.

Staff:—Consulting Physicians: Sir James Sawyer, Dr. C. W. Suckling, and Dr. A. H. Carter. Consulting Surgeons: Mr. Frank Marsh and Mr. Bennett May. Consulting Ophthalmic Surgeon: Mr. Priestley Smith. Physicians: Dr. O. J. Kauffmann, Dr. J. Douglas Stanley, and Dr. J. G. Emanuel. Surgeons: Mr. J. T. J. Morrison, Mr. C. A. Leedham-Green, and Mr. W. Billington. Obstetric Officer: Dr. C. E. Purslow. Ophthalmic Surgeon: Mr. Wilfrid Allport. Physician for Out-patients: Dr. L. G. J. Mackey. Surgeons for Out-patients: Mr. A. W. Nuthall, Mr. B. J. Ward, and Mr. Bertram A. Lloyd. Pathologist: Dr. L. Ball. Radiographer: Dr. Harold Black. Anæsthetist: Mr. L. Kirkby Thomas.

BIRMINGHAM AND MIDLAND EYE HOSPITAL, Church-street, Birmingham.—Honorary Consulting Physician: Dr. R. Saundby. Honorary Consulting General Surgeon: Mr. George Heaton. Honorary Consulting Surgeon: Mr. D. C. Lloyd-Owen. Surgeons: Mr. E. W. Wood-White, Mr. J. Jameson Evans, and Mr. W. H. Fulford Eales. Assistant Surgeons: Mr. T. Harrison Butler, Mr. R. Beatson Hird, Mr. D. Priestley Smith. Dental Surgeon: Mr. John Westwood. Anæsthetist: Dr. S.W. Haynes. Radiographers: Mr. Hall-Edwards and Mr. Emrys-Jones. Pathologist: Dr. E. W. Assinder. This hospital possesses 110 beds, and there is an average daily attendance of out-patients of over 270. This institution is recognised by Universities and the Royal College of Surgeons, England, and Royal College of Physicians, London, as an ophthalmic hospital at which clinical instruction in ophthalmology may be received. Students attending for a period of three months will be granted certificates which will qualify for the University and Conjoint Board examinations.

UNIVERSITY OF LIVERPOOL.

The student must pass either (1) the University Matriculation Examination, or (2) the Final Examination for Graduation in Arts of any university in Great Britain and Ireland, or (3) the Matriculation Examination of the University of London, or (4) the Higher Certificate Examination of Oxford and Cambridge Joint Board, or (5) the Senior Local Examination of Oxford or Cambridge, or (6) some other examination of equal standard accepted by the Joint Matriculation Board. The course of professional study, subsequent to passing the Matriculation Examination and having been registered as a medical student, extends over five years. The degrees in the Faculty of Medicine are Bachelor of Medicine and Bachelor of Surgery (M.B. and Ch.B.), Doctor of Medicine (M.D.), Master of Surgery (Ch.M.), and Master of Hygiene (M.H.).

Degrees of Bachelor of Medicine and Bachelor of Surgery.—Candidates for the degrees of Bachelor of Medicine and of Surgery must have attained the age of

21 years on the day of graduation. At least two of the five years of medical study must have been passed in the University, and one year at least must have been passed in the University subsequently to the date of passing the First Examination. The other three years may be passed at any college or medical school recognised for this purpose by the University. Candidates must pass three examinations entitled respectively: the First Examination, the Second Examination, and the Final Examination. The fee is £5 for each examination. The subjects of the First Examination are: (1) Chemistry, Inorganic, Organic, and Physical; (2) Biology (Zoology and Botany); and (3) Physics. The examination is divided into two parts—namely, (1) Chemistry and Physics, and (2) Biology; and candidates may present themselves in these parts separately. The subjects of the Second Examination are (*a*) Anatomy and Physiology (including Physiological Chemistry and Histology), and (*b*) Materia Medica, Pharmacy, and Pharmacology. Candidates may present themselves in (*a*) or (*b*) separately. The subjects for the Final Examination are: (1) General Pathology and Morbid Anatomy; (2) Therapeutics; (3) Forensic Medicine and Toxicology; (4) Public Health; (5) Obstetrics and Diseases of Women; (6) Surgery, Systematic, Clinical, Operative, and Practical, including Ophthalmology; and (7) Medicine, Systematic and Clinical, including Mental Diseases and Diseases of Children. The Final Examination is divided into three parts, the first consisting of subject (1), the second of subjects (2), (3), and (4), the third of subjects (5), (6), and (7). Candidates may present themselves in these parts separately. Candidates for the third part must have completed the fifth year of medical study.

Degrees of Doctor of Medicine and Master of Surgery.—No candidate will be admitted to the degrees of Doctor of Medicine or Master of Surgery unless he has previously received the Degrees of Bachelor of Medicine and Bachelor of Surgery, and at least one year has elapsed since he passed the examinations for those degrees. Candidates for the degree of Doctor of Medicine are required to present a dissertation embodying the results of personal observations or original research, either in some department of medicine or of some science directly relative to medicine: provided always that original work published in scientific journals or separately shall be admissible in lieu of, or in addition to, a dissertation specially written for the degree. No candidate shall be admitted to the degree unless his application after report from the Faculty of Medicine shall have been accepted by the Senate. Candidates may be required to undergo examination in any subject connected with the dissertation. The subjects of examination for the degree of Master of Surgery are: (1) Surgical Anatomy, (2) Surgery, (3) Operative Surgery, (4) Clinical Surgery, (5) Ophthalmology, and (6) Pathology and Bacteriology.

Diploma in Ophthalmic Surgery.—A Diploma in Ophthalmic Surgery (D.Ch.O.) has been instituted for candidates who possess a qualification or Diploma in Medicine which entitles to registration in the United Kingdom. The examination for the Diploma will be held twice a year, at the end of the summer and autumn terms. Candidates before presenting themselves for examination, and subsequent to having obtained a registrable qualification or diploma, must have attended: (*a*) a three months' course of study in the anatomy, physiology, and pathology of the eye in the University; (*b*) a course of instruction extending over not less than three terms in an ophthalmic clinic recognised by the University; and (*c*) a course of lectures on the diagnosis and treatment of diseases of the eye during one term. The subjects of examination are: (1) The anatomy and histology of the visual organs and centres; (2) the physiology of vision; (3) physiological optics; (4) bacteriology in relation to diseases of the eye; (5) the morbid anatomy of diseases of the eye; (6) the diagnosis and treatment of diseases of the eye; (7) the estimation and correction of errors of refraction. The fee for the examination is £5 5*s*., and for each subsequent examination £3 3*s*. The fees for courses of instruction amount to 25 guineas.

Professors—Inorganic Chemistry: E. C. C. Baly, F.R.S. Physical Chemistry: W. C. McC. Lewis, M.A., D.Sc. Physiology: J. S. Macdonald, B.A. Physics: L. R. Wilberforce, M.A. Natural History: W. A. Herdman, D.Sc., F.R.S. Botany: R. J. H. Gibson, M.A. Anatomy: A. Melville Paterson, M.D. Medicine: T. Robinson Glynn, M.D. Surgery: Rushton Parker, F.R.C.S. Regional Surgery: W. Thelwall Thomas, Ch.M., F.R.C.S. Pathology: Ernest Glynn, M.A., M.D. Midwifery and Gynæcology: H. Briggs, M.D. Therapeutics: J. H. Abram, M.D. Hygiene: E. W. Hope, D.Sc. Forensic Medicine: R. J. M. Buchanan, M.D. Tropical Medicine: J. W. W. Stephens, B.A., M.D. Tropical Sanitation: Major Sir Ronald Ross, C.B., F.R.S. Bio-Chemistry: (vacant). Entomology: R. Newstead, M.Sc., A.L.S., F.R.S. Bacteriology: J. M. Beattie, M.A., M.D. Parasitology: Warrington Yorke, M.D.

At this University the following Scholarships and Fellowships are awarded:—(*a*) and (*b*) Robert Gee Entrance Scholarships, two annually, of £25 each, tenable for two years, Joint Matriculation Board Examination held in July, open to First M.B. Course Students; (*c*) Lyon Jones Scholarship, No. 1, of £21 per annum, tenable for two years, Competitive Examination among Junior Students in First M.B. Subjects, Perpetual Course at the University; (*d*) Lyon Jones Scholarship, No. 2, of £21, Competitive Examination among Senior Students in Anatomy, Physiology, Pharmacology, and Materia Medica; (*e*) Derby Exhibition of £15, Competitive Examination among Fourth- or Fifth-year Students in Clinical Subjects, and Clinical School Exhibition of £15 annually for Fourth- or Fifth-year students; (*f*) University Scholarship of £25 for one year, awarded on results of Second Examination for the degrees; (*g*) Holt Fellowships, Physiology and Pathology, of £100 each, for one year; this and the following six Fellowships are awarded by vote of Faculty to Student after graduation, for Teaching and Original Research; (*h*) Gee Fellowship, Anatomy, of £100, for one year, for Teaching and Research; (*i*) Alexander Fellowship, Pathology, of £100, for one year, for Research in Pathology, as are also the following four Fellowships; (*j*) Johnston Colonial Fellowship, Pathology, Bacteriology, and Bio-Chemistry, of £100, for one year; (*k*) John W. Garrett International Fellowship, Physiology, Pathology, and Bio-Chemistry, of £100, for one year; (*l*) Thelwall Thomas Fellowship, Surgical Pathology, of £100, for one year; (*m*) Ethel Boyce Fellowship in Gynæcological Pathology, of £100, for one year; the last two are awarded by vote of Faculty to graduate, and are for Research. The Torr Gold Medal in Anatomy, the George Holt Medal in Physiology, the Kanthack Medal in Pathology, the Robert Gee Book Prize, of the value of £5, for Children's Diseases. Communications should be addressed to the Dean, Mr. K. W. Monsarrat, The University, Liverpool.

Medical School Buildings.—Spacious and well-equipped class-rooms and laboratories have been erected for the practical study of all the important scientific subjects which form the basis of medicine. Medical research has also been endowed with several new laboratories in which students can pursue research work after graduation. All the laboratories and class-rooms are situated close together, communicating with one another, and are made up of four large blocks of buildings which form one side of the College quadrangle. There are the Johnston Laboratories for Experimental Medicine, Bio-Chemistry, and Tropical Medicine; the Medical School for Anatomy, Surgery, Toxicology, and Ophthalmology; and the Thompson-Yates Laboratories for Physiology and Pathology.

Clinical Instruction.—The Clinical School of the University now consists of four general hospitals—the Royal Infirmary, the David Lewis Northern Hospital, the Royal Southern Hospital, and the Stanley Hospital; and of five special hospitals—the Eye and Ear Infirmary, the Hospital for Women, the Infirmary for Children, St. Paul's Eye Hospital, and St. George's Hospital for Skin Diseases. These hospitals contain in all a total of 1050 beds. The organisation of these hospitals to form one teaching institution provides the medical student and the medical practitioner with a field for clinical education and study which is unrivalled in extent in the United Kingdom. All the hospitals are within easy access from the University; those which are situated at any distance are readily reached by the tramway service of the city. The period of hospital practice extends over the last three years of medical study. During the first two years of this period no student will be permitted to change his attendance from one general hospital to another except at the commencement of an academic term. It is a regulation of the school that not more than five of the six terms of these two years shall be spent at any single general hospital. During the final year of hospital practice a student is permitted to attend the practice of all the general hospitals without restriction. The regulations demand only that his attendance shall be regular and to the satisfaction of the

Hospitals' Board. There are a large number of appointments to house physicianships and surgeonships both at the general and special hospitals which are open to qualified students of the school. These appointments (20) in most cases carry salaries ranging from £60 to £100 per annum. Applications for further information regarding the Medical Curriculum should be addressed to the Dean of the Faculty of Medicine.

School of Veterinary Medicine.—There is a school of Veterinary Medicine in connexion with the University which provides full courses of instruction for the M.R.C.V.S. Degrees of B.V.Sc., M.V.Sc., and D.V.Sc., together with a diploma in Veterinary Hygiene, are also granted by the University.

Public Health Department.—This is located in a separate building known as Ashton Hall, in which full courses of instruction are given to students for the Diplomas and Degrees of the University and of other Examining Boards (see p. 618).

Special Diplomas.—The University has instituted diplomas in Anatomy, Bacteriology, Bio-chemistry, and Parasitology. A special course of study of three terms' duration is required in the subject chosen for the diploma and allied subjects.

Prospectuses and further information may be had on application to the Dean of the Faculty of Medicine, University of Liverpool.

Staff of the Royal Infirmary.—Consulting Physicians: Dr. T. R. Glynn, Dr. R. Caton, and Sir James Barr. Physicians: Dr. T. R. Bradshaw, Dr. J. Hill Abram, and Dr. R. J. M. Buchanan. Assistant Physicians: Dr. John Hay, Dr. W. Barnett Warrington, and Dr. Pantland Hick. Consulting Surgeons: Mr. Rushton Parker and Mr. F. T. Paul. Surgeons: Mr. R. A. Bickersteth, Mr. W. Thelwall Thomas, and Mr. Litler Jones. Assistant Surgeons: Mr. R. E. Kelly, Mr. F. A. G. Jeans, and Mr. H. F. Woolfenden. Gynæcological Surgeon: Mr. T. B. Grimsdale. Assistant Gynæcological Surgeon: Mr. W. B. Blair Bell. Ophthalmic Surgeon: Mr. T. H. Bickerton. Surgeon to the Throat Department: Mr. Thomas Guthrie. Physician to the Skin Department: Dr. L. Roberts. Lock Department: Dr. F. P. Wilson. X Ray and Radium Departments: Dr. C. Thurston Holland. Dental Surgeon: Mr. E. J. M. Phillips. Chemical Pathologist: Dr. Benjamin Moore. Pathologist: Dr. E. E. Glynn. Anæsthetists: Mr. W. Fingland, Mr. F. W. Bailey, Mr. H. Armstrong, and Mr. A. J. O'Leary.

Staff of the David Lewis Northern Hospital.—Physicians: Dr. T. Bushby and Dr. John Owen. Consulting Surgeons: Mr. W. M. Campbell, Mr. C. Puzey, Mr. Damer Harrisson, and Mr. Robert W. Murray. Surgeons: Mr. K. W. Monsarrat and Mr. G. C. E. Simpson. Consulting Ophthalmic Surgeon: Mr. A. N. Walker. Consulting Gynæcological Surgeon: Dr. H. Leith Murray. Aural Surgeon: Dr. Hugh E. Jones. Surgeon to the Orthopædic Department: Mr. W. H. Broad. Assistant Surgeons: Mr. T. P. McMurray and Mr. J. H. Rawlinson. Surgeon to Electrical Department: Dr. W. C. Oram. Consulting Dental Surgeon: Mr. E. L. Councell. Pathologists: Dr. L. S. Ashcroft and Dr. H. S. Pemberton. Anæsthetists: Mr. R. Stevenson, Dr. H. J. Knox, and Dr. W. R. Pearce. Medical Tutor: Dr. J. Murray Bligh. Surgical Tutor: Mr. J. H. Rawlinson.

Staff of the Royal Southern Hospital.—Consulting Physician: Dr. W. Williams. Consulting Surgeons: Mr. Robert Hamilton and Mr. W. Alexander. Consulting Bacteriologist: Professor J. M. Beattie. Honorary Physicians: Dr. C. J. Macalister and Dr. J. L. Roberts. Honorary Surgeons: Mr. R. Jones, Mr. G. P. Newbolt, and Mr. Douglas-Crawford. Honorary Assistant Surgeons: Mr. T. R. W. Armour and Mr. O. H. Williams. Honorary Dermatologist: Dr. F. H. Barendt. Honorary Ophthalmic Surgeon: Mr. R. J. Hamilton. Honorary Laryngologist: Dr. W. Permewan. Radiologist: Dr. D. Morgan. Honorary Dental Surgeon: Mr. L. Osborn. Anæsthetists: Dr. F. M. Gardner-Medwin, Dr. W. J. Bennett Jones, Dr. G. F. R. Smith, and Dr. T. E. Jones.

Staff of the Stanley Hospital.—Consulting Physicians: Dr. R. I. Richardson and Dr. W. Whitford. Consulting Ophthalmologist: Dr. K. A. Grossmann. Physicians: Dr. A. G. Gullan and Dr. J. Murray Bligh. Surgeons: Mr. F. C. Larkin and Mr. A. J. Evans. Gynæcology: Miss F. Ivens, M.B., M.S. Ophthalmic Physician: Dr. J. Grimshaw. Laryngologist: Dr. J. E. McDougall. Dentist: Mr. J. Woodford Williams.

THE VICTORIA UNIVERSITY OF MANCHESTER.

Four degrees in Medicine and Surgery are conferred by the University—viz., Bachelor of Medicine and Bachelor of Surgery (M.B. and Ch.B.), Doctor of Medicine (M.D.), and Master of Surgery (Ch.M.).

All candidates for degrees in Medicine and Surgery are required to pass an examination called the Matriculation Examination (Faculty of Medicine), or to have passed such other examination as may be recognised by the University for this purpose.[1]

Degrees of Bachelor of Medicine and Bachelor of Surgery.—Before admission to the degree of M.B. or Ch.B. candidates are required to present certificates that they will have attained the age of 21 years on the day of graduation and that they have pursued the courses of study required by the University Regulations during a period of not less than five years subsequently to the date of their registration by the General Medical Council, two of such years having been passed in the University and one year at least having been passed in the University subsequently to the date of passing the first M.B. Examination. All candidates for the degrees of Bachelor of Medicine and Bachelor of Surgery are required to satisfy the examiners in the several subjects of the following examinations: the First Examination, the Second Examination, the Third Examination, and the Final Examination.

The First Examination.—The subjects of examination are as follows:—(1) Inorganic Chemistry and Physics; (2) Biology; and (3) Elementary Organic Chemistry and Bio-Chemistry. Candidates must have attended during at least one year courses both of lectures and of laboratory work in each of the above-named subjects. The Examination is divided into three parts: Part 1, Inorganic Chemistry and Physics; Part 2, Biology; Part 3, Elementary Organic Chemistry and Bio-Chemistry; and the candidates may pass in these parts separately under certain conditions.

The Second Examination.—The subjects of examination are as follows:—(1) Anatomy; (2) Physiology, including Physiological Chemistry and Histology. Candidates may pass in (1) and (2) separately under certain conditions.

The Third Examination.—(1) Pathology; (2) Pharmacology and Therapeutics; (3) Hygiene. These subjects may be taken separately under certain conditions.

The Final Examination.—The subjects of examination are as follows:—(1) Medicine, Systematic and Clinical (including Mental Diseases and Diseases of Children); (2) Surgery, Systematic, Clinical, and Practical; (3) Obstetrics and Gynæcology (including Clinical and Practical); (4) Forensic Medicine (including an Oral Examination). These subjects may be taken separately under certain conditions.

Candidates for the Final Examination must have completed the fifth year of medical study.

Degree of Doctor of Medicine.—Candidates are not eligible for the degree of Doctor of Medicine unless they have previously received the degrees of Bachelor of Medicine and Bachelor of Surgery and at least one year has elapsed since they passed the examination for those degrees. Candidates may elect either (1) to present an original dissertation; or (2) to undergo an examination. The dissertation must embody the results of personal observation or original research, either in some department of medicine or of some science directly relative to medicine. The examination, which will be partly written, partly practical, is in the Principles and Practice of Medicine, in Pathology, and in some other subject to be selected by the candidate.

Degree of Master of Surgery.—Candidates are not eligible for the degree of Master of Surgery unless they have previously received the degrees of Bachelor of Medicine and Bachelor of Surgery and at least one year has elapsed since they passed the examination for those degrees. The subjects of examination are as follows: (1) Surgical Anatomy; (2) Surgery; (3) Operative Surgery; (4) Clinical Surgery; (5) Ophthalmology; and (6) Pathology and Bacteriology.

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[1] 1. The Board will grant exemption from the Matriculation Examination to graduates of any university of the United Kingdom, provided Latin has formed part of one of the degree examinations. 2. For particulars of the conditions under which holders of Certificates from the Universities of Oxford, Cambridge, and London are entitled to exemption, the Calendar of the Joint Matriculation Board should be consulted. The fee for registering external Certificates when exemption is granted is £2.

Professors—Physics: E. Rutherford, D.Sc., LL.D., F.R.S. Chemistry: H. B. Dixon, M.A., F.R.S. Organic Chemistry: Arthur Lapworth, D.Sc., F.R.S. Zoology: S. J. Hickson, D.Sc., F.R.S. Botany: F. E. Weiss, D.Sc. Cryptogamic Botany: W. H. Lang, M.B., B.Sc., F.R.S. Physiology: W. Stirling, M.D., LL.D., D.Sc. Clinical Medicine: E. S. Reynolds, M.D., B.Sc., F.R.C.P. Anatomy: Grafton Elliot Smith, M.A., M.D., F.R.S. Materia Medica: R. B. Wild, M.D. Public Health and Bacteriology: A. S. Delépine, M.B., C.M., M.Sc. Pathology: A. E. Boycott, B.Sc., M.A., D.M., B.Ch. Systematic Medicine: George R. Murray, M.A., M.D. Systematic Surgery: J. W. Smith, M.B., C.M., F.R.C.S. Clinical Surgery: William Thorburn, B.Sc., M.D., B.S., F.R.C.S. Obstetrics and Gynæcology: Archibald Donald, M.A., M.D., M.R.C.P. Forensic Medicine: William Sellers, M.D., M.R.C.S., D.P.H.

Communications should be addressed to the Registrar, The University, Manchester.

Scholarships, Fellowships, and Prizes.—At this University there are 22 Foundation Scholarships, 12 Exhibitions, five being for subjects connected with medical study, a Surgical Prize, a Fellowship, Research Fellowships in Public Health, and Honorary Research Fellowships. 13 Scholarships are Entrance Scholarships, one is Medical, and there are one each for Surgery, Biology, Physiology, and Diseases of Children, and one General Medical and Surgical. Three of the Exhibitions are for Physiology, one for Anatomy, and one for French and German. The Surgical Prize, named "The Dumville," is awarded for the subjects of Systematic, Practical, and Operative Surgery, Surgical Anatomy, and Surgical Pathology, £15. The Leech Fellowship (£100) is for the encouragement of study and research, and is open to persons who have graduated M.B., Ch.B. in the University not more than 18 months previously. The Honorary Research Fellowships, tenable for two years, conferring the right of free use of the laboratories, are awarded generally in October on application, with evidence of capacity for independent investigation.

The following entrance scholarships are offered for award to persons of either sex proposing to enter a medical course of study at the University:—Seaton—One of £40, tenable for two years. Subjects: Greek and Latin Translation at sight, and Prose Composition. Credit given for knowledge of Mathematics (Geometry and Algebra); Elements of English Language, Literature, and History; French and German. Rogers.—One of £40, tenable for two years. Subjects as in Seaton. Dalton.—Two of £40, tenable for two years. Subjects: Geometry (Euclid I.—IV., and VI., or the subjects thereof), Algebra (as far as the Binomial Theorem, inclusive) Plane Trigonometry (to Solution of Triangles); Elementary Analytical Geometry; Conic Sections. Credit given for knowledge of Classics, Elements of English Language, Literature, and History; French and German. Cartwright.—£35 per annum, tenable for three years. Subjects as in Dalton. Dreschfeld Memorial—£30, tenable for one year. Subjects: those of July Matriculation Examination. Hulme.—£35, tenable for three years. Subjects: English Language (Grammatical Structure and Outlines of its History); English Literature (an essay on some subject of English literature); and Modern History (Outlines of English History and Geography); with at least two of the following: Latin (Translation at sight, Grammar, and Easy Composition); Greek (ditto); French (ditto); German (ditto). Credit given for knowledge of Mathematics (Geometry and Algebra). Dora Muir.—£25 per annum, tenable for three years (open to women only). Candidates may select such of the subjects as they desire from amongst those set for the other Entrance Scholarships. James Gaskill.—£35, tenable for two years. Subjects: Mathematics, Geometry (the substance of Euclid I.—IV. and VI.), Algebra (as far as the Binomial Theorem, inclusive), Plane Trigonometry (to Solution of Triangles), Elementary Mechanics and Physics, Chemistry. Credit given for knowledge of Classics, Elements of English Language, Literature, and History, and French and German. Manchester Grammar School.—£25 per annum, tenable for three years. The examinations for all these scholarships are held in the month of May. Kay-Shuttleworth (Sir James Phillips).—£30 per annum, tenable for three years. Subjects: Mathematics, Elementary Mechanics and Physics, Chemistry. Entrance Scholarships in Medicine.—One or more Scholarships in each year will be offered for proficiency in Arts or Science. The Scholarships are of the value of £100 each, which will be set off against fees as follows: £60 against the University class fees and £40 against the Infirmary fees.

The Platt Biological Scholarship of £50 for one year is awarded to the candidate who shows the most promise of ability for prosecuting original research in Zoology and Botany, and the holder is to devote his time to research in Zoology or Botany. The Robert Platt Physiological Scholarship of £50 for two years, with the subjects of Physiology and Comparative Anatomy, is open to candidates whether or not previously students of the University. There are two Dauntesey Medical Scholarships of £35 each for one year, with the subjects of Zoology, Botany, and Chemistry. These Scholarships are open to all students preparing for a medical course who shall not have attended lectures or laboratory courses on Human Anatomy or Physiology, or a purely medical or surgical course in the University or in any other medical school in the United Kingdom. Candidates must not be more than 25 years of age on Oct. 1st of the year of competition. Scholars must immediately on election enter for a full course of medical studies. The subjects of the Turner Scholarship of £20, for students who have completed a full course of medical study in the University, are: Medicine, Pathology (written and practical), Obstetrics, Practical Surgery, Ophthalmology, Forensic Medicine, and Public Health. The John Henry Agnew Scholarship of £30, awarded on the results of an examination, partly written and partly clinical, on Diseases of Children, Medical and Surgical, is open for competition annually to all students in the medical department who have pursued a regular course of medical study in the University extending over a period of not less than four years or more than six years and have attended the course of lectures on Diseases of Children. The Ashby Memorial Scholarship, value £100, is open to duly qualified medical men and women who intend to pursue research in diseases of children.

The Professor Tom Jones Memorial Surgical Scholarship of £100 for one year is awarded on the result of evidence submitted by the candidate who must have either graduated in the University or have obtained the Diploma of the Conjoint Colleges. The Graduate Scholarship in Medicine of the value of £25 to £50 for one year is awarded on the results of the Final Examination for M.B., Ch.B. The Theodores Exhibition of £15 for one year has the subjects of French and German, and the successful candidate is required to enter for a regular University course. There are two Robert Platt Exhibitions of £15 each for first- and second-year students in physiology, and the Sydney Renshaw Exhibition of £15 is for second-year students in physiology. The Professor Tom Jones Exhibition in Anatomy, value £25, is for first-year students in anatomy. The Dumville Surgical Prize of £15 is awarded after examination in Systematic, Practical, and Operative Surgery, Surgical Anatomy, and Surgical Pathology. A gold medal is awarded for distinction on obtaining the degree of M.D.

The Medical School.—This medical school is located in a large building, which forms a part of the University. It is provided with large dissecting-rooms, physiological laboratories, private laboratories, and work-rooms, besides lecture-rooms, a museum, and a library. In order to give the fullest possible opportunities for teaching and investigation in the departments of Anatomy, Physiology, Pathology, and Materia Medica, a large extension of the school buildings was made in 1895. The greater part of the new buildings is devoted to the departments of physiology, pathology, toxicology, anatomy, and public health. The physiological department occupies more than half of the new buildings, and includes a large lecture theatre, accommodating 350 students, with preparation and diagram rooms adjacent to it, and a research laboratory fitted with the necessary apparatus for the use of advanced students, research scholars, or practitioners of medicine undertaking the investigation of some special subject. In the new pathological laboratories ample provision is made for the teaching of pathology and bacteriology and for the prosecution of original research. In the toxicological department there is a large laboratory, capable of accommodating 50 students, lighted from both sides and also from the roof, completely equipped with all that is necessary for the practical teaching of toxicology; also a small laboratory for private research, containing the apparatus and fittings necessary for investigations in toxicological chemistry. In the public health department suitable laboratory accommodation is provided for the study of sanitary chemistry, physics, and practical bacteriology in the departments of chemistry and physics and in that of pathology. A large room is provided in the new buildings for a museum of apparatus, models, plans, and other sanitary appliances for the practical instruction of the students, together with a special library of works on State medicine, hygiene, vital statistics, and sanitary engineering. In addition, a large lecture theatre for general purposes, accommodating 250 students, has been provided, and the existing accommodation for students is supplemented by the provision of a larger common room.

Clinical Studies.—The clinical and practical departments of medical study are taught partly in the Medical School and partly in the Royal Infirmary, as well as in a fever hospital, a lunatic asylum, and a convalescent home. Medical and Surgical Clinical Classes are conducted in the Infirmary, which in the new buildings together with the associated hospitals at Cheadle will contain 1158 beds, and separate instruction is afforded in the elements of Medical and Surgical Physical Diagnosis, in Obstetric Medicine, Ophthalmic Surgery, and Pathological Anatomy by the different members of the staff of the Medical School and Infirmary.

Public Health.—The regulations with regard to the Degrees in Sanitary Science will be found under the special section on p. 618.

Clinical Instruction.—THE MANCHESTER ROYAL INFIRMARY.—The new Royal Infirmary has been built on the pavilion system, near the University, between the recently enlarged Eye Hospital and the new St. Mary's Hospital for Women and Children, and has accommodation for 592 beds. Of these, 52 are allotted to the Special and Emergency Departments; the 540 remaining beds are allocated as follows: 240 for medical practice and 300 for surgical practice (180 for men and 120 for women and children). The medical side consists of five units, each unit having a testing room for the scientific investigation of morbid products and a class-room. The surgical beds are also arranged in five units, each unit having its own operation theatre, with anæsthetising, recovery, sterilising, testing, and apparatus rooms, and its own class-room attached. Of these units all are occupied excepting one on the medical side. The fine educational block provides very handsomely for the wants and comforts of the students, there being separate suites of rooms for the men and the women, and also a large common reading room, a lecture theatre, and a museum. The present annual average number of in-patients is 9000, of out- and home-patients 41,000, and the list of casualties in the accident room has averaged 24,000 per annum. About 7000 operations are performed annually in the operation theatres. Associated with the infirmary are: (1) the Convalescent Hospital at Cheadle, containing 136 beds; (2) the Royal Lunatic Hospital at Cheadle, accommodating with its branches 430 patients; and (3) the Central Branch in the city for casualty and out-patient work. The Associated Hospitals thus contain 1158 beds and are under the same management. Women students are admitted to the practice of the Infirmary on the same terms as men.

Fees.—Medical Practice: Three months, 5 guineas; six months, 8 guineas; 12 months, 12 guineas; full period required by the Examining Boards, 42 guineas.

In addition to the list of scholarships given under the general heading, "The Victoria University of Manchester," two Entrance Scholarships in Medicine of the value of £100 each are offered annually by the Council of the Manchester University and the Medical Board of the Manchester Royal Infirmary for proficiency in Arts and Science subjects respectively. The Bradley Memorial Scholarship in Clinical Surgery, value £20, is offered annually in the Summer Session. Gentlemen are eligible who are in their fifth or sixth year of study, have completed their dresserships, and have spent two years in clinical work at the Manchester Royal Infirmary. One Medical and one Surgical Clinical Prize of the value of 6 guineas are offered annually. (The other scholarships and prizes are in the College Syllabus.) Annual appointments may be held by those who have attended the practice of the Infirmary; a Surgical Registrar (£75); a Patholological Registrar (£100); a Medical Registrar (£75); a Surgical Tutor (£30); a Director and Assistant Director of the Clinical Laboratory (£250 and £75); Three Assistant Medical Officers (£35); Three Assistant Surgical Officers (£35 each); Six Anæsthetists (£50); a Medical Officer for home patients (£150); and a Medical Officer for Radiography and Electricity Department (£100). The following resident appointments are also made annually: Resident Medical Officer (£150); Resident Surgical Officer (£150); Accident Room House Surgeon (£100); Resident Medical Officer at the Convalescent Hospital at Cheadle (£150); two Medical Officers at the Central Branch, £100 each. An Assistant Medical Officer at the Convalescent Hospital is appointed every six months at a salary of £80 per annum. Five Junior House Surgeons are appointed every three months. Five Senior House Surgeons are appointed every six months (salary £20 for period). Five House Physicians are appointed every six months (£20 for period). Also every six months a House Surgeon is appointed to the Gynæcological, Ear and Throat Departments. The House Surgeons and House Physicians and Resident Assistant at Cheadle must possess registrable qualifications.

Staff.—Consulting Physicians: Dr. Graham Steell, Dr. Judson S. Bury, and Dr. A. T. Wilkinson. Physicians: Dr. E. S. Reynolds, Dr. G. R. Murray, Dr. R. T. Williamson, Dr. E. M. Brockbank, and Dr. E. N. Cunliffe. Assistant Physicians: Dr. F. Craven Moore, Dr. A. Ramsbottom, Dr. E. B. Leech, Dr. F. E. Tylecote, and Dr. C. E. Melland. Pathologist: Dr. A. E. Boycott. Consulting Surgeons: Mr. F. A. Southam and Mr. G. A. Wright. Surgeons: Mr. W. Thorburn, Mr. J. W. Smith, Mr. A. H. Burgess, Mr. J. H. Ray, and Mr. E. D. Telford. Assistant Surgeons: Mr. C. Roberts, Mr. P. R. Wrigley, Mr. H. H. Rayner, Mr. W. H. Hey, and Mr. J. P. Buckley. Anæsthetist: Mr. Alexander Wilson. Consulting Obstetric Physician: Dr. Lloyd Roberts. Gynæcological Surgeon: Dr. A. Donald. Assistant Gynæcological Surgeon: Dr. W. E. Fothergill. Ophthalmic Surgeon: Dr. A. Hill Griffith. Aural Surgeon: Sir William Milligan. Assistant Aural Surgeon: Mr. F. H. Westmacott. Dental Surgeon: Mr. E. G. Long. Dean: Dr. E. M. Brockbank. Resident Medical Officer: Dr. W. J. Reid. Resident Surgical Officer: Mr. E. E. Hughes. Pathological Registrar: Dr. W. B. Anderton. Medical Registrar: Dr. T. H. Oliver. Surgical Registrar: Mr. J. C. Jefferson. Directer of the Clinical Laboratory: Dr. G. E. Loveday. Assistant Director of the Clinical Laboratory: Dr. O. M. de Jong. Anæsthetists: Dr. S. R. Wilson, Mr. Edward Moir, Mr. E. Falkner Hill, Mr. T. Coogan, Mr. G. Benton, and Miss May. Assistant Officers: Dr. Core, Dr. C. E. Lea, and Dr. J. F. Ward. Assistant Surgical Officers: Mr. W. R. Douglas, Mr. G. B. Warburton, and Mr. J. Morley. Surgical Tutor: Mr. W. R. Douglas. Medical Officer for Home Patients: Dr. George Ashton. Medical Officer for Radiography and Electricity Department: Dr. A. E. Barclay. Resident Medical Officer of the Convalescent Hospital, Cheadle: Mr. J. Gow. Resident Superintendent of the Royal Lunatic Hospital at Cheadle: Mr. W. Scowcroft. General Superintendent and Secretary: Mr. Walter G. Carnt.

MANCHESTER CHILDREN'S HOSPITAL, Pendlebury, Gartside-street, Manchester, and St. Anne's-on-the-Sea.—The hospital contains 188 beds and 24 in the Convalescent Home, St. Anne's-on-the-Sea. The medical staff visit the hospital daily at 10 A.M. Clinical instruction is given by the medical staff at the Hospital and Dispensary. Out-patients are seen daily at 9 A.M. at the new Out-patient Department, Gartside-street, Manchester. Consulting Physician: Dr. Hutton. Physicians: Dr. Heywood, Dr. Lapage, and Dr. Ashby. Surgeons: Mr. C. Roberts, Mr. H. H. Rayner, and Mr. Wilson H. Hey. Honorary Consulting Surgeons: Mr. G. A. Wright and Mr. J. Howson Ray. Honorary Consulting Aural Surgeon: Mr. F. H. Westmacott. Surgeon for Throat, Nose, and Ear Diseases: Mr. Arnold Jones. Honorary Ophthalmic Surgeon: Mr. J. Gray Clegg. Pathologist: Mr. A. H. Miller. Anæsthetists: Mr. E. Moir, Mr. S. R. Wilson, and Dr. Barrow. Honorary Dental Surgeon: Mr. E. A. T. Green. Resident Medical Officers: Mr. T. Hayhurst and Mr. George Jackson. Medical Officers at the Dispensary: Dr. J. G. Bennett, Dr. May, and Mr. J. A. Dowling. Medical Officer, X Ray Department: Dr. W. J. S. Bythell.

During 1913 there were 2903 in-patients, and 27,900 new out-patients were under treatment at the Dispensary, and there were 110,945 attendances made by out-patients. Secretary: Mr. H. J. Eason.

THE MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN, Park-place, Cheetham Hill-road, Manchester.—The hospital contains 70 beds. Out-patients are seen daily from 8.30 to 10 A.M. Honorary Consulting Physicians: Dr. W. N. Maccall, Dr. T. C. Railton, and Dr. J. J. Cox. Honorary Consulting Surgeons: Mr. Frederick A. Southam and Dr. A. W. W. Lea. Honorary Physician for Women: Dr. T. Arthur Helme. Honorary Surgeon for Women: Dr. G. W. Fitz-Gerald. Honorary Physicians for Children: Dr. A. A. Mumford, Dr. A. C. Sturrock, and Dr. C. Chisholm. Honorary Assistant Surgeon for Women: Dr. D. Dougal. Honorary Surgeon for Children: Mr. R. Ollerenshaw. Honorary Ophthalmic Surgeon: Dr. H. H. McNabb. Honorary Anæsthetists: Mr. G. A. Barrow, Dr. C. H. Lee, and Dr. D. H. Paul. Honorary Clinical Pathologist: Dr. J. Staveley-Dick. Pathologist: Dr. A. H. Miller. Assistant Medical Officers: Mr. R. W. Walsh and Dr. R. C. Holt. Honorary Dentist: Mr. W. A. Hooton. House Surgeon: Dr. T. J. S. Moffett.

UNIVERSITY OF LEEDS.

Candidates presenting themselves for Matriculation in the Faculty of Medicine must pass an examination in English (Language or Literature) and English History, Mathematics, and Latin, and in two of eight optional subjects. Exemption from the matriculation examination is granted to graduates of any university of the United Kingdom provided Latin has formed part of one of the degree examinations.

Four degree in Medicine and Surgery are conferred—viz.: Bachelor of Medicine and Bachelor of Surgery (M.B. and Ch.B.), Doctor of Medicine (M.D.), Master of Surgery (Ch.M.), also Degrees and Diplomas in Dental Surgery and Diplomas in Public Health and Psychological Medicine.

Degrees of Bachelor of Medicine and Bachelor of Surgery.—Candidates for the degrees of Bachelor of Medicine and of Surgery are required to present certificates showing that they will have attained the age of 21 years on the day of graduation, and that have attended courses of instruction approved by the University extending over not less than five years, two of such years at least having been passed in the University subsequently to the date of passing the First Examination. Candidates must also satisfy the examiners in the several subjects of the following examinations entitled respectively: the Matriculation Examination, or such other examination as may have been recognised by the Joint Matriculation Board in its stead; the First Examination; the Second Examination; and the Final Examination.

The First Examination.—The First Examination consists of: Part I., Physics and Chemistry; Part II., Biology. Candidates will be allowed to pass the two parts separately.

The Second Examination.—The Second Examination consists of: Part I., Anatomy and Physiology; Part II., Materia Medica and Pharmacy. Candidates will be allowed to pass the two parts separately.

The Final Examination.—The Final Examination consists of: Part I., Pathology and Bacteriology. Part II., Forensic Medicine and Public Health. Part III., Medicine: Systematic and Clinical, including Mental Diseases and Diseases of Children; Surgery: Systematic, Clinical, and Practical; Obstetrics, and Gynæcology: Systematic, Clinical, and Practical; Pharmacology and Therapeutics. Candidates will be allowed to pass Parts II. and III. separately or together, and they may present themselves for examination in Part I. at the end of the tenth term.

Degree of Doctor of Medicine.—Candidates are not eligible for the degree of Doctor of Medicine unless they have previously received the degrees of Bachelor of Medicine and Bachelor of Surgery and at least one year has elapsed since they passed the examination for those degrees. Candidates for the degree of Doctor of Medicine are required to present a dissertation and, if the dissertation be accepted, to pass an examination. The dissertation, of which the subject must previously have received the approval of the Board of the Faculty of Medicine, must embody the results of personal observations or original research, either in some department of medicine or of some science directly related to medicine; provided always that original work published in scientific journals or in the Proceedings of learned societies, or separately, shall be admissible in lieu of, or in addition to, a dissertation specially written for the degree. Candidates will be required to write a short extempore essay on some topic connected with medicine and to answer questions on the history of medicine. They will also be examined orally on the dissertation or other work submitted. Any candidate may be exempted from a part or the whole of the examination if the Board of the Faculty so decide. No candidate will be admitted to the degree unless his application, after report from the Board of the Faculty of Medicine, shall have been accepted by the Senate.

Degree of Master of Surgery.—Candidates are not eligible for the degree of Master of Surgery unless they have previously received the degrees of Bachelor of Medicine and Bachelor of Surgery and at least one year has elapsed since they passed the examination for those degrees. Every candidate is also required to furnish certificates of attendance in accordance with the regulations of the University. The subjects of examination are as follows: Surgical Anatomy, Surgery, Operative Surgery, Clinical Surgery, Ophthalmology, Pathology, and Bacteriology.

Professors—Physics: W. Bragg, M.A., F.R.S. Chemistry: A. Smithells, B.Sc., F.R.S. Organic Chemistry: J. B. Cohen, B.Sc., Ph.D., F.R.S. Zoology: W. Garstang, M.A., D.Sc. Botany: J. H. Priestley. Anatomy: J. K. Jamieson, M.B., C.M. Physiology and Histology: De Burgh Birch, M.D., C.M., F.R.S.E. Pathology: A. S. Grünbaum, M.A., M.D., Sc.D., F.R.C.P., D.P.H. Clinical Medicine: A. G. Barrs, M.D., F.R.C.P. Medicine: T. W. Griffith, M.D., F.R.C.P. Surgery: R. L. Knaggs, M.A., M.D., M.C., F.R.C.S. Clinical Surgery: Sir B. G. A. Moynihan, M.S., F.R.C.S. Obstetrics: J. B. Hellier, M.D. Public Health: J. S. Cameron, M.D., B.Sc., C.M. Therapeutics: H. J. Campbell, M.D., F.R.C.P. Forensic Medicine: F. W. Eurich, M.D., C.M. Mental Diseases: J. S. Bolton, M.D., D.Sc., F.R.C.P.

Diploma in Psychological Medicine.—The University grants a Diploma in Psychological Medicine. The examination, which is held twice in each year—namely, in June and December—is in two parts, and is written, oral and practical. Candidates, before entering for the first part of the examination, must produce evidence of (A) (1) being graduates in Medicine of at least one year's standing; (2) having attended approved courses of instruction on the subjects of examination during six months at least after graduation; (3) having acted as Clinical Clerk or Assistant Medical Officer in an Asylum, recognised for this purpose, for a period of at least six months; (4) having attended a course of systematic instruction on the normal and morbid anatomy of the brain for a period of six months in the recognised laboratories of the University.

(2, 3, and 4 may be taken concurrently, and as evidence of (4) must be produced a laboratory notebook record of practical work which has been regularly inspected and signed by a recognised teacher) or of (B) (1) having acted as Assistant Medical Officer in an Asylum of not less than 500 beds for a period of at least two years; (2) having attended a course of systematic instruction on the normal and morbid anatomy and histology of the brain for a period of six months in the recognised laboratories of the University (as evidence of this must be produced a laboratory notebook record of practical work which has been regularly inspected and signed by a recognised teacher); (3) in addition to the laboratory work under (2), or in lieu of three months thereof, candidates may submit a dissertation which must embody the results of personal observations or original research in relation to psychological medicine, provided always that original work, published in scientific journals, or in the Proceedings of learned societies, or separately, shall be admissible in lieu of, or in addition to, a dissertation specially written for the diploma.

Subjects of Examination.—Part I.: (i.) The Development, Anatomy, Histology, and Physiology of the Brain (Human and Comparative). (ii.) The Morbid Anatomy and Morbid Histology of the Brain from both Theoretical and Practical Aspects. Part II.: (iii.) Psychology, with especial reference to the Symptomatology of Mental Disease. (iv.) Clinical Psychiatry, Asylum Administration, and the Medico-Legal Aspects of Insanity

Candidates, in order to pass, must satisfy the examiners in the clinical part of the examination. They may present themselves for Parts I. and II. separately or at the same time, provided that no candidate be allowed to pass in Part II. unless he has already passed in Part I. No candidate's name will be published unless he has satisfied the Examiners in both parts of the examination.

Fees.—The fee for examination is £5 5*s.*, and must be paid at least 14 days before the commencement of the examination. For any subsequent examination the fee in each part will be £1 11*s.* 6*d.*

At the University of Leeds (School of Medicine) there are two Scholarships and six Prizes. The Entrance Scholarship, admitting to a complete course of lectures and practical classes at the Leeds School, is awarded on the results of the Joint Matriculation Board Examination held in July. The Infirmary Scholarship, admitting to a complete course of hospital practice and clinical lectures at Leeds Infirmary, is awarded on the results of the first M.B. Examination of the University of Leeds. The Hardwick Prize of £10 is awarded after competitive examination in Clinical Medicine among Clinical Clerk Students of two years' standing. The McGill Prize of £10 is awarded after competitive examination among advanced surgical students in Clinical Surgery. The Thorp Scholarship of about £25 is awarded annually to a student or graduate who undertakes research in some subject in Public Health or Forensic Medicine.

Clinical Instruction.—THE LEEDS GENERAL INFIRMARY, in connexion with this medical faculty, has accommodation for 520 in-patients, including 88 beds at branch hospitals in the country. During the last year 9015 in-patients and 43,227 out-patients were treated. Clinical teaching takes place daily in the wards, and Clinical lectures are given in Medicine and Surgery by the Physicians and Surgeons. There are Medical, Surgical, Ophthalmic, Aural, Electro-therapeutic, and Radiographic Departments, in each of which special instruction is imparted to students. A Gynæcological and Extern Obstetric Department, in which there were 410 confinements, together with Laryngeal and Skin Clinics, are in operation. Several valuable prizes are given at the end of each session. The following appointments at the Infirmary are annually open to students after qualification: Non-resident: clinical pathologist, £350; assistant clinical pathologist, £150; medical registrar, £25; medical tutor, £125; surgical registrar, £25; surgical tutor, £125; senior anæsthetist, £50; 7 anæsthetists, £25. Resident: medical officer, £150; surgical officer, £150; casualty officer, £125; ophthalmic, £100; aural officer, £100. These appointments are made annually and holders are eligible for re-election. Resident medical officer to the Ida Hospital, for six months; honorarium £30. Obstetric officer, £50; ophthalmic house surgeon, £50; 3 house physicians, for six months; 4 house surgeons, for 12 months. The following clinical appointments are held by students: physicians' clerk, for six months; surgeons' dresser, for six months; ophthalmic and aural surgeons' dresser, for three months; gynæcological and obstetric clerk, for three months; maternity clerk, for one month; assistant physicians' clerk, for three months; dermatological clerk, for three months; assistant surgeons' dresser, for three months; dresser in the casualty-room, for three months; post-mortem room clerk, for three months; clinical clerk for preliminary instruction, for three months; laboratory assistant, for three months. There are appointments open to students in other medical institutions in the town and also in the West Riding (Lunatic) Asylum.

The Public Dispensary, the Hospital for Women and Children, the Fever Hospital, the Maternity Home, and the West Riding Lunatic Asylum are other medical institutions which are made use of by the Leeds students. The buildings of the Medical School are placed close to the Infirmary and contain complete accommodation for the training of medical students upon the most approved modern methods. A very fine dissecting-room, extensive laboratories for Physiology and Pathology, with the most recent improvements in fittings and apparatus, ample lecture-room accommodation, a large Library, and separate Museums for Pathology and Anatomy are some of the most striking features of the buildings. Provision for the convenience of students, in the shape of a common room, a refectory, &c., are made. The classes in Systematic and Practical Chemistry, Physics, Botany, and Zoology are held in the Science and Arts Department of the University, in College-road.

Staff of Leeds General Infirmary.—Consulting Physicians: Sir Thomas Clifford Allbutt, K.C.B., Dr. John E. Eddison, Dr. Charles M. Chadwick, and Dr. Alfred George Barrs. Consulting Surgeons: Mr. Thomas Pridgin Teale, Mr. A. W. Mayo Robson, Mr. Edward Ward, and Mr. Harry Littlewood. Physicians: Dr. Thomas Churton, Dr. T. Wardrop Griffith, and Dr. W. H. Maxwell Telling. Surgeons: Mr. R. Lawford Knaggs, Sir Berkeley Moynihan, Mr. Walter Thompson, and Mr. J. Faulkner Dobson. Ophthalmic Surgeons: Mr. H. Secker Walker and Mr. A. L. Whitehead. Ear, Nose, and Throat Surgeons: Mr. G. Constable Hayes and Mr. E. F. W. Bain. Obstetric Physician: Dr. J. B. Hellier. Assistant Physicians: Dr. Geo. W. Watson, Dr. R. A. Veale, and Dr. C. W. Vining. Assistant Surgeons: Mr. H. Collinson, Mr. L. R. Braithwaite, Mr. A. Coupland, and Mr. S. W. Daw. Pathologist: Dr. Albert S. Grünbaum. Dental Surgeon: Mr. J. B. Hordern. Director of the Electro-Therapeutic Department: Mr. L. A. Rowden. Clinical Pathologist: Mr. M. J. Stewart. Assistant Clinical Pathologist: (Vacant). Medical Tutor: Dr. J. Le F. C. Burrow. Surgical Tutor: Mr. A. Richardson. Anæsthetists: Dr. Douglas Seaton, Dr. S. T. Rowling, Dr. F. Whalley, Dr. Macvean, Dr. F. Marshall Greaves, Dr. A. E. Hutton, Dr. C. T. Matthews, Dr. W. Maxwell Munby, and Dr. R. H. B. Adamson. General Manager: Fred. J. Bray.

UNIVERSITY OF SHEFFIELD.

The Degrees in the Faculty of Medicine are Bachelor of Medicine and Bachelor of Surgery (M.B., Ch.B.), Doctor of Medicine (M.D.), and Master of Surgery (Ch.M.).

Candidates for a medical degree shall have matriculated in the University or have passed such other examination as may be recognised for this purpose by the University and sanctioned by the Joint Matriculation Board. The subjects required by the General Medical Council must be included in the Matriculation Examination or its recognised substitute.

A candidate for the degrees of M.B., Ch.B., shall produce certificates that he will have attained the age of 21 years on the day of graduation; that he has pursued the courses of study required by the University regulations during a period of not less than five years subsequently to the date of his registration as a medical student by the General Medical Council, three of such years at least having been passed in the University, one at least being subsequent to the passing of the First Examination.

Degrees of Bachelor of Medicine and Bachelor of Surgery.

The First Examination.—The subjects of the examination are Chemistry, Physics, and Biology. The Intermediate B.Sc. Examination in these subjects will, on payment of the required additional fee, be accepted instead of this examination. Candidates must, after matriculation and registration as medical students, have attended courses of instruction (lectures and laboratory work) in chemistry, physics, and biology for one year each.

The Second Examination.—The subjects of the examination are Anatomy and Physiology.

The Third Examination.—The subjects of the examination are Pathology and Pharmacology. A candidate entering for the first, second, or third examination, who shall pass creditably in one subject of either examination and obtain a certain minimum of marks in the other, may enter for such other subject separately in a subsequent examination. Candidates must have completed the fourth year of professional study.

The Final Examination.—The subjects of the examination are Medicine (including Forensic Medicine, Public Health, Mental Diseases, and Diseases of Children); Surgery; and Obstetrics (including Gynæcology). Candidates must satisfy the examiners in all subjects at the same examination. Candidates must have completed the fifth year of professional study.

Degree of Doctor of Medicine.—Candidates for the degree of Doctor of Medicine must have passed the examination for the degrees of M.B., Ch.B. at least one year previously, must present a thesis embodying observations in some subject approved by the professor of medicine, and must pass an examination in the Principles and Practice of Medicine.

Degree of Master of Surgery.—Candidates for the degree of Ch.M. must have passed the examination for the degrees of M.B., Ch.B. at least one year previously, and must, since taking the degrees of M.B., Ch.B., have held for not less than six months a surgical appointment in a public hospital or other public institution, affording full opportunity for the study of Practical Surgery.

The subjects of examination are Systematic, Clinical, and Operative Surgery, Surgical Anatomy, Surgical Pathology, and Bacteriology.

Professors—Physics: W. M. Hicks, Sc.D., F.R.S. Chemistry: W. Palmer Wynne, D.Sc., F.R.S. Biology: Alfred Denny, M.Sc., F.L.S. Anatomy: C. J. Patten, M.A., M.D., Sc.D. Physiology: J. S. Macdonald, B.A., L.R.C.S., L.R.C.P. Medicine: D. Burgess, M.A., M.B., F.R.C.P. Surgery: Sinclair White, M.D., M.Ch., F.R.C.S. Pathology: H. R. Dean, M.A., M.D., F.R.C.P. Midwifery: P. E. Barber, B.A., M.R.C.S., L.R.C.P. Public Health: Ralph P. Williams, M.D., D.P.H. Dean of the Medical Faculty: Arthur J. Hall.

Scholarships, &c.—At this University there are 8 scholarships and a Town Trust Fellowship. The Entrance Scholarship, of the approximate value of £122, is awarded after examination, but the candidate must read for a Degree in Medicine. There are four Town Trust Scholarships, obtainable by a special examination open to boys or girls, who must have been educated in a Sheffield Secondary School, which are of the value of £50 each per annum. The Kaye Scholarship in Anatomy and Physiology, of £22 10*s.* for one year, is awarded after special examination of students who have completed the second Winter Session. The candidates must be natives of Sheffield. The Mechanics' Institute Scholarship of £50 per annum for one year (renewable for a second) is a post-graduate Scholarship. The Frederick Clifford Scholarship of £50 per annum for two years is available for graduates of the University residing within 40 miles. The Senate considers each application for these two latter, as also that of the Town Trust Fellowship, value £75 per annum for one year, open to graduates of the University. Full particulars as to curriculum, scholarships, &c., may be had on application to the Registrar or to the Dean of the Medical Faculty.

The Medical School.—The new buildings of the University opened in 1905 are situated at the west end of the city, adjoining Weston Park, and the Medical department occupies the entire north wing of the University quadrangle. The various athletic and other students' societies are under the management of a Students' Representative Council, elected annually. There are large and comfortable common rooms both for men and women students. A refectory is open daily at the University where students may obtain refreshments, lunch, dinner, &c., at extremely moderate prices. The University journal, *Floreamus*, edited by a committee of staff and students, is published each term. The University Hostel, Ashgate-road, is recognised by the Senate as a residence for women students, full particulars of which may be obtained of the tutor for women students.

Clinical Instruction.—The University is within easy reach of the various hospitals with which it is connected for clinical purposes. These are as follows: The Royal Infirmary, containing 320 beds, with an annual average number of over 3800 in-patients, over 11,500 out-patients, and over 23,000 casualties; the Royal Hospital, with 191 beds, and an annual number of 3000 in-patients, over 20,000 out-patients, and nearly 20,000 casualties; and the Jessop Hospital for Diseases of Women, with 80 beds, about 750 in-patients, and over 3000 out-patients; also a Maternity department, with about 450 in-patients per annum and about 700 out-patient cases attended. Special courses on Fevers are held at the City Fever Hospitals (570 beds) and on Mental Diseases at the South Yorkshire Asylum (1610 beds). For purposes of clinical practice the practices of the Royal Infirmary and Royal Hospital are amalgamated, giving a total of 511 beds for the treatment of medical, surgical, and special cases. There are special departments for the treatment of Diseases of the Eye at each institution, with wards assigned to them. In addition to these the Royal Infirmary has special departments for the treatment of Diseases of the Skin and Ear, with beds assigned to them, whilst at the Royal Hospital there are special out-patient departments for Diseases of the Throat, Ear, Skin, Orthopædics, and Mental Diseases. During the last year over 6000 patients passed through the wards of the two institutions, while those attending as out-patients numbered over 45,000. The medical and surgical staffs attend daily and give clinical instruction in the wards and out-patient rooms at stated times. Clinical lectures in Medicine and Surgery are given weekly at stated times. Instruction in the practical administration of anæsthetics is given at either institution by the Anæsthetists. The laboratories and lecture rooms connected with the subjects of the first and second examinations—namely, chemistry, physics, biology, anatomy, and physiology—which are in the University buildings are, both as regards structural arrangements and scientific equipment, on the most modern and complete lines. No expense has been spared in the matter of apparatus for teaching or research work and the facilities for practical study in these subjects are second to none. The department of Pathology and Bacteriology in the University is replete with every requirement for the most advanced work in these subjects. There is a large Pathological Museum in the department open daily to students. The post-mortem rooms of the Royal Infirmary and Royal Hospital are under the charge of the Professor of Pathology and afford ample material for demonstrations. In connexion with the University there is a complete dental department, fully recognised by the various examining bodies, at the Sheffield Royal Hospital.

Students who have passed their examination in anatomy and physiology can hold the usual dresserships and clerkships, the appointments being for a period of three months except in the case of casualty dresserships, which last two months. All students beginning hospital practice in Sheffield will be required to hold the post of casualty dresser before being eligible for any other of the above appointments. In addition to the laboratories above mentioned the Medical department of the University contains lecture rooms for the various subjects of the curriculum, a complete materia medica museum, and the large library and reading-room of the Medico-Chirurgical Society which is open daily to students for purposes of study.

Fees.—The Composition Fees are as follows: A, for University Lectures and Practical Classes, £80; B, for Clinical Hospital Practice, £49 17*s.* 6*d.* These two composition fees entitle the student to attendance on *all* the Lectures, Laboratory Classes, and Hospital practice (except Pharmacy) required for a Medical and Surgical Degree in the University or for the ordinary qualifying examinations of the various Examining Boards. The composition fees do not cover the cost of apparatus, instruments, parts for dissection in anatomy, &c., all of which must be provided by the student when and as required. The fees are payable in instalments extending over the five years of the curriculum.

Staff of the Royal Infirmary, Sheffield.—Physicians: Dr. W. S. Porter, Dr. A. E. Barnes, and Dr. A. G. Yates. Surgeons: Professor Sinclair White, Mr. Arthur Connell, and Mr. Archibald Cuff. Assistant Surgeon: Mr. Ernest Finch. Dermatologist: Dr. Rupert Hallam. Honorary Pathologist: Professor H. R. Dean. Medical Officer to the Ear and Throat Department: Mr. W. S. Kerr. Ophthalmic Surgeon: Mr. G. H. Pooley. Medical Registrar: Dr. W. W. King. Surgical Registrar: Mr. T. Mouat. Medical Officer in Charge of Electrical Department: Dr. Rupert Hallam. Anæsthetists: Mr. H. T. Wightman, Mr. J. Wilfred Stokes, Dr. W. D. Mart, Dr. W. Sneddon, and Dr. T. Robertson. Clinical Pathologist: Dr. W. W. King. Honorary Secretary to the Medical and Surgical Staff: Mr. W. S. Kerr.

Staff of the Sheffield Royal Hospital.—Physicians: Professor Duncan Burgess and Dr. Arthur Hall. Surgeons: Mr. Graham Simpson and Mr. Garrick Wilson. Assistant Physicians: Dr. A. E. Naish and Dr. Herbert Henry. Assistant Surgeons: Mr. Ferguson Wilson and Mr. Vincent Townrow. Ophthalmic Surgeon: Dr. Stanley Riseley. Assistant Ophthalmic Surgeon: Mr. Herbert Emmerson. Aural Surgeon: Dr. George Wilkinson. Physician for Mental Diseases: Mr. Gilbert E. Mould. Medical Officer to the Electrical Department: Dr. W. Harwood Nutt. Physician for Skin Diseases: Dr. E. F. Skinner. Anæsthetists: Mr. Herbert Hallam, Mr. Norton Milner, Dr. C. Graham Murray, Dr. R. G. Abercrombie, and Dr. Vernon Favell. Pathologist: Professor H. R. Dean. Honorary Secretary to the Medical and Surgical Staff: Mr. Graham Simpson (*pro tem.*). Dental Surgeons: Mr. F. G. Mordaunt, Mr. H. J. Morris, Mr. P. S. Stokes, and Mr. W. J. Law. Assistant Dental Surgeons: Mr. H. J. Stoner, Mr. R. Cecil Webster, Mr. F. W. Goodwin, Mr. J. H. Skerritt, and Mr. W. Skerritt. Honorary Secretary to the Dental Staff: Mr. W. J. Law.

The other institutions at which students of the University of Sheffield receive clinical instruction are the City Fever Hospitals (Medical Superintendent, Dr. Egerton H. Williams), the South Yorkshire Asylum, Wadsley (Medical Superintendent, Dr. W. J. N. Vincent), the Jessop Hospital for Women, Gell-street, Sheffield, and the Hospital for Sick Children. Staff: Physicians: Dr. H. Leader, Mr. A. C. Turner, and Dr. John Stokes. Surgeons: Mr. J. Broadley, Mr. C. W. Smith, and Mr. P. Reckless. Ophthalmic Surgeon: Dr. H. Cecil Snell. Medical Officer X Ray and Electrical Department: Dr. Thomas Robertson. Dental Surgeon: Mr. R. Cecil Webster. House Surgeon: Dr. W. J. S. Ingram. The Jessop Hospital contains 57 beds for gynæcological cases and 17 for obstetric cases. A staff of midwives connected with the hospital attend lying-in women at their own homes, and, in case of need, are assisted by the members of the medical staff. A three months' course of instruction (theoretical and practical) is also provided for resident pupil midwives, the institution being approved by the Central Midwives Board as a training centre. Medical Officers: Mr. Richard Favell, Mr. Percival E. Barber, and Mr. Miles H. Phillips. Assistant Medical Officer: Mr. D. Gray Newton. Honorary Secretary to the Staff: Mr. Percival E. Barber.

UNIVERSITY OF BRISTOL.

In the Faculty of Medicine there are the following degrees:—Bachelor of Medicine and Bachelor of Surgery (M.B. and Ch.B.), Doctor of Medicine (M.D.), Master of Surgery (Ch.M.), Bachelor of Dental Surgery (B.D.S.), and Master of Dental Surgery (M.D.S.). There are also the following diplomas: Diploma in Public Health (D.P.H.), Diploma in Dental Surgery (L.D.S.), and Diploma in Veterinary State Medicine.

All candidates for degrees in Medicine, Surgery, and Dentistry are required to pass an examination called the Matriculation Examination, which must include Latin, or to pass such examination as may be regarded as equivalent by the Senate. All courses, degrees, and diplomas are open to men and women alike.

Conjoined Degrees of Bachelor of Medicine and Bachelor of Surgery.—Candidates shall be not less than 21 years of age and shall have pursued the courses prescribed by University Regulations during not less than five and a half years, of which three shall have been passed in the University, and two of these three subsequent to pass in the second examination. All candidates for the degrees of M.B., Ch.B., are required to satisfy the examiners in the several subjects of three examinations: the First Examination, the Second Examination, and the Final Examination.

The First Examination.—The subjects of examination are: Chemistry (Inorganic), Physics, and Biology, the courses pursued being those for the time being approved for the intermediate part of the B.Sc. curriculum. This part of the curriculum shall extend over one year.

The Second Examination.—The subjects of examination are: Organic Chemistry and Elementary Anatomy (Part I.) and Advanced Anatomy and Physiology (Part II.). Parts I. and II. may be passed separately or together.

The Final Examination.—The subjects of examination are: Materia Medica and Pharmacy, Pharmacology and Therapeutics, General Pathology, Morbid Anatomy, and Bacteriology (Part I.); Special Pathology, Forensic Medicine, Toxicology, and Public Health, Obstetrics (including Diseases of Women), Surgery (Systematic, Clinical, Practical, and Operative), Medicine (Systematic, Clinical, and Practical, including Mental Diseases) (Part II.). Candidates may pass I. and II. together, or separately, and Forensic Medicine and Toxicology may, at the option of the candidate, be taken either with Part I. or Part II.

Degree of Doctor of Medicine.—Candidates shall be Bachelors of the University of not less than two years' standing as such and may elect either (1) to pass an examination in General Medicine, or (2) to pass an examination in State Medicine, or (3) to present a Dissertation. The candidate who elects to pass the examination in State Medicine must hold a diploma in Public Health of some University or College, and the candidate who elects to present a Dissertation may be examined in the subject thereof.

Degree of Master of Surgery.—Candidates shall be Bachelors of not less than two years as such, during which period they shall have attended the Surgical Practice of an institution approved for the purpose. They shall pass an examination in Surgical Anatomy, Pathology, and Bacteriology, and Operative, Clinical, and General Surgery, and present to the University a Dissertation on some subject of Surgery.

Professors—Chemistry: Francis Francis, D.Sc., Ph.D. Anatomy: Edward Fawcett, M.D., C.M. (Dean of the Faculty of Medicine). Physiology: A. F. Stanley Kent, M.A. Pathology: I. Walker Hall, M.D., C.M. Obstetrics: W. C. Swayne, M.D., B.S. Surgery: C. A. Morton, F.R.C.S., and James Swain, M.D., F.R.C.S. Medicine: F. H. Edgeworth, M.D., B.C., D.Sc., and J. Michell Clarke, M.D., F.R.C.P.

Clinical Instruction.—The allied hospitals (Bristol Royal Infirmary and Bristol General Hospital) have between them 550 beds and extensive out-patient departments, special clinics for Diseases of Women and Children and those of the Eye, Throat, and Ear, in addition to large and well-equipped departments for Dental work and large outdoor Maternity Departments.

At each of these institutions there are well-arranged pathological museums, post-mortem rooms, and laboratories for Morbid Anatomy. There are also laboratories for work in Clinical Pathology, Bacteriology, and Cytology, in which special instruction is given in these subjects. Departments are provided and well-equipped for X ray work, both for diagnosis and treatment, the various forms of Electrical treatment, including High Frequency Currents, Electric Baths, Finsen Light treatment, and Massage.

The students of the school have also the advantage of attending the practice of the Royal Hospital for Sick Children and Women, containing 140 beds, and that of the Bristol Eye Hospital, with 40 beds. The total number of beds available for clinical instruction is therefore upwards of 700. Excellent facilities are thus afforded to students for obtaining a wide and thorough acquaintance with all branches of Medical and Surgical work. Each student has the opportunity of personally studying a large number of cases and acquiring practical skill in diagnosis and treatment. All classes are open to women.

Appointments (Undergraduates). — Clinical Clerkships, Dresserships, also Ophthalmic, Obstetric, and Pathological Clerkships are tenable at the Bristol Royal Infirmary and the Bristol General Hospital. In these institutions the Dressers reside in rotation free of charge.

Appointments (Post-Graduate) at the Bristol Royal Infirmary.—Two House Surgeons £100 each per annum, two House Physicians £100, Resident Obstetric and Ophthalmic House Surgeon £75, Throat, Nose, and Ear House Surgeon £75, Casualty Officer £50, Dental House Surgeon £100. All these appointments are made for 12 months, except that of Casualty Officer, which is for six months. From the resident officers a Senior Resident Officer is appointed at an additional salary of £30.

At the Bristol General Hospital.—Senior House Surgeon £150 per annum, Casualty House Surgeon £100 per annum if another resident appointment has been previously held. Two House Physicians £80, House Surgeon £80, Dental House Surgeon £200 per annum. All these appointments are for six months, except that of Dental House Surgeon, which is for two years.

Staff of the Bristol Royal Infirmary.—Honorary and Consulting Physicians: Dr. R. Shingleton Smith, Dr. H. Waldo, and Dr. J. E. Shaw. Honorary and Consulting Surgeons: Mr. E. C. Board, Mr. W. H. Harsant, Mr. A. W. Prichard, Mr. G. Munro Smith, and Mr. J. Paul Bush. Honorary and Consulting Ophthalmic Surgeon: Mr. F. Richardson Cross. Honorary Physicians: Dr. A. B. Prowse, Dr. F. H. Edgeworth, Dr. J. A. Nixon (Dean of the Faculty of the Royal Infirmary), and Dr. J. R. Charles. Honorary Surgeons: Dr. J. Swain, Mr. T. Carwardine, Mr. H. F. Mole, and Mr. E. H. E. Stack. Honorary Ophthalmic Surgeon: (vacant). Honorary Obstetric Physician: Dr. Walter Swayne. Honorary Dental Surgeon: Mr. W. R. Ackland. Honorary Physician to the Nose and Throat Department: Dr. P. Watson Williams. Honorary Assistant Physicians: Dr. J. M. Fortescue-Brickdale and Dr. Richard Clarke. Honorary Assistant Surgeons: Mr. C. F. Walters and Dr. A. Rendle Short. Honorary Assistant Dental Surgeon: Mr. F. C. Nichols. Pathologist: Dr. I. Walker Hall. Honorary

Demonstrator of Morbid Anatomy: Dr. J. J. S. Lucas. Assistant Pathologist: Dr. J. R. Kay-Mouatt. Honorary Anæsthetist: Mr. A. L. Flemming. Honorary Assistant Anæsthetists: Mr. S. V. Stock and Mr. Leonard Moore. Honorary Skiagraphist: Mr. James Taylor.

Staff of the Bristol General Hospital.—Honorary and Consulting Physicians: Dr. A. J. Harrison and Dr. J. Barclay Baron. Honorary and Consulting Surgeons: Dr. George F. Atchley, Mr. Nelson C. Dobson, Mr. F. Poole Lansdown, Mr. Chas. F. Pickering, and Mr. H. Greville Kyle. Physicians: Dr. J. Michell Clarke (Dean of the Faculty of the Bristol General Hospital), Dr. George Parker, and Dr. J. O. Symes. Surgeons: Mr. C. A. Morton, Dr. R. G. Poole Lansdown, Dr. J. Lacy Firth, and Mr. E. W. Hey Groves. Physician Accoucheur: Dr. W. H. C. Newnham. Physician to Department for Diseases of the Skin: Dr. W. Kenneth Wills. Surgeon to the Throat and Nose: Mr. A. J. Wright. Surgeon to the Ear: Dr. J. Lacy Firth. Ophthalmic Surgeon: Mr. Cyril H. Walker. Assistant Physicians: Dr. Newman Neild and Dr. Carey F. Coombs. Assistant Surgeon: Mr. C. A. Moore. Assistant Physician Accoucheur: Mr. D. C. Rayner. Anæsthetists: Dr. J. Freeman and Dr. Hedley Hill. Dental Surgeon: Mr. E. A. G. Dowling. Assistant Dental Surgeon: Mr. H. J. Wyatt. Pathologist: Mr. G. Scott Williamson. Dental Anæsthetist: Mr. C. Corfield. Curator of Museum: Mr. G. Scott Williamson. Electrical Department: Dr. George Parker, Mr. J. Ellington Jones. Skiagraphist: Mr. F. G. Bergin.

Scholarships and Prizes.—At the Bristol Royal Infirmary there are five prizes, which are restricted to perpetual students who have done the necessary qualifying work at the Infirmary. They are the Suple Medical Prize and the Suple Surgical Prize, each consisting of a gold medal of the value of 5 guineas and 7 guineas in money. These prizes are awarded for proficiency in Medicine and Surgery respectively after competitive examination of students of the fifth and sixth years. The Henry Clark Prize, value 11 guineas, is awarded after examination in Obstetrics and Gynæcology of students of the fifth and sixth years. For the two Suple Prizes and the Henry Clark Prize ability to translate from French and German into English is a qualifying condition. The Crosby Leonard Prize, value 7 guineas, is awarded after examination in Clinical Surgery, and the Augustin Prichard Prize, value 6 guineas, is awarded after examination in Surgical Anatomy.

At the Bristol General Hospital there are two scholarships and a prize, which are restricted to perpetual students who have done the necessary qualifying work at the Hospital. The Sanders Scholarship, value £22 10*s.*, is awarded after competitive examination in Medicine, Surgery, and Midwifery of fourth-year students. The Clarke Scholarship of £15 is awarded after competitive examination in surgery among students of the fourth year. The Marshall Prize, value £12, is awarded to the best surgical dresser of the fourth year.

The Tibbits Surgical Prize of £9 9*s.* is awarded for proficiency in Practical Surgery. The Martyn Memorial Pathological Prizes of £10 each, of which there are two annually, are awarded after competitive examination in Pathology and Morbid Anatomy. A gold medal and a silver medal are given by the committees of the two institutions to the most distinguished students of the fifth year. These prizes and medals can be competed for by perpetual students of the Faculty of Medicine, University of Bristol.

For the complete curriculum for the degree of B.D.S., including the Mechanical Laboratory work, 190 guineas; if without the Laboratory work, 115 guineas. This fee may also be paid by instalments.

For the complete curriculum for the L.D.S., including the Mechanical Laboratory, 168 guineas; if without Laboratory, 93 guineas. This fee may also be paid by instalments.

For the complete curriculum for the D.P.H., 30 guineas.

The fees for Hospital work may be paid separately. For a Medical curriculum they amount to 60 guineas; for the B.D.S., 30 guineas; and for the L.D.S., 20 guineas.

Medical Practitioners and others not requiring certificates of attendance may attend the Medical and Surgical Practice of the Hospitals at the following fees:—For one month, 2 guineas; two months, 3 guineas; three months, 4 guineas; six months, 7 guineas.

Further information as to curricula and fees can be obtained from the Dean of the Faculty of Medicine or the Registrar of the University.

UNIVERSITY OF WALES.

This University has now the privilege of granting degrees in Medicine and Diplomas in Public Health. At the three constituent Colleges of Aberystwyth, Bangor, and Cardiff there are Professors of Chemistry, Botany, Zoology, and Physics, so that the students of the University can obtain proper instruction in the ancillary subjects. The foundation of a Medical Faculty has been laid at University College, Cardiff, where there is a recognised school of medicine.

University College, Cardiff: School of Medicine.—All classes are open to both men and women students who may spend three or four out of their five years of medical study at Cardiff. The courses of instruction given at Cardiff are recognised as qualifying for the examinations of the Universities, Royal Colleges, and other licensing bodies of Great Britain and Ireland, and they are specially adapted to meet the needs of those University students studying for Cambridge and London degrees. Students who are preparing for these examinations may compound for their courses by paying a fee of £63, while a composition fee of £41 10*s.* includes all the necessary courses for the first and second examinations for the Diploma of the Conjoint Board. In all cases the composition fees may be paid by instalments. Hospital instruction is given at the King Edward VII.'s Hospital, Cardiff. The attention of students about to matriculate is drawn to the numerous entrance scholarships offered for competition at University College, Cardiff, in April next, most of which may be held by medical students. Full particulars of the examination for these may be obtained by application to the Registrar. In the department of Public Health established in 1899 instruction is given qualifying for the D.P.H. examinations. Further information may be obtained from the Dean of the Faculty of Medicine.

Lecturers.—Physics: Professor A. L. Selby. Chemistry: Professor C. M. Thompson. Zoology: Professor W. N. Parker. Botany: Professor A. H. Trow. Anatomy: Professor David Hepburn. Physiology: Professor J. B. Haycraft. Materia Medica and Therapeutics: Dr. W. Mitchell Stevens. Pathology and Bacteriology: Professor Emrys-Roberts. Hygienic Chemistry: Mr. J. H. Sugden. Public Health and Hygiene: Dr. E. Walford and Dr. D. J. Morgan. Midwifery (for Midwives): Dr. E. J. Maclean. Vaccination: Professor Emrys-Roberts.

Clinical Instruction.—KING EDWARD VII.'S HOSPITAL, CARDIFF.—Students can attend the practice of this infirmary, which contains 270 beds. Founded 1837. In-patients, 2711; out-patients, 19,149.

Staff:—Consulting Physicians: Dr. W. T. Edwards and Dr. Herbert Vachell. Consulting Surgeon: Dr. T. Wallace. Consulting Dental Surgeon: Mr. John C. Oliver. Physicians: Dr. Mitchell Stevens and Dr. Cyril Lewis. Surgeons: Mr. P. Rhys Griffiths, Mr. William Sheen, and Mr. J. Lynn Thomas. Assistant Physicians: Dr. Alfred Howell, Dr. Ivor Davies, and Dr. Herbert Evans. Assistant Surgeons: Dr. H. G. Cook, Mr. Cornelius A. Griffiths, and Mr. William Martin. Ophthalmic Surgeons: Mr. F. P. S. Cresswell and Mr. R. Russell Thomas. Assistant Ophthalmic Surgeon: Dr. D. Leighton Davies. Gynæcologists: Dr. Ewen J. Maclean and Mr. E. Tenison Collins. Ear, Throat, and Nose Surgeon: Dr. D. R. Paterson. Pathologists: Mr. H. A. Schölberg and Professor Emrys-Roberts. Sanitary Adviser: Dr. E. Walford. Anæsthetists: Mr. Frederick W. S. Davies and Mr. Alexander Brownlee. Assistant Anæsthetists: Mr. A. C. Devereux, Dr. J. Sydney Rowlands, and Mr. A. L. Thornley. Dental Surgeons: Mr. W. Kittow and Mr. Thomas Quinlan. Electrical Department: Dr. Owen L. Rhys. Resident Medical Officer: Dr. Lloyd.

SWANSEA GENERAL AND EYE HOSPITAL AND SWANSEA HOSPITAL CONVALESCENT HOME.—Hospital established 1817. Home 1903. Hospital 141, Convalescent Home built for 20 beds and one cot. Consulting Physicians: Dr. D. A. Davies, Dr. John A. Rawlings, Dr. F. Knight, and Dr. J. S. H. Roberts. Consulting Surgeons: Mr. J. Thomas, Mr. H. A. Latimer, and Mr. W. F. Brook. Honorary Consulting Gynæcologist: Dr. R. Nelson Jones. Physicians: Dr. E. Le C. Lancaster and Dr. D. E. Evans. Surgeons: Mr. R. C. Elsworth, Mr. C. L. Isaac, and Dr. W. L. Griffiths. Physician Accoucheur: Dr. F. Knight. Gynæcologist: Dr. Edgar Reid. Ophthalmic Surgeon: Dr. Frank G.

Thomas. Assistant Ophthalmic Surgeon: Mr. H. E. Quick. Surgeon to the Throat, Nose, and Ear Department: Mr. Alban Evans. Assistant Physician: Dr. Urban Marks. Assistant Surgeons: Dr. A. W. Cameron and Dr. Trevor Evans. Vaccine Therapist: Dr. A. Clarke Begg. Medical Officers for Out-door Patients: Dr. A. W. Cameron, Dr. Trevor Evans, and Dr. Urban Marks. Surgeon-Dentist: Mr. H. J. Thomas. Electro-Therapeutic Officer: Dr. D. R. Edwards. Anæsthetists: Dr. H. W. Gabe, Dr. C. Evans, and Dr. T. L. Jones. Resident Medical Officers—House Surgeons: Dr. H. W. Gabe and Dr. B. J. M. MacEuricht. Secretary-Superintendent: W. D. Hughes. In-patients, 2130; out-patients, 9839. The number of in-patients includes the Convalescent Home, which was used as a ward of the hospital for the year owing to the growing demands for beds, coupled with the disorganisation associated with extensive building operations, &c.

ENGLISH MEDICAL CORPORATIONS GRANTING DIPLOMAS.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGE OF PHYSICIANS OF LONDON AND THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

Under this heading we give the regulations for the examinations enforced by the Conjoint Examining Board of the Royal Colleges of Physicians of London and Surgeons of England and of the Society of Apothecaries upon students desiring their respective diplomas of qualification. We do not give any list of schools recognised by these bodies as eligible to prepare students for their examinations beyond mentioning that all the schools which we have already described (under the heading of the Universities to which they are attached) are recognised as suitable places of instruction by the corporations granting medical diplomas. The courses of study at the principal colonial medical schools are also recognised as qualifying for the examinations of these corporations.

Any candidate who desires to obtain both the Licence of the Royal College of Physicians of London and the diploma of Member of the Royal College of Surgeons of England is required to complete five years of professional study at recognised Medical Schools and Hospitals and to comply with the following regulations and to pass the examinations hereinafter set forth. Six months of the curriculum may be spent in an Institution recognised by the Board for instruction in Chemistry, Physics, Practical Chemistry, and Biology.

Professional Examinations.—There are three Examinations, called herein the First Examination, the Second Examination, and the Third or Final Examination, each being partly written, partly oral, and partly practical. These examinations will be held in the months of January, April, July, and October, unless otherwise appointed. Every candidate intending to present himself for examination is required to give notice in writing to Mr. F. G. Hallett, secretary of the Examining Board, Examination Hall, Queen-square, Bloomsbury, W.C., 14 clear days before the day on which the examination commences, transmitting at the same time the required certificates.

The subjects of the *First Examination* are—Chemistry, Physics, Elementary Biology, and Practical Pharmacy. A candidate may take this examination in three parts at different times (Chemistry and Physics must be taken together until the required standard is reached in both or in one of these subjects, but a candidate will not be allowed to pass in one without obtaining at the same time at least half the number of marks required to pass in the other). A candidate will be admitted to examination in Chemistry and Physics, in Practical Pharmacy, and Elementary Biology on producing evidence of having passed the required Preliminary Examination and of having received instruction in these subjects at a recognised institution, but he may take Pharmacy at any time during the curriculum. Certificates must be produced of 180 hours' instruction and laboratory work in chemistry; 120 hours' instruction and laboratory work in physics; and 120 hours' instruction and laboratory work in biology. These courses need not be completed within one year, nor need they run concurrently, and they may be commenced or attended before the candidate passes the required preliminary examination in general education. Synopses of the subjects of examination may be obtained on application. A candidate rejected in one part or more of the First Examination will not be admitted to re-examination until after the lapse of a period of not less than three months from the date of rejection, and he will be re-examined in the subject or subjects in which he has been rejected. If referred in Chemistry, Physics, or Biology he must produce evidence of further instruction at a recognised institution. Any candidate who shall produce satisfactory evidence of having passed an examination for a degree in Medicine on any of the subjects of this examination conducted at a university in the United Kingdom, in India, or in a British colony will be exempt from examination in those subjects in which he has passed.

The fees for admission to the *First Examination* are as follows: For the whole examination, £10 10*s.*; for re-examination after rejection in Parts I. and II., £3 3*s.*; and for re-examination in each of the other parts, £2 2*s.*

The subjects of the *Second Examination* are Anatomy and Physiology. Candidates will be required to pass in both subjects at one and the same time. Candidates will be admissible to the Second Examination on production of the required certificates of professional study. The study of Anatomy and Physiology before passing in two of first three parts of the First Professional Examination is not recognised.

A candidate referred on the *Second Examination* will be required, before being admitted to re-examination, to produce a certificate that he has pursued, to the satisfaction of his teachers, in a recognised place of study, his Anatomical and Physiological studies during a period of not less than three months subsequently to the date of his reference.

The fees for admission to the *Second Examination* are: £10 10*s.* for the whole examination and £6 6*s.* for re-examination after rejection.

The subjects of the *Third* or *Final Examination* are: Part I. Medicine, including Medical Anatomy, Pathology, Practical Pharmacy, Therapeutics, Forensic Medicine, and Public Health. Candidates who have passed in Practical Pharmacy at the First Examination will not be re-examined in that subject at the Third Examination. Part II. Surgery, including Pathology, Surgical Anatomy, and the use of Surgical Appliances. Part III. Midwifery and Diseases Peculiar to Women. Candidates may present themselves for Parts I., II., and III. of the examination separately or together at the expiration of not less than two years (24 months) from the date of passing the Second Examination, on production of the certificates of study required for the respective parts, provided that the examination is not completed before the expiration of five years from the date of passing the Preliminary Examination—viz., Part I., Medicine, of having attended Lectures on Medicine, Pathology including Bacteriology, Pharmacology, and Therapeutics, Forensic Medicine, and Public Health; Practical Instruction in Medicine; Medical Hospital Practice during two winter and two summer sessions; Demonstrations in the Post-mortem Room during 12 months; Clinical Lectures on Medicine during nine months; of having discharged the duties of Medical Clinical Clerk; Instruction in the Administration of Anæsthetics; Practice of a Fever Hospital and Clinical Demonstrations at a recognised Lunatic Asylum. Part II., Surgery, of having attended Lectures on Surgery and Pathology including Bacteriology; Practical Instruction in Surgery; of having performed operations upon the Dead Subject; Surgical Hospital Practice during two winter and two summer sessions; Demonstrations in the Post-mortem Room during 12 months; Clinical Lectures on Surgery during nine months; of having discharged the duties of Surgical Dresser; Instruction in the Administration of Anæsthetics; and Clinical Instruction in Ophthalmology. Part III., Midwifery, of having attended all the above courses as well as Lectures on Midwifery; Practical Instruction in Midwifery; Clinical or other Lectures, with Practical Instruction in Diseases Peculiar to Women; of having discharged the duties of Clinical Clerk in the Gynæcological Wards or Out-patient Department; and of having conducted 20 Labours.

The fees for admission to the *Third* or *Final Examination* are as follows: For the whole examination, £21. Part I.

For re-examination in Medicine, including Medical Anatomy, Pathology, Therapeutics, Forensic Medicine, and Public Health, £5 5*s.*; for re-examination in Practical Pharmacy (if taken at this examination), £2 2*s.* Part II. For re-examination in Surgery, including Pathology, Surgical Anatomy, and the use of Surgical Appliances, £5 5*s.* Part III., For re-examination in Midwifery and Diseases Peculiar to Women, £3 3*s.*

A candidate referred on the *Third* or *Final Examination* will not be admitted to re-examination until after the lapse of a period of not less than three months from the date of rejection and will be required, before being admitted to re-examination, to produce a certificate, in regard to Medicine and Surgery, of having attended the Medical and Surgical Practice, or the Medical or Surgical Practice, as the case may be, during the period of his reference; and in regard to Midwifery and Diseases Peculiar to Women a certificate of having received, subsequently to the date of his reference, not less than three months' instruction in that subject by a recognised teacher.

Students of recognised universities in England, Scotland, and Ireland, who have passed examinations for a degree in Medicine at their universities in the subjects of the First and Second Examinations of the Examining Board, may enter for the Final Examination at the expiration of two years from the date of passing in Anatomy and Physiology, on production of the required certificates.

Graduates in Medicine of certain recognised Indian, Colonial, and Foreign universities may present themselves for the Final Examination under special conditions which can be ascertained on application to the Secretary.

ROYAL COLLEGE OF PHYSICIANS OF LONDON: THE MEMBERSHIP AND FELLOWSHIP.

In addition to the diplomas granted by the English Conjoint Board, the Royal College of Physicians of London and the Royal College of Surgeons of England grant honour diplomas, which no longer give the right to practise professionally if held separately. The Royal College of Physicians of London has two such diplomas, the *Fellowship* which is a purely honorary distinction and the *Membership* which is obtained by examination.

Membership.—Every candidate for the Membership of the College must furnish proof of having attained the age of 25 years. Candidates must not be engaged in trade, dispense medicine, make any engagement with a chemist or any other person for the supply of medicine, or practise medicine or surgery in partnership, by deed or otherwise. Any candidate being already registered or having passed a qualifying examination in accordance with the Medical Act of 1886, who has obtained the degree of Doctor or Bachelor of Medicine at a University in the United Kingdom, in India, or a British colony, or who has obtained a foreign qualification entitling him or her to practise medicine or surgery in the country where such qualification has been conferred, wherein the courses of study and the examinations to be undergone previously to graduation have been adjudged by the Censors' Board to be satisfactory, will (if the Censors think fit) be admitted to the Pass Examination. The nature and extent of this examination will, in the case of each candidate, be determined by the Censors' Board. All other candidates must produce proof of having passed the examinations required for the Licence of the College. The examination is directed partly to pathology and partly to the practice of medicine and may be modified in circumstances to be ascertained by application to the Registrar. For example, candidates under 40 years of age are examined in an ancient and a modern language, a test from which their seniors are exempt. The fee for admission as a Member of the College is 40 guineas, except when the candidate for Membership is a Licentiate of the College, in which case the fee already paid for the Licence shall be deducted from the 40 guineas. The fee for the examination is £6 6*s.*

Fellowship.—The *Fellows* are selected annually from the ranks of the *Members.*

ROYAL COLLEGE OF SURGEONS OF ENGLAND: THE FELLOWSHIP.

The Royal College of Surgeons of England confers its diploma of Fellow upon a few distinguished persons in an honorary capacity. Two Members of long standing may also be elected to the Fellowship annually. But the bulk of the Fellows obtain the diploma as the result of examination.

Fellowship.—The examination for the Fellowship is divided into two parts—viz., the First Examination and the Second Examination. The subjects of the First Examination are Anatomy and Physiology, and the questions on these subjects may require an elementary acquaintance with Comparative Anatomy and Physiology. The examination is partly written and partly *vivâ voce.* The subjects of the Second Examination are Surgery, including Surgical Anatomy and Pathology. The examination is partly written and partly *vivâ voce* and includes the examination of patients and the performance of operations on the dead body. The examinations are held during the months of May and November of each year.

The fees for examination are:—First Examination, each admission, 5 guineas. Second Examination, each admission, 12 guineas. Of such examination fees 17 guineas will be reckoned as part of the fee payable upon admission to the Fellowship. The fee to be paid upon admission to the Fellowship is 30 guineas, except when the candidate is a Member of the College, in which case the fee is 20 guineas.

A Member of the College is admissible to the First Examination at any time after receiving his Diploma of Membership. A candidate who is not a member of the College is admissible to the first Professional Examination for the Fellowship on the production of evidence of having passed the First and Second Examinations of the Examining Board in England by the Royal College of Physicians of London and the Royal College of Surgeons of England (or, if a member of a University recognised by the College for the purpose, of having passed the Examinations in his University equivalent to the First and Second Examinations of the Board) and on the production of certificates of attendance upon certain courses of study described in the Regulations.

A Member of the College is admissible to the Second Examination at any time after having passed the First Examination, on producing satisfactory evidence of having been engaged not less than six years in the study (or study and practice) of the profession.

A candidate who is not a Member of the College must possess the registrable surgical and medical degrees of universities recognised by the Council and must have been engaged in the study (or study and practice) of the profession for not less than four years subsequent to the date of obtaining the recognised qualification, one year of which shall have been spent in attendance on the Surgical Practice of a recognised hospital. The diploma of Fellow is not conferred upon successful candidates until they have attained the age of 25 years.

The Regulations may be obtained on application to the Secretary of the Examining Board, Examination Hall, Queen-square, Bloomsbury, London, W.C.

SOCIETY OF APOTHECARIES OF LONDON.

There are two examinations—Primary and Final. The Final examination is divided into Section I. and Section II. The Primary examination is held quarterly. Final examinations are held monthly. No examinations are held in the month of September.

The Primary examination consists of two parts. Part I. Elementary Biology; Chemistry, Chemical Physics, including the Elementary Mechanics of Solids and Fluids, Heat, Light, and Electricity; Practical Chemistry; and Materia Medica and Pharmacy. A synopsis indicating the range of the subjects in the examination will be sent with the regulations on application. Evidence of instruction in these subjects must be produced prior to examination. Part II. includes Anatomy, Physiology, and Histology. This examination cannot be passed before the completion of twelve months' Practical Anatomy with Demonstrations, and these subjects cannot be taken separately except in the event of the candidate having previously passed in one. Evidence must be produced of the candidate's course of study. A schedule for the Primary examination, to be obtained of the Secretary, must be signed by the Dean of the Medical School or other authority. Section I. of the Final examination consists of three parts. Part I. includes the Principles and Practice of Surgery, Surgical Pathology, and Surgical Anatomy, Operative Manipulation, Instruments, and Appliances. Part II. includes the Principles and Practice of Medicine, Pharmacology, Pathology, and Morbid

Histology; Forensic Medicine, Hygiene, Theory and Practice of Vaccination; and Mental Diseases. Part III. includes Midwifery, Gynæcology, and Diseases of New-born Children and the Use of Obstetric Instruments and Appliances. Section I. of the Final examination cannot be passed before the expiration of 45 months from the date of commencement of medical study, during which time not less than three winter sessions and two summer sessions must have been passed at one or more of the medical schools connected with a general hospital recognised by the Society. Section II. of the Final examination consists of two Parts. Part I. Clinical Surgery; Part II. Clinical Medicine and Medical Anatomy. Section II. cannot be passed before the end of the fifth year.

The course of study for the *Primary examination* is as follows:—Elementary Biology, not less than three months; Chemistry and Chemical Physics, six months; Practical Chemistry, three months; Pharmacy and Dispensing, three months; Anatomy, six months; Practical Anatomy with Demonstrations, 12 months; Physiology, six months; Histology with Demonstrations, three months. The study of these subjects must be pursued at a Medical School recognised by the Society. Instruction in Pharmacy and Dispensing must be given by a registered medical practitioner or by a member of the Pharmaceutical Society by examination, or in a public hospital, infirmary, or dispensary.

The course of study for the *Final examination, Section I.*, includes attendance on the Surgical and Medical Practice (with Post-mortem Examinations) at a hospital connected with a medical school for a period of one winter and one summer session; lectures on the Principles and Practice of Surgery, six months; Practical Surgery, three months; Clinical Surgical Lectures, nine months; Dressership, six months; Performance of Surgical Operations on the Dead Body; lectures on Principles and Practice of Medicine, six months; Pathology, three months; Clinical Medical Lectures, nine months; Clinical Clerkship, six months; Forensic Medicine, Hygiene, and Insanity, three months; Midwifery and Gynæcology, three months; Clinical Instruction in the same, three months; a course of Practical Midwifery; attendance on 20 Midwifery cases. The course of medical study must extend over the above-mentioned period of 45 months, and the offices of dresser or clinical clerk must be held at a hospital or other institution recognised by the Society.

The course of study for the *Final examination, Section II.*, includes either attendance on the Practice of Medicine and Surgery at a hospital or other institution recognised by the Society for a further period of 12 months, or six months as above and six months as a pupil of a registered practitioner holding a public medical or surgical appointment, or attendance at two special hospitals for six months (three months at each hospital), and for six months at a general hospital, all such hospitals to be recognised by the Society. Evidence shall also be given of practical instruction in Infectious Diseases and in Mental Diseases (at a lunatic asylum or in the wards of an institution containing a special ward set apart for the treatment of mental diseases), and in any two of the following subjects: Ophthalmic Surgery, Laryngology with Rhinology and Otology, Dermatology, and Diseases of Children. No candidate is eligible for the Final examination who has not completed the curriculum prescribed by the Society, in evidence of which a schedule, to be obtained of the Secretary, must be produced, signed by the Dean of the Medical School or other authority. Prior to Section II. of the Final examination the candidate must produce certificates: (1) of being 21 years of age; (2) of moral character; (3) of the course of medical study; (4) of proficiency in vaccination signed by a teacher authorised by the Local Government Board; and (5) of instruction in the administration of anæsthetics. Candidates intending to present themselves for examination are required to give 14 days' notice. A form for this purpose will be sent on application.

Licentiates are eligible for the Membership of the Society of Apothecaries. Particulars may be obtained on application to the clerk.

The fee for the Licence is 20 guineas. The examination offices are open from 10 A.M. to 4 P.M.: on Saturdays from 10 A.M. to 1 P.M. All letters should be addressed to the Secretary, Court of Examiners, Society of Apothecaries of London, Blackfriars, E.C.

METROPOLITAN ANCILLARY SCHOOLS AND HOSPITALS AFFORDING FACILITIES FOR CLINICAL OBSERVATION.

The institutions which follow provide to the medical student and medical graduate facilities for different forms of instruction and clinical observation. In each case further information can be obtained from the secretary of the hospital.

THE SEAMEN'S HOSPITAL SOCIETY possesses two hospitals—the *Dreadnought* Hospital at Greenwich, 250 beds, and the Branch Hospital in the Royal Victoria and Albert Docks, E., 50 beds. It has also two Dispensaries—one in the East India Dock-road and the other at Gravesend—from which the patients are transferred to the hospitals. The London School of Clinical Medicine is attached to the *Dreadnought* Hospital and the medical staff is as follows:—Physicians: Sir Dyce Duckworth, Bart., Dr. F. Taylor, Sir J. Rose Bradford, K.C.M.G., Dr. Guthrie Rankin, and Dr. S. Russell Wells. Surgeons: Mr. W. Turner, Mr. L. H. McGavin, Mr. E. Rock Carling, and Mr. C. C. Choyce. Ophthalmic Surgeon: Mr. L. V. Cargill. Surgeon for Diseases of the Skin: Sir Malcolm Morris, K.C.V.O. Surgeon for Diseases of the Throat, Nose, and Ear: Mr. Richard Lake. Neurologist: Dr. Gordon Holmes. Physician in Charge of the Electrical Department: Colonel Collis Barry. Assistant Physicians: Dr. C. E. Zundel, Dr. H. B. Carlill, and Dr. H. R. Prentice. Assistant Surgeons: Mr. P. Cole, Mr. C. Rowntree, and Mr. E. G. Stanley. Assistant Physician for Diseases of the Skin: Dr. H. MacCormac. Assistant Ophthalmic Surgeon: Mr. R. Bickerton. Assistant Surgeon for Diseases of the Throat, Nose, and Ear: Mr. G. N. Biggs. Director of Pathology: Professor R. Tanner Hewlett. Anæsthetists: Dr. E. W. Gandy and Dr. W. E. Robinson. Dean: Mr. C. C. Choyce. Medical Superintendent: Dr. R. S. Lawson. The London School of Tropical Medicine is attached to the Albert Dock Hospital of the Society and the medical staff is as follows: Physicians: Sir Patrick Manson, G.C.M.G., Dr. F. M. Sandwith, Dr. C. W. Daniels, and Dr. G. C. Low. Surgeon: Mr. J. Cantlie and Colonel J. J. Pratt. Ophthalmic Surgeon: Mr. L. V. Cargill. Dental Surgeon: Mr. K. W. Goadby. Director: Mr. H. B. Newham. Medical Officer East India Dock-road Dispensary: Mr. W. H. F. Oxley. Surgeon Gravesend Dispensary: Mr. C. E. Robbs. Secretary: Mr. P. J. Michelli, C.M.G.

WEST LONDON HOSPITAL, Hammersmith, W.—This hospital has 160 beds, all of which are constantly in use. 2580 in-patients and 35,852 out-patients, whose attendances numbered 161,009, were treated last year. Attached to the hospital is the West London Post-Graduate College. The practice of the hospital is reserved exclusively for qualified men, no junior students being admitted. Instruction is given in the medical and surgical out-patient rooms and demonstrations are given in the wards every morning and afternoon. Post-graduate lectures and demonstrations are given daily except Saturdays; notice of the commencement of each course is advertised in the medical journals. Special Classes are held in Diseases of the Throat and Nose, Skin, and Eye, and in Gynæcology, Medical Electricity, Operative Surgery, Bacteriology, Anæsthetics, Intestinal Surgery, Surface Anatomy, Blood and Urine, Clinical Microscopy, Tropical Medicine, Cystoscopy, Venereal Diseases, and Operative Ophthalmology. The accommodation for post-graduates consists of a large lecture room, together with reading, writing, and class rooms, &c. The hospital has a fully equipped pathological laboratory at which instruction is given in elementary bacteriology, a class being held every month. The fees for hospital practice, including lectures, are £6 6*s.* for three months or £15 15*s.* for one year. The certificate of the hospital is accepted by the Admiralty, War Office, Colonial Office, and India Office in cases of study leave. The Winter Session will commence on Oct. 12th. Further information can be obtained on application to the Dean, Mr. Donald Armour, or Vice-Dean, Mr. Bishop Harman, at the hospital. Physicians: Dr. A. P. Beddard, Dr. E. A. Saunders, and Dr. H. Pritchard. Physician for Diseases of Women: Dr. Drummond Robinson. Assistant Physician for Diseases of Women: Dr. H. J. F. Simson. Surgeons: Mr. A. Baldwin, Mr. Donald Armour, and Mr. J. Pardoe. Surgeon for Diseases of the Eye: Mr. Bishop Harman. Assistant Surgeon for Diseases of the Eye: Mr. H. P. Gibb. Assistant Physicians: Dr. Grainger Stewart, Dr. J. M.

Bernstein, and Dr. Sydney A. Owen. Assistant Surgeons: Mr. O. L. Addison, Mr. H. Tyrrell Gray, and Mr. H. S. Souttar. Surgeon-Dentist: Mr. H. Lloyd Williams. Physician in charge of Throat and Nose and Aural Department: Dr. H. J. Davis. Physician in charge of Children's Department: Dr. E. A. Saunders. Surgeon in charge of Orthopædic Department: Mr. A. Baldwin. Pathologist: Dr. R. R. Elworthy. Dermatologist: Dr. G. Pernet. Administrators of Anæsthetics: Messrs. Rickard W. Lloyd, E. W. Lewis, G. P. Shuter, and Dr. H. M. Page. Assistant Anæsthetists: Dr. J. D. Mortimer, Dr. W. E. Robinson, and Dr. G. R. Phillips. Electrician: Mr. E. D. MacDougal. X Ray Department: Dr. R. Morton. Medical Registrar: Dr. A. J. Scott Pinchin. Surgical Registrar: Mr. S. G. MacDonald. Secretary of the Hospital: Mr. A. Betteridge.

Great Northern Central Hospital, Holloway-road, N. —This hospital is recognised by the Examining Board in England of the Royal Colleges of Physicians and Surgeons as a place of study during the fifth year of the medical curriculum. Besides the Honorary Staff there are two resident House Physicians, three resident House Surgeons, six Anæsthetists, Pathologist, and Resident Medical Officer. The hospital contains 185 beds which are fully occupied. There is also a ward for children under five years of age. The large rectangular and circular wards, each of which contains 24 beds, the observation wards, the two operation theatres, general and special out-patient and pathological departments, are specially designed with a view of offering the greatest facilities for clinical work. There is also a well-appointed electrical department The Pathological Department has been extended and is under the control of a Director of Clinical Pathology. The Reckitt Convalescent Home at Clacton-on-Sea belongs to the hospital. It contains 26 beds. Medical practitioners are cordially invited to see the general and special practice of the hospital. Demonstrations are given daily in the wards and out-patient departments. Clinical assistants (qualified), clinical clerks, and pathological clerks are appointed in the general and special departments and may receive certificates at the end of their terms of office. Further particulars from the Secretary of the Medical Committee at the Hospital. Consulting Physicians: Sir R. W. Burnet and Dr. E. C. Beale. Consulting Surgeon: Mr. Peyton T. B. Beale. Consulting Ophthalmic Surgeon: Mr. A. Stanford Morton. Physicians: Dr. A. Morison, Dr. Symes Thompson, Dr. Hinds Howell, Dr. F. W. Price, Dr. H. L. Tidy, and Dr. E. Bellingham Smith. Obstetric Physicians: Dr. G. F. Blacker and Dr. Cuthbert Lockyer. Physician for Skin: Dr. Henry C. Semon. Surgeons: Mr. G. B. M. White, Mr. Arthur Edmunds, Mr. C. C. Choyce, and Mr. Barrington Ward. Ophthalmic Surgeon: Mr. A. H. Payan Dawnay. Throat and Ear Surgeons: Mr. J. Gay French and Mr. H. T. Mant. Dental Surgeon: Mr. C. F. Peyton Baly. Medical Officers in charge of Electrical Department: Dr. Robert Knox and Dr. John Morison. Director of Clinical Pathology: Dr. Ernest H. Shaw.

Prince of Wales's General Hospital, Tottenham, N.—This general hospital is in the midst of a densely populated neighbourhood of more than half a million inhabitants. It contains medical, surgical, gynæcological, and children's wards, having in all 125 beds. There are special departments for gynæcological cases, diseases of the eye, ear, throat, and nose, skin diseases, medical electricity and radiography, and dentistry. Operations are performed every afternoon of the week (except Saturday) at 2.30 P.M. Clinical instruction, laboratory classes, and lectures are given daily in the wards and out-patient departments, laboratories, and lecture hall in connexion with the North-East London Post-Graduate College attached. There are four Resident Medical Officers, and Clinical Assistants are appointed under certain conditions. Further particulars in regard to the hospital may be obtained from Mr. H. W. Carson, Secretary to the Medical Committee, 111, Harley-street, W.; or from Dr. A. J. Whiting, Dean of the North-East London Post Graduate College, 142, Harley-street, W. Consulting Physicians: Sir James Reid, Bart., and Dr. Percy Kidd. Consulting Surgeons: Mr. Hooper May and Mr. Walter Edmunds. Physicians: Dr. R. Murray Leslie, Dr. G. P. Chappel, and Dr. A. J. Whiting. Assistant Physicians: Dr. A. G. Auld and Dr. T. R. Whipham. Surgeons: Mr. H. W. Carson and Mr. J. Howell Evans. Assistant Surgeon: Mr. E. Gillespie. Gynæcologist: Dr. A. E. Giles. Assistant Gynæcologist: Dr. J. Bright Banister. Surgeon to Ear, Nose, and Throat Department: Mr. H. D. Gillies. Ophthalmic Surgeon: Mr. R. P. Brooks. Assistant Ophthalmic Surgeon: Mr. E. A. Dorrell. Physician for Skin Diseases: Dr. G. Norman Meachen. Physician to Electrical Department: Dr. Metcalfe. Anæsthetists: Dr. C. F. Hadfield, Dr. W. E. Hills, and Dr. Shannon. Bacteriologist: Dr. Benians. Secretary: Mr. F. W. Drewett.

London Temperance Hospital, Hampstead-road, N.W. (Established 1873).—Consulting Physician: Dr. Fenwick. Physicians: Dr. Parkinson, Dr. Addinsell, and Dr. Kevin Byrne. Consulting Surgeon: Sir William Collins. Surgeons: Messrs. Arthur Evans and H. J. Paterson. Assistant Surgeons: Messrs. James McClure and Chad Woodward. Ophthalmic Surgeon: Mr. J. Stroud Hosford. Physician for Diseases of the Skin: Dr. Sommerville. Ear, Nose, and Throat Surgeon: Mr. Harold L. Whale. Medical Officer in charge of Electrical Department: Dr. Herbert Rhodes. Dental Surgeon: Mr. A. Alexander. The hospital contains 100 beds. The in-patients in 1913 were 1447, and the out-patients and casualties numbered 21,851 new cases. The medical and surgical practice of the hospital is open to students and practitioners. Operations: Mondays at 2 P.M., Tuesdays, Wednesdays, and Fridays at 9 A.M.

Hampstead General and North-West London Hospital.—The Hampstead General Hospital (Haverstock Hill) and the North-West London Hospital (Kentish Town) are now amalgamated. The Hampstead General Hospital (116 beds) accommodates the in-patients from the districts hitherto served by both hospitals. The out-patients, with the exception of Hampstead casualty and emergency cases, attend exclusively at the Out-patients Department, Bayham-street, Kentish Town, where there are two Resident Medical Officers as well as resident nurses. Physicians to In-patients: Dr. G. A. Sutherland and Dr. C. O. Hawthorne, Surgeons to In-patients: Mr. J. Jackson Clarke and Mr. J. W. Thomson Walker. Physicians to Out-patients: Dr. A. Manuel, Dr. F. G. Crookshank, and Dr. A. J. Scott Pinchin. Surgeons to Out-patients: Mr. G. E. Waugh, Mr. Sidney A. Boyd, and Mr. Chad Woodward. Physician for Diseases of the Skin: Dr. S. E. Dore. Gynæcologist: Mr. Bryden Glendining. Ophthalmic Surgeon to In-patients: Sir William J. Collins. Ophthalmic Surgeon to Out-patients: Mr. T. W. Letchworth. Throat and Ear: Mr. H. L. Whale. Dental Surgeon: Mr. C. H. J. Acret. Anæsthetists: Dr. G. A. H. Barton and Mr. Hedley C. Visick. Pathologist: Dr. Herbert W. Perkins. The practice of the hospital is open to qualified medical men. Further particulars from the secretary at the hospital (Haverstock Hill, N.W.).

New Hospital for Women, 144, Euston-road, N.W.—Physicians for In-patients: Miss Macdonald, M.B., and Mrs. Flemming, M.D. Surgeons for In-patients: Miss Aldrich-Blake, M.D., M.S., and Miss Chadburn, M.D., B.S. Physicians and Surgeons for Out-patients: Miss Anderson, M.D., B.S., Miss Woodcock, M.D., B.S., Miss Bolton, M.D., B.S., and Miss Hamilton, M.D., B.S. Children's Department: Miss Hamilton, M.D., B.S. Ophthalmic Surgeon: Miss Sheppard, M.B. Senior Assistants for Out-patients: Miss M. Paine, M.D., Miss Pulteney, M.D., Miss Dunbar, M.D., Miss Davies-Colley, M.D., F.R.C.S., and Miss Jordan, M.B., B.S Obstetrician: Miss Chadburn, M.D., B.S., Miss Turnbull, M.D. Anæsthetists: Miss Browne, L.S.A., Miss Payne, M.D., Mrs. Gilliatt, M.B., B.S., and Mrs. Brady, M.B., B.S. A considerable number of the students work in the New Hospital under the visiting staff, and in return for much valued clinical teaching they perform the duties assigned to students in the wards of a general hospital. Secretary: Miss Imogen H. Murphy.

French Hospital and Dispensary, Shaftesbury-avenue, W.C.—This hospital, which was founded in 1867 to afford medical treatment for poor foreigners who speak the French language, has 74 beds. Physicians: Dr. G. Ogilvie and Dr. L. Williams. Physicians to the Out-patients: Dr. H. Dardenne, Mr. Alex. Manuel, and Dr. J. Campbell McClure. Surgeons: Mr. E. Owen, Mr. H. de Méric, and Mr. W. H. Clayton-Greene. Obstetric Physician: Dr. S. Sunderland. Ophthalmic Surgeons: Mr. C. Higgens and Mr. G. W. Thompson. Dental Surgeon: Mr. Wesley

Barritt. Honorary Anæsthetist: Mr. Walter Tyrrell. Anæsthetists: Dr. J. M. Barlet and Dr. Harvey Hilliard.

The French Convalescent Home and Retreat for Aged French People (at Brighton) contains 61 beds. Secretary: Mr. G. Pondepeyre.

GERMAN HOSPITAL, Dalston, N.E.—This hospital was founded in 1845 with the object of supplying medical aid to poor people speaking the German language and for cases of emergency and of accident. It has 154 beds, including a sanatorium with nine beds and a convalescent home at Hitchin with 40 beds. Consulting Physician: Sir H. Weber. Consulting Surgeon: (Vacant). Physicians: Dr. F. P. Weber, Dr. K. Rupp, and Dr. G. Leopold. Surgeons: Mr. E. Michels, Mr. J. P. zum Busch, Mr. G. J. Jenkins, and Mr. A. Compton. Ophthalmic Surgeons: Mr. R. Gruber and Mr. C. Markus. Anæsthetist: (Vacant). Radiographer: Dr. J. Metcalfe. Dental Surgeon: Mr. W. West. Resident Medical Officers: Mr. E. Sons, Mr. O. Nägele, Mr. B. Kohler, and Mr. R. Weber.

ITALIAN HOSPITAL.—This institution was established in 1884 for the maintenance and medical treatment of Italian and Italian-speaking people, irrespective of their religious and political opinions, who may be suffering from sickness or bodily infirmity, but the sick poor of any nationality are also admitted for treatment. The institution also provides surgical and medical relief to Italians and others not being inmates of the hospital. It has 50 beds. Honorary Consulting Physician: Sir Dyce Duckworth, Bart. Honorary Consulting Surgeons: Sir Frederick Treves, Bart., and Mr. George Lenthal Cheatle, C.B. Physicians: Cav. Uff. Dr. F. Melandri; and Cav. Dr. Vincent Dickinson. Assistant Physicians: Dr. G. Tallarico and Dr. Andrew S. Currie. Surgeons: Mr. T. P. Legg and Mr. Sydney G. Macdonald. Assistant Surgeon: Mr. D. Giordani. Throat, Nose, and Ear Department: Cav. J. Donelan. Ophthalmic Surgeon: Mr. Stanford Morton. Consulting Dental Surgeon: Cav. J. FitzGerald. Assistant Dental Surgeon: Mr. E. Whishaw Wallis. Anæsthetists: Dr. Hugh Richard Phillips and Dr. R. H. Lee. X Ray Department: Dr. Stanley Melville.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Albany Memorial), Queen-square, Bloomsbury.—The hospital, with the Finchley branch, contains 200 beds and cots. The physicians attend every Monday, Tuesday, Thursday, and Friday at 2 P.M. In- and out-patient practice at that hour. Consulting Physicians: Dr. Buzzard, Dr. Bastian, Sir D. Ferrier, Sir William Gowers, and Dr. Ormerod. Physicians: Dr. Tooth, Dr. James Taylor, Dr. J. S. Risien Russell, and Dr. Aldren Turner. Physicians for Out-patients: Dr. F. E. Batten, Dr. J. S. Collier, Dr. E. F. Buzzard, and Dr. Grainger Stewart. Assistant Physicians: Dr. Gordon Holmes, Dr. Hinds Howell, and Dr. S. A. K. Wilson. Surgeons: Sir Victor Horsley, Mr. Donald J. Armour, and Mr. Percy W. G. Sargent. Ophthalmic Surgeon: Mr. Leslie Paton. Laryngologist and Otologist: Mr. Sydney Scott. Gynæcologist: Dr. Walter Tate. Anæsthetists: Dr. Llewelyn Powell and Dr. Z. Mennell. Clinical Clerks are appointed under the in-patient and out-patient physicians. Lectures are given on Tuesdays and Fridays at 3.30. The hospital has been recognised by the Conjoint Board for England as a place where part of the fifth year may be devoted to clinical work. All communications concerning clinical appointments, lectures, hospital practice, and fees should be addressed to the Secretary at the hospital.

HOSPITAL FOR EPILEPSY, Maida Vale, W.—Both the in-patient and out-patient departments of this hospital are open free to students and medical graduates. At present no courses of instruction have been arranged, but as soon as they are decided upon particulars will be circulated.

Staff.—Dr. Geo. Ogilvie, Dr. L. G. Guthrie, Dr. Wilfred Harris, Dr. G. F. Johnston, Dr. H. Campbell Thomson, Dr. F. L. Golla, Dr. E. G. Fearnsides, and Dr. Anthony Feiling.

WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, PARALYSIS, AND EPILEPSY, 73, Welbeck-street, W.—Graduates in medicine and senior students may attend demonstrations in the Out-patient Department. No fees are charged. The physicians treating out-patients are: Dr. Harry Campbell, Dr. Frederick S. Palmer, Dr. Eric D. Macnamara, Dr. Purves Stewart, Dr. Frederick Golla, Dr. H. Ridley Prentice, and Dr. Hildred Carlill. Dr. Dundas Grant demonstrates on throat and ear cases.

The Savill Prize and Medal is awarded to the student who makes the best *viva-voce* examination and presents the best thesis after attending at least 25 demonstrations. The examination is held in July. The Savill Lecture will be delivered by Dr. Harry Campbell in middle November.

BETHLEM ROYAL HOSPITAL.—This hospital is open for the admission of two Resident House Physicians who have recently obtained their diplomas to practise Medicine and Surgery. They are permitted to reside in the hospital for a term generally not exceeding six months, commencing May 1st and Nov. 1st, and are provided with apartments, complete board, attendance, laundry, and a salary at the rate of £100 per annum. They are under the direction of the Medical Superintendent and are elected by the Committee from candidates whose testimonials appear to be most satisfactory. The students of certain specified London Medical Schools receive Clinical Instruction in the wards of the hospital and qualified practitioners and other students may attend for a period of three months on payment of a fee. Medical Superintendent: Dr. Porter Phillips. Senior Assistant Physician: Dr. Ralph Brown. Junior Assistant Physician: Dr. H. L. McCarthy.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton (333 beds).—The hospital contains 333 beds in the two buildings. The Sanatorium at Frimley contains 100 beds and 50 beds for paying patients. Six House Physicians reside in the hospital for a term of six months; their duties include attendance in the out-patient department. Pupils are admitted to the practice of the hospital: terms, £1 1*s.* for one month; three months, £2 2*s.*; perpetual, £5 5*s.* Lectures and Clinical Demonstrations are given throughout the year by members of the medical staff. The next course will commence on Oct. 9th. Courses of instruction are given in the laboratories for one month (£5 5*s.*). Clinical Assistants are appointed to the Assistant Physicians in the out-patient department and Clinical Clerks to the Physicians in the wards. The hospital has been recognised by the Conjoint Board for England as a place where six months of the fifth year may be spent in clinical work. The medical practice of the hospital is also recognised by the University of London, the Apothecaries' Society, and the Army and Navy and Indian Medical Boards. Consulting Physicians: Sir Richard Douglas Powell, Dr. F. T. Roberts, Dr. J. M. Bruce, Dr. T. H. Green, Dr. T. D. Acland. Sir J. K. Fowler, Dr. P. Kidd, Dr. R. Maguire, and Dr. H. W. G. Mackenzie. Physicians: Dr. S. H. Habershon, Dr. F. J. Wethered, Dr. P. Horton-Smith Hartley, Dr. J. J. Perkins, Dr. H. Batty Shaw, and Dr. W. C. Bosanquet. Assistant Physicians: Dr. R. A. Young, Dr. C. Wall, Dr. W. J. Fenton, Dr. A. J. Jex-Blake, and Dr. Burrell. Consulting Surgeon: Sir R. J. Godlee. Surgeon: Mr. S. Boyd. Dental Surgeon: Mr. A. E. Ironside. Surgeon to Throat and Ear Department: Dr. Dundas Grant. Superintendent of Laboratories: Dr. A. C. Inman. X Ray Department: Dr. S. Melville. Resident Medical Officer: Dr. Jones.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—During the past year 1041 in-patients have been treated in the wards, and the large number of 45,748 cases since the opening of the wards in 1855. The number of out-patients treated during 1912 was 8996 and 802,081 since the commencement of the institution in 1848. Information as to medical instruction can be obtained on application to the Secretary of the Medical Committee at the hospital. Consulting Physicians: Dr. Eustace Smith, Dr. Vincent D. Harris, Sir William S. Church, Bart., Dr. E. Clifford Beale, Dr. Harrington Sainsbury, Dr. G. A. Heron, and Sir Hugh Beevor, Bart. Physicians: Dr. T. Glover Lyon, Dr. W. J. Hadley, Dr. E. H. Colbeck, Dr. Arnold Chaplin, Dr. Hugh Walsham, and Dr. O. K. Williamson. Surgeon-Physician in Charge of the Department of Cardiac Pathology: Dr. T. Lewis. Physicians to Out-patients: Dr. Clive Riviere, Dr. Eric Pritchard, Dr. Sydney A. Owen, Dr. Goodman Levy, Dr. A. C. D. Firth, and Dr. H. E. Carlill. Laryngologist: Mr. W. G. Howarth. Radiographer: Mr. D. M. Stone. Surgeon Dentist: Mr. Evelyn C. Sprawson. Secretary: Mr. George Watts. Secretary of the Medical Committee: Dr. Sydney A. Owen.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road. (80 beds.)—This hospital provides accommodation for 80 in-patients. Expenditure for 1913 £7345; income

£5612. The attendance of out-patients averages 28,000 annually. Consulting Physicians: Dr. Horace Dobell, Dr. P. J. Hensley, Professor D. W. Finlay, and Dr. W. H. White. Physicians: Dr. A. Davies, Dr. J. Calvert, Dr. M. Leslie, Dr. J. H. Drysdale, Dr. A. G. Phear, and Dr. H. E. Symes-Thompson. Assistant Physicians: Dr. Kenneth Kellie, Dr. Barty King, and Dr. Stott. Consulting Surgeons: Sir A. Pearce Gould and Mr. W. Turner. Surgeon: Mr. Arthur Evans. Anæsthetist: (vacant.) Clinical Pathologist: Dr. Carnegie-Dickson. Dental Surgeon: Mr. G. Thomson. Radiographers: Dr. A. C. Jordan and Dr. Mowat. Cardiologist: Dr. A. W. Stott. Laryngologist: Dr. Mant. Medical Registrar: Dr. Comyn. Resident Medical Officer: Dr. F. W. Hamilton. House Physician: Dr. D. D. Malpas. Secretary: Mr. A. T. Mays.

THE MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, NORTHWOOD, CENTRAL OUT-PATIENT DEPARTMENT, Fitzroy-square, W.—The hospital contains 110 beds. Number of in-patients, 377; out-patients, 2651. Resident Medical Staff. Clinical Demonstrations are given by the Visiting Medical Staff at the hospital at Northwood. Clinical assistants are appointed to physicians in the wards and in the out-patient department. Physicians: Dr. George Johnston, Dr. T. N. Kelynack, Dr. T. D. Lister, Dr, Alexander Morison, Dr. Halls-Dally, and Dr. Reeve. Secretary: Mr. W. J. Morton. Offices: 7, Fitzroy-square, W.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL AND MIDWIFERY TRAINING SCHOOL, Marylebone-road, N.W.—This hospital receives about 1800 patients annually, besides having a large out-patient department. Medical pupils are received at all times of the year. Pupils have unusual opportunities of seeing obstetric complications and operative midwifery, on account of the very large number of primiparous cases—nearly one-half of the total admissions. Clinical instruction is given on the more important cases which present themselves. Certificates of attendance at this hospital are recognised by all the Universities, Colleges, and licensing bodies. Pupil midwives and monthly nurses are received and specially trained. Fees: Medical Students, £8 8*s.* for four weeks; Qualified Medical Practitioners, £8 8*s.* for four weeks. Pupil Midwives (including board and lodging), £40 for six months (including one month in the Preliminary Training School), £35 for five months (trained nurses £25 for four months); Pupil Nurses (including board and lodging), £29 for five months (including one month in the Preliminary Training School), £24 for 16 weeks (trained nurses £18 for 12 weeks). The new Residential College provides accommodation for five men at a time, students and qualified practitioners, and is opposite the hospital, with which it is in telephonic communication. For further particulars application should be made to Mr. Arthur Watts, Secretary, at the hospital. Students join preferably on the first Monday in each month. Arrangements have been made whereby Medical Students can now be admitted to the practice of the hospital in order to receive preliminary instruction in Practical Midwifery in accordance with the recommendations of the General Medical Council. This instruction will include: (1) Practical instruction in the methods of examination of pregnant women; (2) delivery of women in labour under the direct supervision of a Medical Officer of the hospital; (3) practical instruction in the treatment of the mother and child during the puerperium, including clinics held twice weekly by the Visiting Medical Staff; and (4) instruction in the Clinical Laboratory of the hospital. The fee for hospital practice will be £5 5*s.* per calendar month. Students will be accommodated at the Residential College. Terms for residence and full board, 30*s.* per week. Consulting Physicians: Dr. George B. Brodie, Dr. W. S. A. Griffith, Dr. W. J. Gow, and Dr. T. W. Eden. Physicians to In-patients: Dr. A. F. Stabb, Dr. C. Hubert Roberts, Dr. Thomas G. Stevens, and Dr. R. D. Maxwell. Physicians to Out-patients: Dr. C. White and Dr. J. B. Banister.

THE HOSPITAL FOR WOMEN, Soho-square, W.—In connexion with the out-patient department there has been for some years a well-organised Clinical Department. Gentlemen are appointed to act as clinical assistants to the gynæcologists to out-patients. The appointments are open to qualified medical men and women. Every facility is afforded them by the gynæcologists in the out-patient department of obtaining experience in diagnosis and treatment and the practical use of instruments. Fee for one month £2 2*s.*; for each subsequent month the same. The hospital contains 67 beds. In the out-patient department there were over 4000 new cases during the past year, the total number of out-patient attendances being 14,500. This large number affords exceptional opportunities for examining and studying most of the varieties of the diseases of women. Applications should be made to the Secretary. Consulting Physicians: Dr. C. H. Carter, Dr. E. Holland, and Dr. Richard T. Smith. Gynæcologists: Dr. J. A. Mansell-Moullin, Dr. Bedford Fenwick, Dr. James Oliver, Dr. J. H. Dauber, Dr. T. G. Stevens, and Dr. H. J. F. Simson. Surgeons: Mr. D. Drew and Mr. L. H. McGavin. Surgeon Dentist: Mr. W. J. May. Anæthetists: Mr. C. J. Ogle, Dr. M. Horne, Dr. Pinto-Leite, and Dr. J. B. Mackenzie. Pathologist and Registrar: Dr. Trevor B. Davies. Secretary: Alfred Hayward.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Glamis-road, Shadwell, E.—The hospital maintains 124 cots, and on an average 245 out-patients are seen daily. Clinical instruction is given by the physicians and surgeons to the hospital, which is recognised by the Conjoint Board for England as a school of medical teaching for students in the fifth year of the curriculum. All particulars may be obtained on application to the Secretary. Two clinical clerkships for qualified or unqualified students are open every three months subject to reappointment if desired. Clinical assistants (qualified men only) are from time to time appointed in the out-patient department. Any additional information may be obtained on applying to Mr. W. M. Wilcox, the Secretary, at the hospital. Physicians: Dr. Eustace Smith, Dr. E. Graham Little, Dr. A. M. Gossage, Dr. Clive Riviere, and Dr. T. Fisher. Surgeons: Mr. R. Warren and Mr. J. E. Adams. Assistant Physicians: Dr. O. K. Williamson, Dr. R. S. Frew, and Dr. G. Graham. Assistant Surgeon: Mr. A. J. Friedlander. Ophthalmic Surgeon: Mr. F. Juler. Dental Surgeon: Mr. E. S. Pierrepont. Medical Officer for the Electrical Department: Dr. Collis Barry. Medical Officer for the Casualty Department: Mr. V. Rich. Resident Medical Officer: Mr. A. J. Waugh. House Physician: Mr. T. Warrington. House Surgeons: Mr. J. E. H. Roberts and Mr. C. M. Kennedy. Secretary: Mr. W. M. Wilcox.

THE HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C., contains 240 beds, divided into 95 medical, 105 surgical, and 40 for special and infectious cases, besides 30 beds at the convalescent branch, Highgate. The hospital having been recognised by the Conjoint Board for England as a place where, under the new curriculum, six months of the fifth year may be spent in clinical work, the practice is arranged to meet this need and is open to students who have completed four years of medical study and also to qualified medical men. The medical staff are recognised by the University of London as teachers in Diseases of Children. Appointments are made every three months to six medical clerkships, which are open to students of the hospital. There is a museum in connexion with the hospital. The sessions are of ten weeks' duration, and begin in October, January, and March. Clinical instruction is given daily by members of the visiting staff. Fees for hospital practice, one month, £2 2*s.*; three months, 5 guineas; perpetual ticket, 10 guineas. Clinical Clerks, 1 guinea for three months. Ophthalmological Clerkships.—Clinical Clerks are appointed once a month. Fees £1 1*s.* for one month's attendance. Pathological Clerkships.—Facilities are afforded for obtaining theoretical and practical instruction in Clinical Pathology and Bacteriology in the Pathological Laboratories. Clerks attend for about four hours daily. Fees: For one month, £3 3*s.*; for two months, £5 5*s.*; for three months, £6 6*s.* A reduction is made in the case of those already holding tickets for general attendance at the hospital. Special Post-graduate Classes.—Special courses of instruction in the Diseases of Children are held three times during the year. Fee for each course of six lectures, £1 1*s.* Special courses of instruction are given throughout the year as follows: Mondays and Thursdays, 4 to 5 P.M., Pathological Investigation of Diseases of Childhood; Mondays and Thursdays, 5 to 6 P.M., Minor Surgical Ailments of Childhood; Tuesdays and Fridays, 5.15 to 6.15 P.M., General Surgical Diseases of Children. Fee for six attendances,

£1 1*s.* Consulting Physicians: Sir Thomas Barlow, Bart., Dr. D. B. Lees, Dr. F. G. Penrose, and Dr. A. E. Garrod. Physicians: Dr. A. F. Voelcker, Dr. W. S. Colman, Dr. F. E. Batten, and Dr. G. F. Still. Physicians to Out-patients: Dr. F. J. Poynton, Dr. Robert Hutchison, Dr. H. Thursfield, Dr. T. Thompson, and Dr. F. Langmead. Consulting Surgeons: Mr. Howard Marsh, Mr. Edmund Owen, Mr. John H. Morgan, C.V.O., and Mr. Bernard Pitts. Surgeons: Emeritus Surgeon Sir W. A. Lane, Mr. Thomas H. Kellock, Mr. Edred M. Corner, Mr. G. E. Waugh, and Mr. H. A. T. Fairbank. Surgeons to Out-patients: Mr. O. L. Addison, Mr. H. T. Gray, and Mr. L. E. Barrington-Ward. Ophthalmic Surgeon: Mr. W. H. McMullen. Surgeon to Aural Department: Mr. G. E. Waugh. Dental Surgeon: Mr. A. T. Pitts. Radiographer: Dr. Ironside Bruce. Local Medical Officer for Cromwell House: Dr. A. M. Henderson. Medical Registrar: Dr. H. Paterson. Clinical Pathologist and Bacteriologist: Dr. D. Nabarro. Anæsthetists: Mr. Graham Scott, Dr. H. S. Sington, Mr. C. J. Loosely, and Mr. H. B. Wilson. Resident Medical Superintendent: Mr. T. T. Higgins. Secretary: Mr. Stewart Johnson.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark Bridge-road, S.E.—This hospital contains 76 cots and a very extensive Out-patient Department. About ten clinical assistants, to work with the Honorary Medical Staff for Out-patients, are appointed quarterly for a period of three months; there is no salary attached to these posts; but, on the other hand, no fees are charged. Consulting Physicians: Sir J. F. Goodhart, Bart., Dr. Frederick Taylor, and Dr. Nestor Tirard. Consulting Skin Physician: Dr. S. Ernest Dore. Physicians: Dr. J. Charlton Briscoe, Dr. T. R. Whipham, and Dr. D. Forsyth. Physicians in charge of Out-patients: Dr. H. C. Mann and Dr. C. E. Zundel. Physician in charge of Skin Department: Dr. H. W. Barber. Consulting Surgeons: Sir H. G. Howse, Mr. R. Clement Lucas, Mr. G. H. Makins, C.B., Sir F. S. Eve, Mr. F. C. Abbott, Mr. A. H. Tubby, and Mr. C. H. Fagge. Consulting Aural Surgeon: Mr. G. N. Biggs. Consulting Dental Surgeon: Mr. R. D. Pedley. Surgeons: Mr. H. S. Clogg and Mr. C. A. R. Nitch. Surgeons in charge of Out-patients: Mr. P. Maynard Heath and Mr. F. D. Saner. Dental Surgeon: Mr. G. G. Packe. Ophthalmic Surgeon: Mr. R. E. Bickerton. Aural Surgeon: Mr. J. F. O'Malley. Anæsthetists: Mr. F. D. S. Jackson and Mr. H. M. Pinto-Leite. Radiographer: Mr. W. N. Kingsbury. House Physicians: Mr. H. A. Douglas and (one vacancy). House Surgeon: Mr. E. W. Smerdon. Secretary: H. C. Staniland Smith.

VICTORIA HOSPITAL FOR CHILDREN, Chelsea, S.W.—The hospital contains 104 beds and has a large out-patient department (over 1200 weekly); the home at Broadstairs has 50 beds, and the home at Biggen Hill, Kent, has 14 beds. Consulting Physician: Dr. Ridge Jones. Consulting Surgeons: Mr. Cowell, Mr. Pickering Pick, and Mr. D'Arcy Power. Physicians: Dr. Walter Carr, Dr. Humphry D. Rolleston, Dr. Charles Miller, Dr. Reginald Jewesbury, Dr. Douglas Firth, and Dr. E. A. Cockayne. Physician to Skin Department: Dr. J. M. H. MacLeod. Surgeons: Mr. H. F. Waterhouse, Mr. Fedde Fedden, and Mr. Ralph Thompson. Surgeons to the Out-patients: Mr. C. M. Page, Mr. H. Blakeway, and Mr. Lancelot Bromley. Ophthalmic Surgeon: Mr. C. Devereux Marshall. Dental Surgeon: Mr. Francis R. Smyth. Anæsthetists: Dr. F. Stanley Hewett and Dr. W. W. Wells. Electro-Therapeutic and Radiographic Department: Dr. Stanley Melville. Resident Medical Officer: Mr. Norman Duggan. House Surgeon: Mr. E. Spencer Calthorp. House Physician: Mr. Gerald D. Shann. Secretary: Mr. H. G. Evered. Matron: Miss J. Watson. Out-patients are seen as under:—Diseases of the Eye: Wednesday, 2 P.M. Diseases of the Skin: Wednesday, 1.30 P.M. Whooping-cough Cases: Friday, 2.30 P.M. Medical and Surgical Cases: Mornings at 9.30. Dental Cases: Thursday, 1.30 P.M. Accidents and urgent cases are admitted at any time.

THE QUEEN'S HOSPITAL FOR CHILDREN (*late North-Eastern Hospital for Children*), Hackney-road, Bethnal Green, N.E. (Telephone 305 Dalston.) For the sick children of the poor under 14 years of age. Established 1867. 134 beds in London and 30 at the seaside branch, "Little Folks" Home, Bexhill.—During the past year 1858 in-patients and 33,861 out-patients were relieved, 666 of the in-patients being infants under two years of age. Consulting Physicians: Dr. W. Cayley, Dr. W. Pasteur, Dr. W. A. Wills, and Dr. James Taylor. Consulting Surgeons: Mr. Waren Tay, Sir R. J. Godlee, Bart., Mr. Bilton Pollard, and Mr. H. Percy Dean. Physicians: Dr. J. Porter Parkinson, Dr. R. A. Chisolm, and Dr. Eric Pritchard. Assistant Physicians: Dr. Eric Bellingham-Smith, Dr. Sidney Owen, Dr. Alexander Gow, and Dr. T. S. Lukis. Surgeons: Mr. Douglas Drew and Mr. P. Lockhart Mummery. Assistant Surgeons: Mr. Stephen Fenwick and Mr. Blundell Bankart. Ophthalmic Surgeon: Mr. Sydney Stephenson (Thursday, 2.30 P.M.). Physician in charge of Skin Department: Dr. J. L. Bunch (Friday, 1.30 P.M.). Surgeon in charge of the Ear, Nose, and Throat Department: Mr. J. H. Connolly (Monday, 10 A.M., and Thursday, 9 A.M.). Dental Surgeons: Mr. S. F. Rose (Tuesday and Friday, 2.30 P.M.) and Mr. Price Harris (every morning except Saturday for London County Council school cases). Medical Radiographer: Dr. E. Ulysses Williams. Pathologist and Registrar: Dr. W. T. Hillier. Resident Medical Officer: Dr. Geoffrey Stanger. Four other medical residents (appointed half-yearly)—viz., two House Physicians (one man and one woman), one House Surgeon (man), and one Casualty House Surgeon (woman). Matron: Miss Bushby. Secretary: Mr. T. Glenton-Kerr. The surgeons attend on Wednesdays at 2 P.M. and Fridays and Saturdays at 9.30 A.M.; the physicians daily at 2 P.M., except Saturday, 9.30 A.M., and Wednesday and Friday, 9.30 A.M., as well as 2 P.M. A course of clinical demonstrations and lectures, open free to medical practitioners and students of medicine of both sexes, will be given during the winter session.

THE BELGRAVE HOSPITAL FOR CHILDREN, Clapham-road, S.W.—Clinical Assistants are from time to time appointed to the members of the Visiting Staff attending in the Out-patient Department at this hospital, and facilities are given for attendance in the wards. Physicians: Dr. Edmund Cautley, Dr. Kenneth Kellie, and Dr. Stanley Wyard. Surgeons: Mr. Sidney A. Boyd, Mr. Lionel E. C. Norbury, Mr. N. Bishop Harman, Mr. H. Graeme Anderson, and Mr. Chad Woodward.

ALEXANDRA HOSPITAL FOR CHILDREN WITH HIP DISEASE, Queen-square, W.C.—At this hospital students who have obtained a recommendation from their teachers can attend to see the practice. The out- and in-patients' clinic is held on Mondays and Thursdays at 3.30 P.M. Surgeons: Sir Anthony Bowlby and Mr. W. Girling Ball. Visiting Medical Officer: Mr. H. N. Burroughes.

ROYAL LONDON OPHTHALMIC HOSPITAL (Moorfields, 1804–1899), City-road, E.C. 138 beds.—This hospital, known as Moorfields Eye Hospital, was moved in 1899 to larger buildings in City-road. In 1913 there were 2211 in-patients, the out-patients were 52,404, of whom 40,393 were new out-patients, and the attendances were 123,776. Operations are performed daily from 10 A.M. to 1 P.M., and four surgeons attend on each day. Students are admitted to the practice of the hospital. Fee for six months, £3 3*s.*; perpetual, £5 5*s.* A special Clinical demonstration is given by a member of the staff in the out-patient department every morning. Courses of instruction on the following subjects are given at the hospital periodically: (1) examination of the eye; (2) the use of the ophthalmoscope; (3) errors of refraction; (4) external diseases of the eye; (5) surgical anatomy of the eye; (6) motor anomalies; (7) pathology of the eye; (8) practical pathology; (9) bacteriology; (10) operative surgery; and (11) X ray work. A composition fee of £10 10*s.* will entitle students of the hospital to a perpetual ticket, and will admit them once to all the above lectures and demonstrations except the classes on practical pathology, bacteriology, operative surgery, and X ray work. Students of the hospital are eligible for the offices of house surgeon or clinical and junior assistants. Junior assistants are appointed every three months. Any further information will be furnished by Mr. Robert J. Bland, Secretary. Consulting Surgeons: Mr. J. Couper, Sir John Tweedy, Mr. W. Tay, Mr. W. Lang, and Mr. A. S. Morton. Consulting Medical Officer to the X Ray Department: Sir James M. Davidson. Physicians: Dr. J. Taylor and Dr. Gordon M. Holmes. Surgeons: Mr. J. B. Lawford, Mr. E. T. Collins, Mr. W. T. H. Spicer, Mr. P. Flemming, Mr. J. H. Fisher, Mr. C. D. Marshall, Mr.

J. H. Parsons, and Mr. C. Worth. Assistant Surgeons: Mr. G. Coats, Mr. M. L. Hepburn, Mr. A. C. Hudson, and Mr. R. Foster Moore. Dental Surgeon: Mr. A. E. Relph. Medical Officer to the X Ray Department: Mr. R. Higham Cooper. Curator and Librarian: Mr. R. A. Greeves. Bacteriologist: Mr. S. H. Browning. Three Refraction Assistants; 3 Resident House Surgeons; 24 Chief Clinical Assistants; 17 Clinical Assistants; and 16 Junior Assistants.

Royal Westminster Ophthalmic Hospital, King William-street, West Strand.—The hospital contains 40 free beds. The Out-patient Department has been recently reconstructed and enlarged, whereby the convenience for treatment and examination has been considerably improved. Patients, who number over 15,000 annually, are seen at 1 P.M., and operations are performed daily at about 2 P.M. The following are the days of attendance of the surgeons: Mr. Grimsdale and Mr. Brewerton, Mondays and Thursdays; Mr. Roll and Mr. McMullen, Tuesdays and Fridays; and Mr. Dodd and Mr. Cruise, Wednesdays and Saturdays. The practice of the hospital is open to practitioners and students. Fees for six months, £3 3*s.*; perpetual, £5 5*s.*; shorter periods by arrangement. Students of the hospital are eligible for the posts of house surgeon, assistant house surgeon, pathologist, and clinical assistants. Special demonstrations and lectures will be given during the session, commencing early in October; for details see weekly journals. Clinical Assistants (who must be duly qualified) to the Surgical Staff are appointed twice a year for periods of six months. Secretary: Mr. John Hy. Johnson.

Royal Eye Hospital, St. George's-circus, Southwark, S.E.—There are 40 beds and 2 cots. There were 65,194 attendances in the Out-patient Department last year, and the new patients numbered 21,047. Operations are performed, and out-patients are seen daily at 9 A.M. and 2 P.M. The following are the days of attendance:—Afternoons: Sir William J. Collins, Wednesdays; Mr. L. V. Cargill, Tuesdays; Mr. J. Stroud Hosford, Mondays and Fridays; Mr. E. Brooksbank James, Mondays and Thursdays; and Mr. E. A. Dorrell, Saturdays. Mornings: Dr. H. Willoughby Lyle, Tuesdays and Fridays; Mr. A. D. Griffith, Mondays, Thursdays, and Saturdays; and Mr. E. A. Dorrell, Wednesdays. Courses of clinical and practical instruction in Ophthalmology will be given by the hospital staff on dates to be announced. Fee for the course, including three months' hospital practice, £3 3*s.* Tutorial classes for the various examinations arranged as far as possible to suit candidates. Clinical assistantships are open to fully qualified practitioners who have received a course of instruction at the hospital. Further particulars may be obtained from the Dean, Mr. A. D. Griffith.

Central London Ophthalmic Hospital, Judd-street, St. Pancras, W.C.—This hospital, which has lately been rebuilt, has 28 beds and possesses a well-equipped laboratory and every facility for clinical teaching daily. Last year there were 367 in- and 11,470 out-patients (entailing 28,313 attendances). Classes of instruction in the various branches of Ophthalmology will be held during the winter session, commencing in October. The out-patient work begins at 1 o'clock, and operations are performed daily between 1 and 4. Consulting Physician: Sir Dyce Duckworth, Bart. Consulting Surgeons: Mr. T. Brittin Archer, Mr. A. P. L. Wells, and Mr. Ernest Clarke. Surgeons: Mr. Stephen Mayou, Mr. J. F. Cunningham, and Mr. A. Levy. Assistant Surgeons: Mr. F. A. Juler, Mr. H. P. Gibb, and Mr. M. W. B. Oliver. Physician: Dr. Charles O. Hawthorne. Pathologist: Mr. F. A. Juler. House Surgeon: Mr. W. Bainbridge. Dentist: Mr. E. P. May. Secretary: Mr. H. R. S. Druce.

Hospital for Diseases of the Throat, Golden-square, London, W., with which is amalgamated The London Throat Hospital, Portland-road.—The hospital contains 60 beds. There is an out-patient attendance of over 50,000 yearly. Clinical Instruction in the Diagnosis and Treatment of Disease is given in the out-patient department from 2 to 5 P.M., on Tuesdays and Fridays from 6.30 to 9 P.M., and Mondays at 9 A.M. Practitioners and Students are admitted to the Practice of the Hospital at a fee of 5 guineas for three months, 7 guineas for six months, or 10 guineas for a Perpetual Studentship. Each course may commence at any date. Special terms to men in actual practice who can only attend the hospital once or twice a week. Gentlemen may enter to the practice of the hospital at any time. From amongst the students Junior Clinical Assistants are selected, whose duty it is to assist the member of the staff to whom they are appointed. Two Systematic Courses of Lectures are given during the Winter Session, the one before and the other after Christmas, which are free to medical men and students on presentation of their cards. A Course will also be given during May and June. A syllabus of these lectures can be obtained on application to the honorary medical secretary, Mr. George W. Badgerow. Consulting Staff: Mr. T. Mark Hovell, Dr. H. Lambert Lack, Dr. Edward Law, and Mr. E. B. Waggett. Advisory Staff—Physicians: Dr. A. C. Latham and Dr. C. E. Lakin. Neurologist: Dr. E. F. Buzzard. Ophthalmologist: Mr. W. Lang. Radiographer: Dr. W. Ironside Bruce. Surgeons: Dr. J. W. Bond, Mr. C. A. Parker, Mr. C. Woakes, Dr. Fitzgerald Powell, Mr. G. C. Cathcart, Dr. W. H. Kelson, Mr. Frank Rose, Mr. Jefferson Faulder, and Mr. George Badgerow. Assistant Surgeons: Mr. Norman Patterson, Mr. Irwin Moore, Mr. F. F. Muecke, and Mr. L. Colledge. Dental Surgeon: Mr. A. T. Pitts.

Central London Throat and Ear Hospital, Gray's Inn-road.—In addition to the new In-patient Department and operation theatre the hospital has a very extensive out-patient department, which is open to all medical practitioners and students for the purpose of clinical demonstration and instruction during the hours of the surgeons' visits. During the past year 10,851 out-patients (involving 47,212 attendances) and 1031 in-patients were treated. The fee for three months' attendance is 5 guineas; for six months, 8 guineas. The post-graduate teaching consists of successive series of practical demonstrations by the members of the staff delivered twice weekly during the winter and summer sessions. They are so arranged that practitioners joining at any part of the course are enabled to complete the group of subjects. A special Operative Surgery class is held at intervals. The fee for each course is 2 guineas, with daily attendance at the out-patient department during the period of the course. Details of subjects, &c., will be afforded by the Dean. Considerable attention is given to scientific work, particularly with regard to Bacteriology of the ear and respiratory passages. Operation days: in-patients, Monday, Tuesday, Wednesday, Thursday, and Friday, at 2 P.M.; out-patients, daily at 9 A.M. Consulting Physicians: Dr. Arthur Orwin and Dr. Purves Stewart. Consulting Surgeons: Sir Watson Cheyne, Bart., Dr. Dundas Grant, and Dr. Percy Jakins. Consulting Ophthalmic Surgeon: Mr. Stanford Morton. Surgeons: Mr. Chichele Nourse, Dr. Abercrombie, Mr. Stuart-Low, Dr. Andrew Wylie, Dr. Atkinson, and Dr. McKenzie. Assistant Surgeon: Mr. H. Kisch. Pathologists: Dr. Wyatt Wingrave and Dr. William Duncan. Dental Surgeons: Mr. Whishaw Wallis and Mr. Henning James. Anæsthetists: Dr. Beresford Kingsford, Dr. Mortimer, and Dr. Crampton. Assistant Anæsthetist: Dr. Leslie Rawes. In addition the following appointments are open to qualified members of the profession:—Six Registrars, tenable for twelve months; and sixteen Clinical Assistants, tenable for three or six months. Dean: Dr. Wyatt Wingrave. Secretary: Mr. Richard Kershaw.

The Metropolitan Ear, Nose, and Throat Hospital (1838) (incorporated).—The hospital was founded in 1838, and is situated in Fitzroy-square. The Out-patient Department is opened daily at 2.30 P.M. to all medical practitioners and senior students for acquiring clinical instruction and technical knowledge. Operations upon in-patients are performed on Tuesdays, Wednesdays, Thursdays, and Fridays at 10 A.M. Fee for one month's attendance at the hospital £1 1*s.*, and for three months £2 2*s.* During the forthcoming session practical demonstrations will be given by members of the staff on the diagnosis and treatment of diseases of the ear and respiratory passages. Each course may commence at any time. Consulting Surgeon: Mr. J. Pickett. Surgeons: Mr. H. Pegler, Mr. F. Spicer, Mr. W. J. Horne, Mr. J. C. Potter, and Mr. H. Buckland Jones. Anæsthetists: Mr. C. Looseley, Mr. R. Pollard, Mrs. Brady, and Mr. T. W. S. Hills. Dentist: Mr. J. A. Bowes.

Royal Ear Hospital, Dean-street, Soho. (Founded 1816.)—Courses of instruction of a practical character in Diseases of the Ear and Nose are given by the members of the staff throughout the year. Clinical assistants are also appointed. Students may join at any time. For information address the Honorary Secretary of the Medical Board, Royal Ear Hospital, Dean-street, Soho. Surgeons: Mr. M. Yearsley, Mr. Richard Lake, Mr. R. S. Cocke, and Mr. E. A. Peters. Assistant Surgeons: Mr. H. A. Kisch and Mr. J. F. O'Malley. Anæsthetists: Dr. Harold Sington, Dr. H. B. Wilson, Mr. E. W. Gandy, and Mr. W. Howard Jones. Physician and Pathologist: Dr. Julius Bernstein.

St. Peter's Hospital for Stone and other Urinary Diseases, Henrietta-street, Covent Garden. Established 1860. New Hospital opened 1882.—Honorary Surgeons: Mr. F. Swinford Edwards and Mr. P. J. Freyer. Assistant Surgeons: Mr. John Pardoe, Mr. J. W. Thomson Walker, and Mr. J. Swift Jolly. The hospital contains 30 beds for men and 2 beds for women and children. Consultations are held and operations are performed each Wednesday and Friday at 2 p.m. Medical practitioners and students are invited to the clinical instructions which are given in the wards and out-patient department daily, and to the operations in the theatre on Wednesdays and Fridays at 2 p.m. Average beds occupied daily, 30; average out-patients seen daily, 125.

St. Mark's Hospital for Cancer, Fistula, and other Diseases of the Rectum, City-road, E.C. (Founded 1835.)—Honorary Surgeons: Mr. P. Lockhart Mummery, Mr. Aslett Baldwin, and Mr. C. Gordon Watson. Assistant Surgeons: Mr. H. Graeme Anderson and Mr. L. Norbury. The hospital contains 50 beds for men and women. Operations are performed on Mondays, Wednesdays, and Thursdays at 2.30 p.m. Medical practitioners and students are invited to the operations and to the clinical instruction in the wards and in the out-patient department. There is also a course of lectures once a year, generally during the summer session, free to all qualified medical men, particulars of which are announced beforehand. The number of out-patient attendances per year is 7800, and the average number of in-patients 614.

St. John's Hospital for Diseases of the Skin, 49, Leicester-square, W.C. Rebuilt 1905.—The in-patient department, 40 beds, is at 262, Uxbridge-road, W. The out-patient practice is open to the medical profession at the following times: Every day, from 2 to 3.30 p.m., and every evening (except Saturday) 6 to 7.30. At the afternoon clinics specially selected Clinical Demonstrations, also demonstrations on the different diseases presenting themselves in the out-patient department, will be given. The X ray department is in operation on Tuesday, Wednesday, and Thursday afternoons. The Chesterfield Lectures are given by Dr. Morgan Dockrell on Thursdays at 6 p.m., October to March, commencing on Oct. 8th. At the end of the course the Chesterfield medal may be competed for by those who have attended three-fourths of the lectures. Physicians: Dr. Morgan Dockrell, Dr. W. Griffith, Dr. J. L. Bunch, and Dr. Knowsley Sibley. Surgeon: Mr. M. K. Hargreaves. Electro-Therapeutist: Dr. C. R. Kempster. There is a well-equipped laboratory where special courses in Pathology and Bacteriology of the Skin may be arranged for.

London Lock Hospital and Rescue Home.—This institution consists of a hospital for females in the Harrow-road and a hospital for males in Dean-street, Soho. At the latter branch an out-patient department is attached, and both sexes receive treatment. In the female branch there are 145 beds, and 356 patients were admitted in 1913. In the male branch there are 40 beds which during 1913 accommodated 114 patients. 33,074 out-patients were treated. Patients are seen at Dean-street on Mondays from 1 to 2 p.m. and from 6 to 8 p.m.; on Tuesdays and Wednesdays from 6 to 8 p.m.; on Fridays from 2 to 3 p.m. (female patients); and on Saturdays from 2 to 4 p.m. Consulting Surgeons: Mr. Buxton Shillitoe and Mr. J. A. Bloxam. Consulting Ophthalmic Surgeon: Mr. Henry Edward Juler. Physician: Dr. Sidney Phillips. Surgeons: Mr. J. Ernest Lane, Mr. Arthur Shillitoe, and Mr. Charles Gibbs. Surgeons to Out-patients: Mr. Charles Gibbs, Mr. Arthur Shillitoe, Mr. Charles Ryall, Mr. Herbert J. Paterson, and Mr. J. E. R. McDonagh. Pathologist: Mr. A. Fleming. Dental Surgeon: Mr. N. H. Swallow. House Surgeon at the Female Hospital: Mr. J. P. Charles. House Surgeon at the Male Hospital and Out-patients' Department: Mr. Russell Wilkinson.

ENGLISH PROVINCIAL ANCILLARY SCHOOLS AND HOSPITALS.

Under this heading we include all the hospitals which are recognised by the English Royal Colleges for a part of the required attendance on medical and surgical practice, for medical clerkships, and surgical dresserships. The list includes nearly every hospital of a general character in the country having more than 150 beds, though occasionally a large hospital is admitted because equally good opportunities are afforded to students at other institutions in its neighbourhood, while a small hospital may be included because no such facilities for study are present elsewhere. The list is arranged alphabetically as to the town where the hospital is located.

Bath Royal United Hospital, Bath.—This hospital contains 130 beds, and possesses a fine library and museum. Considerable alterations and rearrangements have been carried out in the out-patient department, theatre, and sterilising rooms during the year, and also a complete installation of heating by hot water. Consulting Physician: Dr. A. E. W. Fox. Consulting Surgeons: Mr. R. J. H. Scott, Mr. F. K. Green, and Mr. T. D. Ransford. Physicians: Dr. G. A. Bannatyne, Dr. T. W. Smith, and Dr. E. J. Cave. Assistant Physicians: Dr. G. E. Bowker, Dr. L. H. Walsh, and Dr. R. Waterhouse. Surgeons: Mr. H. G. Terry, Mr. F. Lace, and Mr. F. Fraser. Assistant Surgeons: Mr. W. S. Melsome, Mr. A. L. Fuller, and Mr. W. G. Mumford. Physician to Electrical Department: Dr. P. King. Assistant Physician to Electrical Department: Dr. G. E. Bowker. Pathologist and Curator of Museum: Dr. R. Waterhouse. Anæsthetist: Mr. A. de V. Blathwayt. Assistant Anæsthetist: Dr. Ray Edridge. Dental Surgeons: Mr. W. J. Royal and Mr. S. Carter. Secretary: Mr. J. M. Sheppard. House Surgeon: Mr. C. Popham. House Physician: Dr. J. Lewis.

Bedford County Hospital, Bedford.—This hospital has 100 beds. A new X Ray and Pathological Department has been built, and a steam laundry instituted. Consulting Physician: Dr. G. P. Goldsmith. Consulting Surgeons: Mr. E. C. Sharpin and Mr. R. H. Kinsey. Physicians: Dr. R. Coombs and Dr. W. Phillips. Surgeons: Mr. W. Gifford Nash and Mr. Henry Skelding. Ophthalmic Surgeon: Dr. H. Goldsmith. Assistant Physicians: Dr. A. C. Perram and Dr. G. T. Birks. Assistant Surgeons: Dr. S. J. Ross and Mr. Walter Sharpin. Dental Surgeon: Mr. F. W. Williams. Secretary: Mr. Beauchamp Wadmore.

Bradford Royal Infirmary, Bradford.—This hospital contains 210 beds. The material passing through the Surgical wards consists of major operations, chiefly abdominal, and gynæcological work, and affords excellent facilities for either students or post-graduates. Plans for a new hospital of 382 beds have been adopted, and the building operations will be commenced as soon as the funds in hand will allow. Consulting Physicians: Dr. Reginald G. Alexander, Dr. Herbert C. Major, and Dr. David Goyder. Physicians: Dr. Henry J. Campbell, Mr. Thomas Wilmot, Dr. Richard Honeyburne, Dr. F. W. Eurich, and Mr. W. Mitchell (in charge of Electrical Department). Consulting Surgeon: Mr. Harry Meade. Surgeons: Mr. Charles F. M. Althorp, Dr. Thomas J. Wood, Mr. John B. Hall, and Mr. James Phillips. Consulting Gynæcologist: Dr. A. C. F. Rabagliati. Gynæcologist: Mr. Charles F. M. Althorp. Consulting Laryngologist: Dr. Adolph Bronner. Laryngologist: Dr. Andrew Little. Assistant Surgeons: Mr. Francis W. Goyder and Mr. Peter McEwan. Assistant Physicians: Dr. John B. Dunlop and Dr. William Wrangham. Consulting Dental Surgeon: Mr. Arthur A. Matthews. Dental Surgeon: Mr. H. Alvin Mahony.

The Royal Sussex County Hospital, Brighton (201 beds).—This hospital affords ample facilities for students, possessing a large out-patient department, a library, and a well-appointed clinical research and bacteriological department. The hospital does not take resident pupils, but out-pupils may attend the practice of the hospital for any period not exceeding two years on payment in advance of such a fee, not exceeding 20 guineas, as the Board of Management shall direct. Consulting Physicians: Dr. Rutter, Dr. Hollis, and Dr. Branfoot. Physicians: Dr. J. F. G. Dill, Dr. Hobhouse, and Dr. Maynard. Assistant Physicians: Dr.

W. Broadbent, Dr. D. Hall, and Dr. Bailey. Consulting Surgeons: Mr. N. P. Blaker, Mr. W. Furner, and Mr. T. J. Verrall. Surgeons: Mr. R. F. Jowers, Mr. F. J. Paley, and Mr. A. H. Buck. Assistant Surgeons: Mr. T. H. Ionides, Mr. W. A. Bowring, and Mr. H. N. Fletcher. Honorary Medical Clinical Assistant: Dr. R. Clapham. Honorary Surgical Clinical Assistant: Mr. A. G. Bate. Ophthalmic Surgeon: Mr. W. W. Griffin. Dermatologist: Dr. A. W. Williams. Dental Surgeon: Mr. W. R. Wood. Assistant Dental Surgeon: Mr. T. S. Worboys. Pathologist: Dr. H. N. Galt.

Kent and Canterbury General Hospital, Canterbury.—The hospital contains 91 beds. Pupils of the staff are admitted to the practice of the hospital and have the use of the library of the East Kent and Canterbury Medical Society for £7 7*s.* A Roentgen ray apparatus has recently been given to the hospital. Operation day, Thursday, 11 A.M. Physicians: Dr. Harold Wacher and Dr. M. T. Williams. Consulting Surgeons: Mr. Frank Wacher, Mr. J. Greasley, and Mr. Z. Prentice. Surgeons: Mr. Sidney Wacher, Mr. E. D. Whitehead Reid, and Mr. R. J. Ferguson. Dentist: Mr. R. S. N. Faro. Secretary: Mr. Arthur J. Lancaster.

Derbyshire Royal Infirmary, Derby.—This hospital contains 260 beds. It was founded in 1810, and was entirely rebuilt 1892–1909 on the most modern lines at a cost of over £140,000. There is a separate ophthalmic block of 32 beds, a separate children's block of 34 beds, and a special department for gynæcological cases. There are three resident house surgeons and a resident house physician. There is also a well-equipped Finsen light and X ray department. Registered medical students are admitted to witness the medical and surgical practice on payment of 10 guineas annually. Consulting Physicians: Dr. Charles A. Greaves and Dr. G. Rice. Physicians: Dr. Edmund Vaudrey, Dr. Maurice Parry-Jones, and Dr. Hugh Barber. Consulting Surgeons: Mr. John A. Sharp, Mr. Charles H. Hough, and Mr. John L. Wright. Surgeons: Dr. Richard H. Luce, Mr. John A. Southern, Mr. Francis L. A. Greaves, and Mr. John E. Kilvert. Ophthalmic Surgeon: Mr. Edwin Collier Green. Gynæcologist: Mr. Henry T. Hicks. Anæsthetists: Mr. W. St. A. St. John, Dr. J. D. C. Allen, and Dr. A. D. Hunt. Pathologist: Dr. Hugh Barber. Dental Surgeons: Mr. Charles J. Allin and Mr. J. Montague Murphy.

Royal Devon and Exeter Hospital, Exeter.—Medical and Surgical Staff: Consulting Surgeon: Mr. E. J. Domville. Physicians: Dr. H. Davy and Dr. William Gordon. Surgeons: Mr. J. D. Harris, Mr. Charles E. Bell, and Mr. A. C. Roper. Assistant Surgeon: Mr. Brennan Dyball. Assistant Physician and Pathologist: Mr. Reginald V. Solly. Surgical Registrar and Assistant Pathologist: Mr. Robert Worthington. Surgeon Dentist: Mr. J. M. Ackland. Anæsthetists: Mr. Henry Andrew and Mr. J. Shirley Steele-Perkins. The hospital contains 200 beds (including special children's wards) and has a good library, museum, dissecting room, and post-mortem room. Attendance on the practice of this hospital qualifies for all the examining boards. Arrangements can be made by which students can attend Midwifery on application to the House Surgeon. There is also a Private Nursing Staff attached to the hospital. For particulars as to fees, &c., apply to the Matron. A new wing was added in 1897. Arrangements may be made by which gentlemen in practice desiring to increase their qualifications may have the use of the museum and library and other facilities and by which students may attend midwifery. A new Operating Theatre was opened in 1906 (the gift of Mrs. Nosworthy of Newlands, Dawlish, Devon). An Electrical Treatment Department (the gift of Mrs. M. A. Sanders) was opened in 1907 by Lady Duckworth-King.

West of England Eye Infirmary, Exeter.—Physician: Dr. William Gordon. Surgical Staff: Mr. A. C. Roper and Mr. Ransom Pickard. Assistant Surgeon: Mr. G. P. Hawker. Secretary: Mr. Sidney E. Whitton. The infirmary contains 64 beds. Students of the Exeter Hospital can attend the practice of the Eye Infirmary. Patients for the year ending Michaelmas, 1913, 3262.

The Gloucestershire Royal Infirmary and Eye Institution, Gloucester.—This hospital, which was granted the title of "Royal" on the occasion of King Edward VII.'s visit to Gloucester in the year 1909, has 140 beds. Consulting Surgeons: Mr. T. S. Ellis, Mr. R. M. Cole, Mr. H. E. Waddy, and Mr. E. Dykes Bower. Physicians: Dr. W. W. Grosvenor and Dr. D. E. Finlay. Assistant Physician: Dr. H. Cairns Terry. Surgeons: Mr. W. Washbourn, Mr. G. W. Ancrum, and Mr. C. V. Knight. Ophthalmic Surgeon: Mr. E. Dykes Bower. Assistant Surgeon: Mr. A. Alcock. Secretary: Mr. H. P. Pike. In-patients, 1526; out-patients, 8138.

North Staffordshire Infirmary, Hartshill, Stoke-on-Trent.—The New Infirmary, opened in 1869, is built on the pavilion plan, has accommodation for about 240 patients, including Children's wards, and a special department for the treatment of Diseases of the Eye, a special X Ray and Electrical Department, and a special department for the treatment of Diseases of the Ear, Nose, and Throat, so that there are excellent facilities for acquiring a practical knowledge of the profession. During the last four years the sum of £30,000 has been spent on new buildings and alterations. A new Out-patient Department, costing £12,000, a new Children's Ward of 30 beds, and a new Pathological Department are amongst the structural improvements already completed. Further alterations and additions will follow, a second large Operation Theatre is in course of erection, and the whole institution will shortly be equipped in a thoroughly up-to-date manner. Physicians: Dr. S. King Alcock, Dr. H. Nicholls, and Dr. J. Russell. Surgeons: Dr. Wheelton Hind, Mr. Reginald Alcock, and Dr. W. C. Allardice. Assistant Physicians: Dr. W. E. L. Horner, Dr. G. H. Sowry, and Dr. E. C. Myott. Assistant Surgeons: Dr. Harold Hartley, Mr. Eric E. Young, and Dr. W. Webster. Consulting Ophthalmic Surgeon: Mr. H. H. Folker. Ophthalmic Surgeon: Mr. R. H. Dickson. Assistant Ophthalmic Surgeon: Mr. S. McMurray. Medical Officers in charge of the Electrical Department: Dr. G. H. List and Dr. A. H. John. Surgeon in charge of Ear, Nose, and Throat Department: Mr. G. A. Carter. Dental Surgeon: Mr. J. D. Skae. Secretary and House Governor: T. Basil Rhodes, M.B., B.S.

Hull Royal Infirmary, Hull.—This hospital contains 244 beds. Consulting Physician: Dr. Edward O. Daley. Consulting Surgeons: Sir John Sherburn, Mr. Thomas M. Evans, and Mr. Robert H. B. Nicholson, Consulting Ophthalmic Surgeon: Dr. W. O. Rockliffe. Physicians: Dr. Frank Nicholson, Dr. Frank C. Eve, and Dr. Edward Turton. Surgeons: Mr. Edmund H. Howlett, Mr. Alfred G. Francis, Mr. Henry W. Pigeon, and Mr. Edward Harrison. Ophthalmic Surgeon: Dr. Duncan Mackay. Assistant Ophthalmic Surgeon: Mr. William Bainbridge. Assistant Surgeons: Mr. Harold Upcott, Mr. Edward M. Hainworth, Mr. Robert Grieve, and Mr. Guy B. Nicholson. Dental Surgeon: Mr. Arthur W. Turton. Assistant Dental Surgeon: Mr. Stanley R. Storey. Anæsthetists: Mr. Harry L. Evans and Dr. Arthur T. Sissons.

Leicester Royal Infirmary, Leicester.—Instruction in the infirmary for first-year students is duly recognised by the various examining bodies. At the General Infirmary there are 230 beds, and at the Children's Hospital in connexion 70; total 300. A new wing containing 100 beds was recently opened by H.R.H. the Duchess of Argyll, and a new Nurses' Home containing separate accommodation for 100 nurses has also been opened. A reconstruction scheme has been carried out, and £120,000 spent on bringing the accommodation of the institution to a modern standard of efficiency. This scheme has included the provision of two modern operating theatres, as well as a self-contained out-patients' department. The Children's Hospital has been reconstructed and enlarged by the addition of a third ward at a cost of £14,500. Open-air balconies on all three floors are a feature. A central sterilising department has been provided. There are eight resident medical officers—viz., two house surgeons, one house physician, two assistant house surgeons, one assistant house physician, and two dressers. All receive salaries. The dressers are given an honorarium of £10 10*s.* on completion of six months' satisfactory service. Consulting Surgeons: Mr. George C. Franklin, Mr. Claude Douglas, and Mr. C. J. Bond. Physicians: Dr. Reginald Pratt, Dr. Astley V. Clarke, and Dr. Robert Sevestre. Surgeons: Mr. Henry J. Blakesley, Mr. Cecil E. Marriott, Mr. J. S. Sloane, and Mr. F. Bolton Carter. Ophthalmic Surgeon: Mr. Nicholas C. Ridley. Aural Surgeon: Dr. Frederick W. Bennett. Physicians to Out-patients: Dr. T. Villiers Crosby and Dr. T. Arnold Johnston (Honorary Pathologist). Surgeons to Out-patients: Mr. W. I. Cumberlidge and Mr. T. C. Clare. House Governor and Secretary: Mr. Harry Johnson.

Northampton General Hospital, Northampton.—Two new wings were opened in 1904 and the old buildings entirely renovated and re-arranged. The number of beds is 182. Non-resident pupils are received and have every opportunity of acquiring a practical knowledge of their profession. The fee is £10 10*s.* Pupils can be received at any time. Physicians: Dr. Peverel S. Hichens and Dr. W. M. Robson. Surgeons: Mr. George H. Percival and Dr. R. A. Milligan. Ophthalmic Surgeon: Mr. E. Harries Jones. Assistant Surgeon: Mr. N. Blake Odgers. Dental Surgeon: Mr. E. Rogers Bull.

Norfolk and Norwich Hospital, Norwich.—This hospital has 230 beds. Non-resident pupils admitted. Fees: For three months, £3 3*s.*; for six months, £5 5*s.*; as permanent pupil, £8 8*s.* Consulting Physician: Sir P. Eade. Consulting Surgeons: Dr. Beverley and Mr. H. S. Robinson. Physicians: Dr. Barton, Dr. Burton-Fanning, and Dr. Long. Surgeons: Mr. S. H. Burton, Mr. D. D. Day, and Mr. H. A. Ballance. Assistant Physician: Dr. A. J. Cleveland. Assistant Surgeons: Mr. E. W. Everett, Mr. A. J. Blaxland, and Mr. J. Burfield. Dental Surgeon: Mr. H. F. White. Electro-Therapeutist: Dr. A. J. Cleveland. Secretary: Mr. F. G. Hazell.

Nottingham General Hospital.—This hospital contains 254 beds. Consulting Physician: Dr. Henry Handford. Physicians: Dr. Charles H. Cattle, Dr. Frank H. Jacob, and Dr. William T. Rowe. Assistant Physicians: Dr. James C. Buckley and Dr. H. Smith Wallace. Consulting Surgeons: Mr. Rupert C. Chicken, Mr. Joseph Thompson, and Mr. H. Owen Taylor. Surgeons: Mr. Alexander R. Anderson, Mr. Robert G. Hogarth, Mr. W. Morley Willis, and Mr. Charles H. Allen. Assistant Surgeons: Mr. Alexander Robert Tweedie and Mr. H. Bell Tawse. Dental Surgeon: Mr. John Battersby.

South Devon and East Cornwall Hospital, Plymouth.—This hospital contains 175 beds. A second operation theatre has been recently added. Consulting Physician: Dr. R. H. Clay. Physicians: Dr. E. L. Fox and Dr. A. B. Soltau. Consulting Surgeons: Mr. P. Swain and Mr. R. H. Lucy. Surgeons: Mr. W. L. Woollcombe, Mr. H. W. Webber, and Mr. G. F. Aldous. Assistant Physician: Dr. Colin D. Lindsey. Assistant Surgeons: Mr. W. Crosbie Hamilton, Mr. G. C. F. Robinson, and Mr. H. G. Pinker. Physician in charge of X Ray and Finsen Light Department: Dr. W. Cheyne Wilson. Anæsthetists: Mr. C. H. Whiteford and Mr. E. G. Smith. Registrar and Out-patient Anæsthetist: Mr. G. S. Earl. Registrar and Emergency Anæsthetist: Mr. W. L. Hodge. Dental Surgeon: Mr. A. N. Balkwill. Pathologist: Dr. W. L. Pethybridge.

The Royal Hospital, Portsmouth (founded 1847).—The number of beds is 160. The hospital has X Ray and Massage Departments. Honorary Physicians: Dr. John Phillips and Dr. W. P. McEldowney. Surgeons: Mr. C. P. Childe, Mr. T. A. M. Forde, and Mr. A. B. Wright. Honorary Anæsthetist: Dr. W. J. Essery. Honorary Assistant Physicians: Dr. J. T. Leon, Dr. E. J. Davis Taylor, and Dr. H. Farncombe. Honorary Assistant Surgeons: Mr. L. Cole Baker, Mr. C. A. Scott Ridout, and Mr. H. Burrows. The hospital is a preparatory School of Medicine and Surgery; the attendance of pupils at this hospital is recognised by the Examining Boards. Particulars of the Secretary at the hospital.

Royal Berkshire Hospital, Reading.—This hospital, which contains 188 beds, has been recently enlarged, the additions including a new Out-patient Department, a Casualty Department, an X Ray Department, a Laboratory, an Eye Theatre, and Eye Wards. Consulting Surgeons: Mr. J. H. Walters and Mr. J. A. P. Price. Physicians: Dr. W. T. Freeman and Dr. G. S. Abram. Assistant Physicians: Dr. G. F. Murrell and Dr. G. O. Lambert. Surgeons: Mr. W. J. Maurice and Mr. L. M. Guilding. Assistant Surgeons: Mr. W. J. Foster and Mr. W. B. Secretan. Aural Surgeon: Mr. A. Roberts. Ophthalmic Surgeon: Mr. R. P. Brooks. Anæsthetist: Mr. R. Ritson. Consulting Dental Surgeon: Mr. A. L. Goadby. Pathologist: Dr. R. Donaldson. Medical Registrar, Dr. H. M. Clarke. Surgical Registrar, Mr. J. L. Joyce. Clinical Assistants in the Ophthalmic Department, Mr. C. B Baxter, Mr. R. H. Cotton, and Mr. F. H. P. Wills. Clinical Assistant in the Aural Department, Mr. L. Powell.

Salisbury General Infirmary, Salisbury.—This hospital contains 120 beds. Consulting Physician: Dr. G. G. Morrice. Consulting Surgeon: Mr. L. S. Luckham. Physicians: Dr. W. W. Ord and Mr. J. E. Gordon. Surgeons: Dr. C. G. B. Kempe and Dr. E. T. Fison. Assistant Surgeons: Mr. J. Armitage and Mr. T. B. Henderson. Physician in charge of the X Ray Department: Dr. G. E. Thornton. Ophthalmic Surgeon: Mr. P. C. Bardsley. Surgeon Dentist: Mr. F. Gordon. Secretary: Mr. S. B. Smith. In-patients, 95 weekly average; out-patients, 1890, including dental cases 579, ophthalmic cases 452, and X ray cases 352; attendances on casuals, 2043. Assistant Secretary: Mr. G. F. Henbest.

Royal Salop Infirmary, Shrewsbury.—This hospital has 130 beds. Consulting Physicians: Dr. E. Burd, Mr. R. W. O. Withers, Dr. E. Lycett Burd, and Dr. E. Cureton. Physicians: Dr. H. W. Gardner and Dr. R. H. Urwick. Consulting Surgeon: Mr. W. Eddowes. Surgeons: Mr. A. Jackson, Mr. H. H. B. MacLeod, and Mr. L. J. Godson. Ophthalmic Surgeon: Mr. C. G. Russ Wood. Pathologist: Dr. F. A. Anderson. Radiographer: Mr. W. S. Edmond. Dental Surgeon: Mr. W. E. Harding. Honorary Health Officer: Mr. James Wheatley. Secretary: Mr. Joseph Jenks, F.C.R.A. In-patients, 1193; out-patients, 1190; out-patients' attendances for the year, 20,217.

Royal South Hants and Southampton Hospital, Southampton.—This hospital contains 130 beds. Physicians: Dr. N. E. Aldridge and Dr. H. P. Ward. Assistant Physicians: Dr. J. H. P. Fraser, Dr. B. N. Tebbs, and Dr. H. J. Nightingale. Surgeons Extraordinary: Mr. W. Sims and Mr. A. B. Wade. Surgeons: Mr. H. W. Shettle, Mr. J. R. Keele, and Mr. W. P. Purvis. Assistant Surgeon: Mr. G. H. Cowen. Throat and Ear Surgeon: Mr. W. P. Purvis. Dental Surgeons: Mr. E. G. Robertson and Mr. H. B. Neely. Electro-Therapeutic Department: Dr. N. E. Aldridge. Secretary: Mr. T. A. Fisher Hall. In-patients, 2362; out-patients, 10,419. The new out-patients' building has been completed at a cost of £11,000, the gift of Miss Burrell in memory of her brother.

Staffordshire General Infirmary, Stafford.—This hospital has 77 beds. Honorary Consulting Physician: Dr. G. Reid. Physicians: Dr. C. Reid and Dr. L. Gray. Surgeons: Mr. F. M. Blumer and Mr. F. H. Marson. Assistant Honorary Surgeon: Mr. F. N. Cookson. Ophthalmic Surgeon: Mr. A. B. Cridland. Surgeon Dentist: Mr. W. H. Ridge. Secretary: Mr. R. Battle. In-patients, 882; out-patients, 3140.

Royal Hants County Hospital, Winchester.—This hospital has 108 beds. Honorary Consulting Physicians: Dr. W. M. Harman and Dr. H. E. Wingfield. Physicians: Dr. G. F. A. England, Dr. A. E. Bodington, and Dr. G. A. Tullis. Surgeons: Mr. H. J. Godwin, Mr. F. J. Child, and Mr. G. A. Roberts. Honorary Ophthalmic Surgeon: Mr. A. Zorab. Honorary Dental Surgeon: Mr. L. M. Balding. Honorary Medical Officer in charge of the X Ray Department: Dr. Norman Aldridge. Secretary: Mr. A. D. White.

Wolverhampton and Staffordshire General Hospital, Wolverhampton.—There are 209 beds. Special departments for Children, Gynæcology, Ear, Throat, and Nose Diseases, Electro-therapeutic and X ray departments. There is an excellent library. The resident officers are a resident medical officer and three house surgeons. Consulting Surgeon: Mr. W. H. T. Winter. Physicians: Dr. H. Malet and Dr. J. A. Codd. Surgeons: Mr. E. Deanesly, Mr. A. H. Hunt, Mr. W. F. Cholmeley, and Mr. Howard Dent. Assistant Physicians: Dr. A. H. Carter, Dr. E. H. Coleman, and Dr. T. H. Galbraith. Assistant Surgeon: Mr. C. A. Stidston. Anæsthetists: Dr. E. W. Strange, Mr. David Mann, Dr. F. A. Armitage, and Dr. J. N. McTurk. Pupils are allowed to witness the whole of the practice of the hospital and to be present at operations and have every opportunity of acquiring a practical knowledge of their profession. Fees: £3 3*s.* a quarter, £10 10*s.* the first year, and £5 5*s.* subsequent years. A course of Practical Pharmacy is given by the dispenser. Fee £3 3*s.* for three months. Applications should be made to the Secretary of the Medical Committee.

Worcester General Infirmary, Worcester.—This hospital has 132 beds (temporarily reduced to 70). Pupils are taken by members of the Honorary Medical and Surgical Staff. Number of operations last year 1142. New X Ray and Electrical Departments have been recently erected and are now in use. Additional accommodation for the Honorary Staff and Out-patients and also an Outdoor Shelter in connexion with the Children's Ward have been built as a memorial to King Edward VII. Consulting Physician: Dr. M. Read. Physicians: Dr. G. W. Crowe, Dr. H. A. Watson, and Dr. Neville Crowe. Consulting Surgeons: Mr. G. E. Hyde and Mr. T. Bates. Surgeons: Mr. T. P. Gostling, Mr. C. Pollard, and Mr. T. Bates, jun. Secretary: Mr. W. Stallard. In-patients, 1259; out-patients, 4547.

YORK COUNTY HOSPITAL, York.—This hospital contains 150 beds. There are balconies for outdoor treatment and two installations of X Rayapparatus. Consulting Physicians: Dr. Richard Petch and Dr. Richard Turner, Physicians: Dr. William A. Evelyn, Dr. J. S. Gayner, and Dr. G. W. Micklethwait. Consulting Surgeons: Mr. Frederick Shann and Mr. William H. Jalland. Surgeons: Mr. G. Wilfred Gostling, Dr. Noel L. Hood, Mr. Gerald S. Hughes, and Mr. W. Paynter Noall. Ophthalmic Surgeon: Dr. Peter Macdonald. Assistant Ophthalmic Surgeon: Dr. M. D. Ferguson. Electro-therapeutic Department: Dr. Hinton E. Bateman and Dr. J. G. Craig. Anæsthetist: Mr. Robert Fell. Assistant Anæsthetist: Dr. Stanley Upton. Consulting Dental Surgeon: Mr. Walter Glaisby. Dental Surgeon: Mr. Leonard A. Glaisby.

II.—SCOTLAND.

THE UNIVERSITIES.

UNIVERSITY OF EDINBURGH.

Four Degrees in Medicine and Surgery are conferred by the University of Edinburgh—viz., Bachelor of Medicine (M.B.), Bachelor of Surgery (Ch.B), Doctor of Medicine (M.D), and Master of Surgery (Ch.M.). The degree of Bachelor of Surgery cannot be conferred on any person who does not at the same time obtain the degree of Bachelor of Medicine, and similarly the degree of Bachelor of Medicine is not conferred on any person who does not at the same time obtain the degree of Bachelor of Surgery.

A diploma in Tropical Medicine and Hygiene (D.T.M. and H.) is granted to graduates in Medicine and Surgery of the University of not less than six months' standing, and to Registered Medical Practitioners who, having resided in a tropical country, may be approved by the Senatus, on the recommendation of the Faculty of Medicine. The course of study includes (1) Practical Bacteriology; (2) Diseases of Tropical Climates; (3) Tropical Hygiene; (4) a Practical Course in Medical Entomology and Protozoology and Venomous Animals; and (5) a Course of Clinical Instruction in Tropical Diseases. Any two of these courses may be taken under Extra-academical Teachers, and exemption from the latter course may be granted to those graduates who have been engaged for a period of at least 12 months in the treatment of Tropical Diseases in any tropical or subtropical country. The examinations for the diploma, which will embrace all the foregoing subjects, are held in December and July of each year.

Before commencing his medical studies each student must pass a preliminary examination in (1) English, (2) Latin, (3) Elementary Mathematics, and (4) Greek or French or German: provided always that, in the case of a candidate whose native language is not English, an examination in the native language of the candidate may be substituted for one in either French or German, and an examination in any other classical language for one in Latin.

No one is admitted to the degrees of *Bachelor of Medicine* and *Bachelor of Surgery* who has not been engaged in Medical and Surgical study for five years. No course of lectures will be allowed to qualify unless the lecturer certifies that it has embraced at least 100 lectures, or 50 lectures, as may be required by the regulations, and that the student has also duly performed the work of the class.

Candidates for the degrees of M.B. and Ch.B. must have attended for at least three academic years the medical and surgical practice either of the Royal Infirmary, Edinburgh, or of a general hospital elsewhere which accommodates not fewer than 80 patients and possesses a distinct staff of physicians and surgeons. They must have attended Clinical Surgery during a course or courses extending over not less than nine months. These courses may be conducted by the professor of clinical surgery, or by professors or lecturers appointed for the purpose by the University Court, or by the ordinary surgeons of the Royal Infirmary, Edinburgh, or of a general hospital defined and recognised as hereinbefore provided, and shall consist of regular instruction at the bedside, along with clinical lectures. A similar course of clinical medicine during a course or courses extending over not less than nine months is required. The candidate must have attended a course of instruction in Mental Diseases given by the University Lecturer, or by a recognised Teacher, consisting of not less than six Class-room meetings for lectures and demonstrations and ten meetings in the Wards of a recognised Asylum for the insane. The candidate must have attended a course of 25 meetings on Practical Pharmacy in a university or recognised school of medicine, or have dispensed drugs for a period of three months in a hospital or dispensary, or in an establishment recognised by the Pharmaceutical Society. The candidate must have attended for at least six months, by apprenticeship or otherwise, the out-practice of a hospital, or the practice of a dispensary, or of a physician or surgeon, or of a member of the London or Dublin Society of Apothecaries. He must have acted as clerk in the medical wards and dresser in the surgical wards of a public hospital for a period of six months in each case; and must also have availed himself, to such an extent as may be required by the Senatus, with the approval of the University Court, of opportunities of studying at a hospital or dispensary, Post-mortem Examinations, Fevers, Diseases of the Eye, Operative Surgery, Practical Anæsthetics, Diseases of Children, Diseases of the Larynx, Ear, and Nose, and Diseases of the Skin, or such other special departments as may from time to time be determined. The candidate must have personally conducted, under the superintendence of a registered medical practitioner, 20 cases of labour, or such additional number as the Senatus, with the sanction of the University Court, may from time to time determine; or have attended for three months the practice of a lying-in hospital, or of the maternity department of a general hospital or other public charitable institution and have conducted personally 12 or such an additional number of cases of labour as the Senatus, with the approval of the University Court, may from time to time determine. The candidate must have been properly instructed in Vaccination at a public vaccination station, by a public vaccinator, authorised by the proper Government authority to grant certificates of proficiency in vaccination.

With respect to the places and institutions at which the studies of the candidate may be prosecuted the following regulations have effect:—Two of the five years of medical study must be spent in the University of Edinburgh. The remaining three years may be spent in any University of the United Kingdom, or in any Indian, Colonial, or Foreign university recognised for the purpose by the University Court, or in such medical schools or under such teachers as may be recognised for the purpose by the University Court. Of the subjects of study, 16 in number—viz., Anatomy, Practical Anatomy, Chemistry, Practical Chemistry, Materia Medica, Physiology, Practical Physiology, Practice of Medicine, Surgery, Midwifery and Diseases of Women, Pathology, Practical Pathology, Physics, Botany, Zoology, Medical Jurisprudence, and Public Health—not less than eight must be taken in the University of Edinburgh, which corresponds to the two years above referred to.

Women are admitted to graduation in medicine under practically the same conditions as men, excepting that, until provision is made in the University for instruction of women in all subjects of the medical curriculum, the regulations as to places of study contained in the foregoing paragraph do not apply to them. Women who study in Edinburgh receive their instruction from recognised Extra-Academical Teachers, who are Lecturers in the School of Medicine for Women, Surgeons' Hall.

Each candidate is examined, both in writing and orally, and clinically where the nature of the subject admits:—First, in Chemistry, Zoology, Botany, and Physics; second, in Anatomy and Physiology; third, in Materia Medica and Therapeutics and Pathology; and fourth, in Surgery, Medicine, Midwifery, Forensic Medicine, and Public Health, and clinically in Medicine, Surgery, and Gynæcology in a hospital. The examinations are conducted, as far as possible, by demonstrations of objects placed before the candidates. Candidates who profess themselves ready to submit to an examination in the first division of these subjects may be admitted to examination therein at the first period of examination after they have completed their attendance on the necessary classes.

The Senatus, with the approval of the University Court, have power, in the case of a candidate who at any other Scottish University has attended a qualifying course of instruction and passed the corresponding examination in any of the subjects comprised in the first division, to determine that such examination shall be accepted as equivalent in whole or in part to the corresponding examination of the University of Edinburgh.

In the case of a candidate who has, at the University of Edinburgh, or at any University of the United Kingdom, or at any other University specially recognised for the purpose by the University Court, completed a course of instruction and passed an examination in Chemistry, Physics, Botany, Zoology, or in Biology (including therein Botany and Zoology), qualifying for a Degree in Science or in Arts, the Senatus has power to exempt him from passing the examination in the corresponding subject or subjects comprised in the first division.

Candidates who have passed the examinations in the subjects comprised in the first division may be admitted to examination in the subjects of the second division after the end of the sixth term of Medical study.

Candidates who have passed the examinations in the subjects comprised in the second division may be admitted to examination in the subjects of the third division after the end of the ninth term of Medical study.

Candidates who have passed the examinations in the subjects comprised in the third division may be admitted to examinations in the subjects of the fourth or final division at such time and under such conditions as the Senatus, with the approval of the University Court, shall determine: Provided always that no candidate shall be admitted to the final examinations in Medicine, Surgery, and Midwifery, prior to the fifteenth term of Medical study.

The fee to be paid for the degrees of Bachelor of Medicine and Bachelor of Surgery is £23 2*s*., and the proportion of this sum to be paid by a candidate at each division of the examination shall be as follows—viz.: For the First Division of the Examination (Botany, Zoology, Physics, and Chemistry), £6 6*s*.; for the Second Division (Anatomy and Physiology), £5 5*s*.; for the Third Division (Pathology and Materia Medica and Therapeutics), £4 4*s*.; and for the Final Division (Surgery and Clinical Surgery, Medicine and Clinical Medicine, Midwifery, Clinical Gynæcology, and Forensic Medicine and Public Health), £7 7*s*.

Bachelors of Medicine and *Bachelors of Surgery* may proceed to the degrees of *Doctor of Medicine* and *Master of Surgery* after they have spent one year in the medical or surgical wards respectively of a hospital, or the Military or Naval Medical Services, or in scientific work bearing directly on their profession, or two years in practice. In each case an examination must be passed and a thesis submitted for approval of the Faculty. The fee to be paid for the degree of M.D. is £15 15*s*., and the fee to be paid for the degree of Ch.M. is £15 15*s*.

Diploma in Psychiatry.—Courses of instruction have also been instituted for a Diploma in Psychiatry, open to all legally qualified Medical Practitioners who conform with the Regulations. There shall be two examinations for the Diploma, the first comprising the subjects of Anatomy of the Nervous System; Physiology, Histology, and Chemistry of the Nervous System; Pathology of the Brain and Nervous System; and Practical Bacteriology in its relation to Mental Diseases; and the second examination comprising the subjects of Psychology with Experimental Psychology, Clinical Neurology, and Psychiatry (systematic and clinical). The fee for each examination shall be £5 5*s*.

Professors—Chemistry: James Walker, D.Sc., F.R.S. Zoology: J. Cossar Ewart, M.D. Botany: I. Bayley Balfour, M.D. Physiology: Sir E. A. Schäfer, F.R.S. Anatomy: Arthur Robinson, M.D. Pathology: James Lorrain Smith, M.D. Materia Medica: Sir Thomas R. Fraser, M.D., F.R.S. Forensic Medicine: Harvey Littlejohn, M.B., F.R.C.S.E. Public Health: C. Hunter Stewart, M.B., D.Sc. Midwifery: Sir John Halliday Croom, M.D. Surgery: Alexis Thomson, M.D., F.R.C.S.E. Medicine: John Wyllie, M.D. Clinical Surgery: F. M. Caird, M.B., F.R.C.S. Clinical Medicine: Sir Thomas R. Fraser, M.D., J. Wyllie, M.D., and William Russell, M.D.

Scholarships and Prizes.—In the University of Edinburgh many bursaries, scholarships, prizes, &c., are given, some of which, by the nature of the subject or by the conditions attached, are restricted to Medical Students, while others are open to Students in two or more Faculties, of which Medicine may be one. In the following list the money value, the subjects of examination, or other system of selection, and any special conditions that may be imposed, are placed in that order. As "continued study" is a condition in a considerable proportion of the cases it has not been thought necessary to repeat these words.

For Students entering on or in their First Year.—Sibbald Bursaries for entrants, one or two annually, tenable for three years, each £30 per annum, Preliminary Subjects; Heriot Bursaries for entrants, seven for men and one for women annually, tenable for three years, each £30 per annum, Preliminary Subjects; Thomson Bursary, £25 per annum, tenable for four years, Distinction in Medical Preliminary Examination; Grierson Bursary No. 1, £20, Distinction in Medical Preliminary Examination; Crichton Bursaries, two annually, tenable for four years, each £50 per annum, Distinction in Medical Preliminary Examination with extra subjects, birth in Scotland; Mackie Bursary No. 1, tenable for two years, £30 per annum, vote of Faculty, need of pecuniary aid; Junior J. A. Carlyle Bursary, £28, Class Examinations in Anatomy and Chemistry; Coldstream Memorial Scholarship for intending Medical Missionaries, tenable for five years, £25 per annum; three Vans Dunlop Scholarships, Nos. 1, 2, and 3, each tenable for three years, £100 per annum, one for first place in Medical Preliminary Examination, one for Chemistry and Physics, one for Botany and Zoology; Thomson Scholarship, tenable for four years, £40 per annum, Botany, Zoology, and Mechanics; Whiteside-Bruce Bursary, about £44, tenable for one year. Class Examinations in First Professional Subjects.

For Students entering on or in their Second Year.—Mackie Bursary No. 2, tenable for two years, £30 per annum, vote of Faculty, need of pecuniary aid; Grierson Bursary No. 2, £20, Chemistry, Botany, Zoology, and Physics; Senior J. A. Carlyle Bursary, £28, Class Examinations in Anatomy and Physiology; Sibbald Scholarship, tenable for three years, £40 per annum, Chemistry, Botany, Zoology, and Physics; Neil Arnott Prize, £37 10*s*., Distinction in Natural Philosophy in the M.A. Examination.

For Students entering on or in their Third Year.—Grierson Bursary No. 3, £20, Anatomy and Physiology. Vans Dunlop Scholarships Nos. 4 and 5, tenable for three years, £100 per annum, one in Physiology and one in Anatomy.

For Students entering on their Fourth or Fifth Year or for Graduates.—Syme Surgical Fellowship, tenable for two years, £100 per annum, Thesis by M.B. of not more than three years' standing; Goodsir Memorial Fellowship, tenable for two years, £100 per annum, Thesis by M.B., &c., of not more than three years' standing; Leckie Mactier Fellowship, tenable for three years, £80 per annum, competition among M.B.'s of not more than three years' standing; Freeland Barbour Fellowship, £100, highest marks in Anatomy, Physiology, and Pathology in Professional Examinations, with one year's research in Midwifery as a condition; Allan Fellowship, about £55, Clinical Medicine and Clinical Surgery; three Vans Dunlop Scholarships, Nos. 6, 7, and 8, tenable for three years, £100 per annum, one in Pathology and Surgery, one in Materia Medica and Medicine, and one in Forensic Medicine, Public Health, and Midwifery; Murchison Memorial Scholarship, interest on £1000, Clinical Medicine; Stark Scholarship, £112, Clinical Medicine, with Research in Clinical Medicine as a condition; Buchanan Scholarship, £40, Midwifery and Gynæcology, with work in gynæcological ward as a condition; James Scott Scholarship, £32 10*s*., Midwifery, with work in maternity hospital as a condition; Ettles Scholarship for the most distinguished M.B., Ch.B. of the year, £31; Crichton Research Scholarships in Anatomy, Physiology, Materia Medica, and Pathology, tenable for one, two, or three years, £100 each per annum, competition among graduates; Mouat Scholarship, £55 and medal, Class and Degree Examinations in Practice of Physic; two Grierson Bursaries, Nos. 4 and 5, £10 each, one in Materia Medica and one in Pathology; McCosh Graduate's Bursary and McCosh Medical Bursary for Research, income of £5500, Distinction in Professional Subjects and Knowledge of Foreign Languages, with the condition of Study or Research in Medical Schools of Europe;

Gunning Victoria Jubilee Prizes, four awarded annually, each £50, Thesis or Original Research in Anatomy, Physiology, Zoology, Botany, Chemistry, Materia Medica, Surgery, Practice of Physic, Pathology, Obstetrics, Medical Jurisprudence, and Public Health respectively; Theses Gold Medals for the best Theses for the M.D. and Ch.M. degrees; Conan Doyle Prize for the most distinguished Graduate of the year from South Africa, £32; Wightman Prize, £12, Clinical Reports on Medical Cases; Beaney Prize, £32 10*s.*, highest marks in Anatomy, Surgery, and Clinical Surgery, in M.B. and Ch.B. Examinations; Annandale Gold Medal awarded to the best candidate in Clinical Surgery for the degrees of M.B., Ch.B.; Ellis Prize, £28, Essay on Animal or Vegetable Physiology; Cameron Prize, for the most valuable addition to Practical Therapeutics during the preceding five years, annual proceeds of £2000; Milner Fothergill Gold Medal, about £20, Essay on Pharmacological or Therapeutic subject; Mackay Smith Scholarship for Students in Chemistry, tenable for two years, £25 per annum; Houldsworth Scholarship for Students or Graduates, £40, Materia Medica, with the condition of Research in Pharmacology; Mackenzie Bursaries, two annually, £20, Practical Anatomy; Pattison Prize, about £11 7*s.* 6*d.*, Clinical Reports of Surgical Cases; Dobbie Smith Gold Medal for a Botanical Essay; Anderson Henry Prize for a Botanical Essay, proceeds of £300 accumulated for three years; Cunningham Memorial Medal to the most distinguished Student of Anatomy; Wellcome Gold Medal and £10 and Wellcome Silver Medal and £5 for best essays on History of Medicine; Straits Settlements Gold Medal for best Thesis on Tropical Subject during a period of three years; Dorothy Gilfillan Memorial Prize for the most distinguished Woman Graduate of the year, about £10.

SCHOOL OF MEDICINE OF THE ROYAL COLLEGES, Edinburgh.—The number of students varies much in the classes and subjects. It is within the limit to say that about 1000 students avail themselves each session of the opportunity of attending the school. The lectures qualify for the University of Edinburgh and other Universities, the Royal Colleges of Physicians and Surgeons of London, Edinburgh, and Dublin, the Faculty of Physicians and Surgeons of Glasgow, and other Medical and Surgical and Public Boards. A post-graduate vacation course will be held during August and September.

The anatomy rooms and laboratories will open on Thursday, Oct. 1st, and the lectures will commence on Oct. 6th.

In accordance with the statutes of the University of Edinburgh one-half of the qualifying classes required for graduation may be attended in this school, including the classes of Clinical Medicine and Clinical Surgery. The regulations require that the fee for any class taken for graduation in Edinburgh shall be the same as that for the corresponding class in the University. The whole education required for graduation at the University of London may be taken in this school.

The appointment of Resident Physician to the wards in the Royal Infirmary under the care of the Ordinary Physicians is open to those members of their clinical class who have held the office of clerk in their wards for at least six months. Six Residentships are appointed for a period of six months each. Resident Surgeons are also appointed by the Ordinary Surgeons to the Hospital. In all respects the students are taught under regulations similar to those at the University of Edinburgh and the other Universities of Scotland, and they receive similar certificates at the close of each session. Moreover, the University and College authorities in Edinburgh and the Governing Board of the School call upon each recognised lecturer to supply them at the close of each session with a statement giving the number of students attending the class, the number of lectures or prelections delivered during the session, the class examinations held, and the general mode of conducting the class. The courses on special non-qualifying subjects have for the last quarter of a century formed a marked feature of the school. Indeed, such medical subjects could be studied in Edinburgh only in this school until lately, when the University of Edinburgh appointed from the school lecturers on Diseases of the Eye, Insanity, and Diseases of Children to take charge of classes intra-murally. A list of the classes and lecturers will be found below. Special courses of instruction for dental students and for women are also included in the curriculum of this school. The classes of the school are conducted in several separate buildings, such as at Surgeons' Hall, Nicolson-square, and the New School, Bristo-street.

Lecturers and Fees.—Winter Session: Anatomy, Practical Anatomy, and Demonstrations, Dr. Ryland Whitaker (£3 5*s.* and £4 4*s.*); Chemistry (Practical, &c.), Mr. Gemmell and Dr. T. W. Drinkwater*; Physiology (Institutes of Medicine), Dr. Alex. Goodall (£3 5*s.*); General Pathology, &c., Dr. James Miller (£3 5*s.*); Biology, Mr. Malcolm Laurie and Mr. C. R Whittaker (£3 5*s.*); Zoology, Mr. Malcolm Laurie and Mr. H. Miller†; Physics, Dr. Dawson Turner and Mr. A. McKendrick (£3 3*s.*); Meteorology, Dr. Dawson Turner (£2 2*s.*); Bacteriology, Dr. Taylor Grant and Dr. James Miller; Practice of Physic, Dr. R. A. Fleming, Dr. G. L. Gulland, Dr. E. Bramwell, and Dr. A. Dingwall Fordyce (£3 5*s.*); Surgery, Mr. Scot Skirving, Mr. Chiene, Mr. H. Wade, Mr. J. W. Struthers, Mr. W. J. Stuart, and Mr. L. Beesly (£3 5*s.*); Materia Medica, &c., Dr. Craig and Dr. J. Orr† (£3 5*s.*); Midwifery, &c., Dr. Hart, Dr. Ballantyne, Dr. Haig Ferguson, Dr. Fordyce, Dr. Elsie Inglis, Dr. McGibbon, Dr. Barbour Simpson, and Dr. Davidson (£3 5*s.*); Medical Jurisprudence, &c., Dr. Aitchison Robertson (£3 5*s.*); Public Health, Dr. W. Robertson (£2 2*s.*); Hospital Practice (Edinburgh Royal Infirmary): Physicians, Sir R. W. Philip, Dr. Lovell Gulland, Dr. Graham Brown, Dr. F. D. Boyd, and Dr. Brewis for Gynæcology; Surgeons, Mr. Cathcart, Mr. Hodsdon, Mr. Wallace, and Mr. Miles (perpetual hospital ticket, £12); Clinical Medicine, Sir R. W. Philip, Dr. Lovell Gulland, Dr. Graham Brown, Dr. F. D. Boyd, and Dr. Brewis for Gynæcology (£3 5*s.*); Clinical Surgery, Mr. Cathcart, Mr. Hodsdon, Mr. Wallace, and Mr. Miles (£3 5*s.*); Tuberculosis, Sir R. W. Philip (Clinical), Dr. Miller (Pathological); Vaccination, Dr. Buist† and Dr. W. G. A. Robertson (£1 1*s.*); Diseases of Ear, Nose, and Throat, Dr. J. Malcolm Farquharson and Dr. J. S. Fraser (£2 2*s.*); Diseases of the Eye, Dr. J. V. Paterson (£2 2*s.*); Ophthalmoscopy, Dr. A. H. H. Sinclair (£2 2*s.*); Gynæcology, Dr. Haig Ferguson and Dr. Elsie Inglis (Systematic), Dr. Brewis and Dr. J. Haig Ferguson (Clinical), and Dr. J. W. Ballantyne (Advanced) (£2 2*s.*); Neurology, Dr. J. J. Graham Brown (£2 2*s.*); Medical Electricity, Dr. Dawson Turner (£2 12*s.* 6*d.*); Tropical Diseases, Major D. G. Marshall, I.M.S. (£2 2*s.*). Summer Session: Practical Anatomy and Demonstrations, Dr. Ryland Whitaker (£2 2*s.*); Practical Physiology, Dr. Goodall (£3 3*s.*); Biology, Mr. M. Laurie,‡ Dr. Newbigin, and Mr. C. R. Whittaker (£3 5*s.*); Practical Chemistry and Analytical Chemistry, Mr. Gemmell and Dr. Drinkwater§; Practical Bacteriology, Dr. Taylor Grant and Dr. James Miller; Materia Medica, Dr. Craig and Dr. J. Orr; Diseases of the Eye, Dr. J. V. Paterson (£2 2*s.*); Medical Psychology and Insanity, Dr. John Keay (£2 2*s.*); Medical Jurisprudence, Dr. Aitchison Robertson; Public Health, Dr. Wm. Robertson (£2 2*s.*); Gynæcology, Dr. Brewis (£2 2*s.*); Midwifery Lectures, Dr. Ballantyne, Dr. Haig Ferguson, Dr. W. Fordyce, Dr. McGibbon, Dr. Barbour Simpson, and Dr. Davidson (£3 5*s.*); Practical Gynæcology, Dr. Elsie Inglis (£2 2*s.*); Operative Surgery, Mr. Scot Skirving, Mr. Chiene, Mr. H. Wade, Mr. J. W. Struthers, Mr. W. J. Stuart, and Mr. L. Beesly (£3 3*s.*); Practical Pathology, Dr. James Miller (£3 8*s.*); Physics, Dr. Turner and Mr. A. McKendrick,‡ (£3 3*s.*); Practical Medicine and Physical Diagnosis, Dr. Fleming, Dr. A. Goodall, and Dr. J. D. Comrie (£3 3*s.*); Clinical Medicine, Sir R. W. Philip, Dr. Gulland, Dr. Graham Brown, Dr. Boyd, and Mr. Brewis for Gynæcology (£3 3*s.*); Vaccination, Dr. Buist and Dr. W. G. A. Robertson (£1 1*s.*); Neurology, Dr. Graham Brown; Diseases of Ear, Nose, and Throat, Dr. J. Malcolm Farquharson and Dr. J. S. Fraser (£2 2*s.*); Tropical Diseases, Major D. G. Marshall, I.M.S. (£2 2*s.*); Medical Electricity, Dr. Dawson Turner; Meteorology, Dr. Dawson Turner; Tuberculosis, Sir R. W. Philip (Clinical) and Dr. Miller (Pathological).

Special Classes for Women, Winter Session: Practical Anatomy and Demonstrations, Dr. Ryland Whitaker (£4 4*s.*); Chemistry (Lectures and Practical), Dr. T. W. Drinkwater (£3 5*s.* and £3 3*s.*); Practice of Physic, Dr. W. T. Ritchie (£3 5*s.*); Surgery, Mr. Beesly (£3 5*s.*); Midwifery and Diseases of Women, Dr. J. W. Ballantyne; General Pathology, Dr. James Miller (£3 5*s.*); Physiology (Institutes of Medicine), Dr. Goodall (£3 5*s.*); Materia Medica, &c., Dr. Craig (£3 5*s.*); Clinical Medicine, Dr. R. A. Fleming, Royal Infirmary (£3 5*s.*); Clinical Surgery, Mr. Dowden, Royal Infirmary (£3 5*s.*); Physics, Dr. Dawson Turner (£3 3*s.*); Vaccination, Dr. W. G. A. Robertson (£1 1*s.*); Practical Gynæcology, Dr. Brewis (£2 2*s.*); Diseases of the Eye, Dr. J. V. Paterson; Bacteriology, Dr. J. Taylor Grant; Tropical Diseases, Major D. G. Marshall; Fevers, City Hospital. Summer Session: Practical Anatomy, Dr. Ryland Whitaker (£2 2*s.*); Practical Chemistry, Dr. T. W. Drinkwater (£3 3*s.*); Materia Medica, &c., Dr. Craig (£3 3*s.*); Operative Surgery and Surgical Anatomy, Mr. Beesly (£3 3*s.*); Materia Medica and Therapeutics, Dr. Wm. Craig (£3 3*s.*); Practical Materia Medica, Dr. Wm. Craig; Medical Jurisprudence and Public Health, Dr. Aitchison Robertson (£3 5*s.*); Public Health, Dr. W. Robertson; Clinical Medicine, Dr. R. A. Fleming; Clinical Surgery, Mr. Dowden, Royal Infirmary (£3 5*s.*); Practical Physiology and Histology, Dr. Goodall (£3 3*s.*); Practical Pathology, Dr. James Miller (£3 3*s.*); Biology, Dr. Newbigin (£3 3*s.*); Physics, Dr. Dawson Turner (£3 3*s.*); Ophthalmology, Dr. J. V. Paterson (£2 2*s.*); Insanity, Dr. John Keay (£2 2*s.*); Practical Gynæcology, Dr. J. W. Ballantyne (£2 2*s.*); Vaccination, Dr. W. G. A. Robertson; Tropical Diseases, Major Marshall; Medical Electricity, Dr. Dawson Turner.

The minimum cost of the education in this School of Medicine for the Triple Qualification of Physician and Surgeon from the Royal Colleges of Physicians and Surgeons of Edinburgh and the Faculty of Physicians and Surgeons of Glasgow, including the fees for the Joint Examinations, is about £115, payment of which is distributed over the period of study. There is no composition fee.

Further particulars regarding the school, also its calendar, may be had on application to the Dean of the School, 11, Bristo-place, Edinburgh.

* Lectures, £3 5*s.*; Practical, £3 3*s.*; Analytical, £2 a month, or £5 for three months. † Also in Summer Session. ‡ Also in Winter Session. § Practical, £3 3*s.*; Analytical, £2 a month, or £5 for three months.

N.B.—Where two or more lecturers appear as teaching the same subjects their lectures are not conjoined, but each gives an independent course.

THE EDINBURGH SCHOOL OF MEDICINE FOR WOMEN.—The Edinburgh School of Medicine for Women provides all the classes required for a complete curriculum. The classes qualify for the University Degree in Medicine, for the Diploma of the Royal Colleges, and for the Triple Qualification. The lecturers of the school are specially recognised by the Court of Edinburgh University for the education of women who propose taking the degree in medicine of the University of Edinburgh. Most of the classes are held in Surgeons' Hall. The office of the school and a sitting-room and other conveniences are provided in the same building for the use of the women students. The clinical instruction of the students is conducted in the wards of the Royal Infirmary, specially set apart for the purpose; in the Royal Hospital for Sick Children; in the City Hospital for Infectious Diseases; at Bangour Asylum; and at the various public dispensaries. The fees and the regulations as to the course of study are the same as for the male students. Further particulars can be obtained from Miss Keith, the Secretary of the School of Medicine for Women, Surgeons' Hall, Edinburgh.

Clinical Instruction.—ROYAL INFIRMARY, Edinburgh.—This hospital has 921 beds and 42 cots for children, the average daily number of patients for 1913 being 858. Courses of Clinical Medicine and Surgery are given by the physicians and surgeons. Special instruction is given on Diseases of Women, Physical Diagnosis, Diseases of the Skin, Diseases of the Eye, the Ear, the Larynx, and the Teeth. Separate wards are devoted to Venereal Diseases, Diseases of Women, Diseases of the Eye, the Ear, Throat and Nose, and the Skin, and also to cases of Incidental Delirium or Insanity. There are also large and complete Medical-Electrical and X Ray and Bathing Departments. Three wards are specially set apart for Clinical Instruction to Women Students. Post-mortem examinations are conducted in the anatomical theatre by the pathologist and his assistants, who also give practical instruction in Pathological Anatomy and Histology. The fees for hospital attendance are as follows—viz.: Perpetual ticket, in one payment, £12; annual ticket, £6 6*s.*; six months, £4 4*s.*; three months, £2 2*s.*; monthly, £1 1*s.* Separate payments amounting to £12 12*s.* entitle the student to a life ticket. No fees are paid for any medical or surgical appointment. The appointments are as follows: 1. Resident physicians and surgeons are appointed and live in the house free of charge. The appointment is for six months, but may be renewed at the end of that period by special recommendation. 2. Non-resident house physicians and surgeons and clinical assistants are appointed for six months. The appointment may be renewed for a like period by special recommendation. 3. Clerks and dressers are appointed by the physicians and surgeons. These appointments are open to all students and junior practitioners holding hospital tickets. 4. Assistants in the Pathological Department are appointed by the pathologist.

Staff.—Consulting Physicians: Sir James Affleck, Dr. Alexander James, Dr. Byrom Bramwell, and Emeritus Professor W. S. Greenfield. Physicians: Sir Thomas R. Fraser, Dr. John Wyllie, Sir R. W. Philip, Dr. William Russell, Dr. Lovell Gulland, Dr. Graham Brown, and Dr. F. D. Boyd. Assistant Physicians: Dr. R. A. Fleming, Dr. Harry Rainy, Dr. Chalmers Watson, Dr. Edwin Bramwell, Dr. Edwin Matthew, Dr. W. T. Ritchie, Dr. John Eason, Dr. John D. Comrie, and Dr. Alex. Goodall. Consulting Surgeons: Mr. A. G. Miller, Dr. C. W. MacGillivray, Emeritus Professor John Chiene, C.B., and Mr. J. M. Cotterill. Surgeons: Mr. F. M. Caird, Mr. C. W. Cathcart, Mr. J. W. B. Hodsdon, Mr. David Wallace, Mr. Alexis Thomson, Mr. Alexander Miles, and Mr. John W. Dowden. Assistant Surgeons: Mr. A. A. Scot Skirving, Mr. George L. Chiene, Mr. W. J. Stuart, Mr. J. W. Struthers, Mr. Henry Wade, Mr. E. Scott Carmichael, Mr. D. P. D. Wilkie, Mr. L. C. Peel Ritchie, and Mr. Denis Cotterill. Consulting Gynæcologists: Professor Sir Halliday Croom and Emeritus Professor Sir A. R. Simpson. Gynæcologists: Dr. A. H. F. Barbour and Mr. N. T. Brewis. Assistant Gynæcologists: Dr. J. Haig Ferguson and Dr. William Fordyce. Consulting Physician to the Skin Department: Dr. W. Allan Jamieson. Physicians to the Skin Department: Dr. Norman Walker and Dr. Fred Gardiner. Assistant Physician to the Skin Department: Dr. R. Cranston Low. Consulting Surgeons to the Ophthalmic Department: Mr. George A. Berry and Dr. George Mackay. Surgeons to the Ophthalmic Department: Dr. W. G. Sym and Dr. J. V. Paterson. Assistant Surgeon to the Ophthalmic Department: Dr. A. H. H. Sinclair. Consulting Surgeons to the Ear and Throat Department: Dr. P. M'Bride and Dr. R. M'Kenzie Johnston. Surgeons to the Ear and Throat Department: Dr. A. Logan Turner and Dr. J. Malcolm Farquharson. Assistant Surgeons to the Ear and Throat Department: Dr. John S. Fraser and Dr. John D. Lithgow. Consulting Surgeon to the Dental Department: Mr. William Guy. Surgeon to the Dental Department: Mr. J. H. Gibbs. Extra Medical Electrician (for Radium Cases): Dr. Dawson Turner. Medical Electricians: Dr. W. Hope Fowler and Dr. Archibald M'Kendrick. Pathologist: Professor Lorrain Smith. Assistant Pathologists: Dr. James Miller, Dr. A. Murray Drennan, and Dr. D. Murray Lyon.

ROYAL HOSPITAL FOR SICK CHILDREN, Sciennes-road, Edinburgh.—This hospital contains 120 beds, and is fitted with every modern improvement. A fully equipped out-patient department (medical and surgical) is conducted daily in a building adjoining the hospital. Systematic courses of instruction, which qualify for graduation in the Edinburgh University and elsewhere, are given from time to time throughout the year by the staff. Students may enter at any time. Full particulars can be obtained from the Registrar at the hospital.

Staff.—Consulting Physicians: Dr. J. Carmichael, Dr. J. Playfair, and Dr. T. M. Burn-Murdoch. Consulting Surgeon: (vacant). Consulting Surgeon Dentist: (vacant). Pathologist: Dr. W. E. Carnegie Dickson. Ordinary Physicians: Dr. J. Thomson, Dr. J. S. Fowler, and Dr. J. W. Simpson. Surgeon: Mr. H. J. Stiles. Ophthalmic Surgeon: Mr. G. A. Berry. Assistant Surgeon: Mr. J. Fraser. Surgeon to Ear and Throat Department: Mr. W. G. Porter. Medical Electrician: Dr. J. W. Spence. Extra

Physicians: Dr. Dingwall Fordyce, Dr. C. McNeil, and Dr. Norman S. Carmichael. Anæsthetists: Dr. D. C. A. M'Allum and Dr. Eric Craig.

Eye, Ear, and Throat Infirmary of Edinburgh, 6, Cambridge-street, Lothian-road.—Clinical Lectures and Instruction are given in this institution, which is open at 1 o'clock daily for outdoor patients for Eye Diseases; Mondays, Thursdays, and Saturdays at 12 noon, and Tuesdays and Fridays at 4 p.m. for outdoor Ear, Nose, and Throat Patients. Special Practical Ophthalmoscopic Classes by arrangement. Patients whose diseases require operations or more than ordinary care are accommodated in the house. Consulting Surgeon: Dr. Logan Turner (Ear, Nose, and Throat Department). Surgeons: Dr. William George Sym, Dr. J. V. Paterson, Dr. W. G. Porter, Dr. E. M. Lithgow, Dr. W. T. Gardiner, Dr. John M. Darling, and Dr. Ernest H. Cameron. Honorary Clinical Pathologist: Dr. Ian Struthers Stewart. Honorary Anæsthetist: Mr. J. H. Gibbs. Dental Surgeon: Mr. G. W. Watson. Treasurer: and Secretary: Mr. J. P. Watson, W.S., 32, Charlotte-square.

UNIVERSITY OF GLASGOW.

The University of Glasgow is both a teaching and a degree-granting body, but admits to graduation only candidates whose preliminary examination and course of study conform to its own regulations. Within certain limits instruction given by recognised medical schools and teachers may be accepted, but not less than one-half of the subjects other than clinical must be taken in this or some other recognised university, and at least two years of the course must be taken in Glasgow University. Six degrees, open both to men and women, are conferred: M.B. and Ch.B. (always conjointly), M.D. and Ch.M.; B.Sc. in Public Health; D.Sc. in Public Health; and B.Sc. in Pharmacy. A Preliminary Examination must be passed in (1) English, (2) Latin, (3) Elementary Mathematics, and (4) Greek, or French, or German, or Italian, with possible options to students whose native language is not English. Candidates taking the University preliminary examination are not obliged to pass in all the four subjects at one examination, but must do so at not more than two occasions.

For the degrees of M.B. and Ch.B. a curriculum of five years is required. The candidate must, during his curriculum, have attended a course or courses of instruction in each of the following subjects of study, extending over not less than the number of terms specified in each case, and including such class examinations as may be prescribed in connexion with the several courses:—Chemistry (including Organic Chemistry), two terms; with Practical Chemistry, one term; Physics (with practical work), one term; Botany (with practical work), one term; Zoology (with practical work), one term; Anatomy and Practical Anatomy, five terms; Physiology and Practical Physiology, three terms; Materia Medica and Therapeutics (together or separately), each subject, one term; Pathology and Practical Pathology, three terms; Medical Jurisprudence and Public Health (together or separately), each subject, one term; Midwifery and Diseases peculiar to Women and to Infants, two terms; Surgery, two terms; Medicine, two terms. Candidates must attend at least three years the Medical and Surgical Practice of a recognised hospital accommodating at least 80 patients and having a distinct staff of physicians and surgeons. At least nine months' hospital attendance is required on both Clinical Surgery and Clinical Medicine, and the student must have acted for six months as clerk in medical and dresser in surgical wards, and must have had six months' outdoor practice; he must also have attended a course of Mental Diseases and of Practical Pharmacy (25 meetings), must have been properly instructed in Vaccination at a public vaccination station, and must have attended at least 20 cases of labour and the Practice of a Lying-in Hospital. The University also requires further study in Post-Mortem Examinations, Fevers, Dermatology, Ophthalmology, Gynæcology, Diseases of Children, and Diseases of the Ear and Throat. If a candidate has completed in a University of the United Kingdom a course of study and passed an examination in Botany, Zoology, Physics, or Chemistry, qualifying for a degree in Science or in Arts, he is held to have passed the examinations in such subject or subjects, and there is also power to accept certain Professional Examinations for Medical Degrees of other Universities.

There are four Professional Examinations, the first comprising Botany, Zoology, Physics, and Chemistry; the second comprising Anatomy and Physiology; the third comprising Materia Medica and Therapeutics and Pathology; and the fourth or final, comprising Medical Jurisprudence and Public Health, Surgery and Clinical Surgery, Practice of Medicine and Clinical Medicine, and Midwifery and the Diseases peculiar to Women and to Infants.

The degrees of M.D. (Doctor of Medicine) and Ch.M. (Master of Surgery) are higher degrees in Medicine and Surgery respectively, and candidates (not under 24 years of age) who have previously obtained the double bachelorship may be admitted to either M.D. or Ch.M. on completing the after course prescribed, including an examination in Clinical Medicine for M.D. and an examination in Surgical Anatomy, operations on the dead body, and Clinical Surgery for Ch.M.

Fees.—The Fees for M.B. and Ch.B. are £23 2*s.* The class fee in each subject of the curriculum for M.B. and Ch.B. is £2 2*s.*, £3 3*s.*, or £4 4*s.*, and the present fees for hospital attendance are £10 10*s.* The fee for M.D. is £15 15*s.*, and for Ch.M. £15 15*s.*

The great majority of the students take their hospital course at the Western Infirmary, or the Royal Infirmary, where clinical instruction is given by professors of the University and others. Clinical instruction on Fevers is given at Ruchill and Belvidere Hospitals, while special courses, largely of a practical nature and embracing work in Hospital or Asylum wards, are conducted by University Lecturers on the Ear, the Throat and Nose, Dermatology, Ophthalmology, and Insanity. Queen Margaret College, sometime conducted as a separate institution for the higher education of women, was made over to the University in 1892, and in it medical classes for women are conducted under University professors and other lecturers appointed by the University Court, whilst for clinical instruction female students are admitted to the Royal Infirmary.

Professors—Natural Philosophy: A. Gray, LL.D., F.R.S. Materia Medica: Ralph Stockman, M.D. Chemistry: John Ferguson, LL.D. Surgery: Sir William Macewen, M.D., F.R.S., and Robert Kennedy, M.D., D.Sc. Practice of Medicine: T. K. Monro, M.D., and W. K. Hunter, M.D., D.Sc. Midwifery: Murdoch Cameron, M.D., and J. M. Munro Kerr, M.D. Anatomy: Thomas H. Bryce, M.A., M.D. Zoology: John Graham Kerr, M.A., F.R.S. Botany: F. O. Bower, D.Sc., F.R.S. Physiology: D. Noël Paton, B.Sc., M.D., F.R.S. Forensic Medicine: John Glaister, M.D. Pathology: Robert Muir, M.A., M.D., F.R.S., and J. H. Teacher, M.A., M.D.

In this University Bursaries and Prizes to the annual amount of over £1000 are appropriated to students in the Medical Faculty, and there are, moreover, several Scholarships and Fellowships which may be held by medical students who have gone through the Arts course. The designation, money value, subjects of examination or other method of selection, conditions of eligibility, &c., of the Bursaries and Prizes are as follows:—Two Glasgow Highland Society Bursaries, tenable for five years, open to medical students of Highland descent, £25 each, awarded on results of Bursary Examination; Mackintosh Mental Science Bursary, open to medical students of either sex attending the Lectures on Insanity, £31; Monteith Bursary, tenable for two years, awarded on results of Second Professional Examination, £21. Anatomy and Physiology; Dr. Thomas Gibson Bursary, tenable for four years, open to medical students preparing to be Missionaries, £36, competition at the First Professional Examination; Coats Scholarship, open to graduates in medicine of not more than three years' standing, holder to prosecute research in pathology, £85, Pathology; John Macfarlane Bursary and Lorimer Bursary, each tenable for three years and open to medical students entering on their second winter session, £48 and £25 respectively; an Armagh Bursary, open to students of either sex presenting themselves for the Final Examination for the degree of M.A. with Honours, and intending to study Medicine, £52 for three years; William Gardiner Bursary, tenable for two years, open to medical students of either sex, £14, Physiology, Chemistry, and Physics of Professional

Examinations; Rainy Bursary, tenable for two years, open to medical students entering on their fourth winter session, £20, Anatomy, Physiology, Chemistry, Botany, and Zoology; two Paterson Bursaries, tenable for four years, open to medical students of first or second session, £25 and £20 respectively, Mathematics and Dynamics; Brunton Memorial Prize, awarded annually to the most distinguished graduate in medicine of the year, £10; Dobbie Smith Gold Medal, awarded for an Essay on a Botanical subject; two Arnott Prizes, £25 and £15 respectively, Physiological Physics, &c.; Andrew and Bethia Stewart Bursary, tenable for three years, open to M.A. Graduates of the University, £50, Special Examination; Weir Bursary, awarded on result of Second and Third Professional Examinations, £18; McCunn Medical Research Scholarships, open to medical graduates of Scottish Universities, £100 (see University Calendar).

THE ANDERSON COLLEGE OF MEDICINE, Dumbarton-road, Glasgow, W.—This medical school took its rise as the Medical Department of Anderson's University, founded in 1795 by the will of Professor John Anderson, F.R.S., and has been active since 1799. It has given 14 professors to the University of Glasgow. The following courses are given, which qualify for all the licensing boards and for the Universities of London, Durham, Edinburgh, and Glasgow (the latter two under certain conditions):—In winter: Anatomy and Practical Anatomy, Professor A. M. Buchanan; Physics, Professor Peter Bennett; Chemistry, Professor J. Robertson Watson; Botany, Professor B. G. Cormack; Zoology, Professor W. Ferguson Mackenzie; Physiology, Professor H. Morton; Materia Medica, Professor John P. Duncan; Midwifery and Diseases of Children, Professor Wm. D. Macfarlane; Surgery, Professor Archibald Young; Practice of Medicine, Professor John M. Cowan; Ophthalmic Medicine and Surgery, Dr. A. Freeland Fergus; Aural Surgery, Dr. J. Galbraith Connal; Diseases of Throat and Nose, Dr. John Macintyre; Public Health (Laboratory Course), Professor Carstairs C. Douglas; Dermatology, Dr. J. G. Tomkinson; Dental Bacteriology, Professor C. C. Douglas; Dental Surgery and Pathology, J. Watt; Dental Anatomy and Physiology, W. F. Mackenzie; Dental Metallurgy, Mr. Charles Read. In summer: Anatomy, Practical Anatomy, and Osteology; Practical Chemistry; Botany and Practical Botany; Zoology and Practical Zoology; Practical Physiology; Practical Materia Medica and Pharmacy; Medical Jurisprudence (Professor Carstairs C. Douglas); Diseases of Women (Professor Wm. D. Macfarlane); Operative Surgery: Ophthalmic Medicine and Surgery; Aural Surgery; Mental Diseases (Dr. Ivy Mackenzie); and Public Health (Lecture Course and Laboratory Course). The Chemical Laboratory is open daily from 10 to 5. The Dissecting-room is open in winter from 9 A.M. to 5 P.M., and in summer from 7 A.M. to 5 P.M. The students are assisted in their dissections by the Professor and Demonstrators, by whom frequent examinations and demonstrations on the parts dissected are conducted. The supply of subjects for dissection is ample, and students are consequently provided with parts as soon as they may be ready for them. The Dissecting-room is provided with a complete series of dissected specimens, mounted in plaster of Paris, illustrating the anatomy of the human body. Candidates for the Licence in Dental Surgery can obtain the full medical curriculum in Anatomy, Chemistry, Physiology, Surgery, Practice of Medicine, and Materia Medica. The courses special to Dentistry are also conducted in the Anderson College of Medicine.

The new buildings are situated in Dumbarton-road, immediately to the west of the entrance to the Western Infirmary, and adjoining the University. Extensive accommodation is provided for Practical Anatomy, Practical Chemistry, Practical Botany, Practical Zoology, Practical Physiology, Practical Pharmacy, Operative Surgery, and Public Health. Ample provision has also been made for the comfort of students.

Class Fees.—For each course of Lectures (Anatomy, Ophthalmic Medicine and Surgery, Aural Surgery, Diseases of Throat and Nose, Mental Diseases, and Public Health excepted), first session. £2 2*s.*; second session (in Anderson's College), £1 1*s.* For Practical Classes (except Anatomy, Chemistry, and Public Health)—namely, Botany, Zoology, Physiology, Pharmacy, and Operative Surgery—first session, £2 2*s.*; second session, £2 2*s.* Anatomy Class Fees: Winter, first session, Lectures and Practical Anatomy, £5 5*s.*; Practical Anatomy alone, £2 2*s.* Second session, Lectures and Practical Anatomy, £4 4*s.*; Practical Anatomy alone, £2 2*s.* Summer, Regional Course or Dental Course (each including nervous system) and Practical Anatomy, £3 3*s.*; Regional Anatomy Course or Dental Course alone, £2 2*s.*; Practical Anatomy alone, £1 11*s.* 6*d.*; Osteology and Practical Anatomy, £2 12*s.* 6*d.*; Osteology alone, £1 11*s.* 6*d.* Special Course of Demonstrations for Dental Students, £2 2*s.* Chemistry: Lectures, £2 2*s.*; Practical Chemistry, £3 3*s.* Botany and Zoology: Reduced fees for Lectures with Laboratory work in Botany or in Zoology, during same summer session, £3 3*s.*; for Lecture Class or Practical Class separately, in Botany or in Zoology, £2 2*s.* Ophthalmic Medicine and Surgery (including Hospital Practice), Aural Surgery, Diseases of Throat and Nose, and Mental Diseases, fee for each course, £1 1*s.* Public Health Laboratory, fee for six months' course, £12 12*s.* Matriculation Fees: For the year, 10*s.*; for one class in winter session alone, 5*s.*; for summer session alone, 5*s.*

Western Infirmary.—Fees: For Hospital Attendance, £10 10*s.*; afterwards free. For Clinical Instruction, winter, £3 3*s.*; summer, £2 2*s.* Pathology: systematic, £4 4*s.*; practical, £3 3*s.* Vaccination Fee, £1 1*s.*

Royal Infirmary.—Fees: Hospital Attendance—perpetual tickets, £7; for six months, £2 2*s.*; for three months, £1 1*s.* Separate payments, amounting in all to £7 7*s.*, entitle to perpetual ticket. Clinical Instruction for six months, £3 10*s.*; for three months, £1 15*s.* Pathology, both courses, £4 4*s.* Vaccination Fee, £1 1*s.*

Attendance at the dispensaries of the Western and Royal Infirmaries is included in the hospital fee.

Maternity and Women's Hospital.—Students' Hospital Fee, £5 5*s.*, which allows students to attend the hospital at any time during their undergraduate career. This fee must be paid before joining the hospital for either clinical instruction or practical work.

Royal Hospital for Sick Children.—Fee for one year, £1 1*s.*

Eye Infirmary.—Fee: Hospital Practice and Clinical instruction, including Lectures at the College, six months, £1 1*s.*

Lock Hospital.—£1 1*s.*

Fever Hospital, Belvidere or Ruchill.—Fee, £1 1*s.*

Hospital for Skin Diseases.—Fee, £1 1*s.*

The Carnegie Trust extends its benefactions to students at Anderson's College Medical School. Full particulars may be obtained from Sir W. S. McCormick, the Carnegie Trust Offices, Merchants' Hall, Edinburgh.

Certificates of attendance on the lectures at Anderson's College Medical School are received by the Universities of London, Durham, Edinburgh, and Glasgow (the latter two under certain conditions); by the Royal Colleges of Physicians of London and Edinburgh; by the Royal Colleges of Surgeons, England, Edinburgh, and Ireland; by the Royal College of Physicians of Ireland; by the Royal Faculty of Physicians and Surgeons of Glasgow; by the Society of Apothecaries, London; and by the Army, Navy, and East India Boards. The courses of Laboratory Instruction and Lectures in Public Health are recognised by the Royal Faculty and Scottish Colleges; by the Royal College of Physicians and the Royal College of Surgeons, Ireland; and by the Universities of Cambridge, London, &c. Communications relating to the Medical School to be addressed to the Secretary of the Medical Faculty, The Anderson College of Medicine, Glasgow, W. Communications relating to the Preliminary Examination in General Education to be addressed to Mr. Hugh Cameron, M.A., F.E.I.S., Educational Institute Office, 34, North Bridge-street, Edinburgh. Communications relating to the Triple Qualification to be addressed to Mr. Alexander Duncan, B.A., LL.D., Royal Faculty Hall, 242, St. Vincent-street, Glasgow.

The Malcolm Kerr Bursary in Anatomy (value about £10) is open to students of the Junior Anatomy Class during Winter Session 1914–15.

The Winter Session will open on Monday, Oct. 12th, 1914, and will close on Thursday, March 18th, 1915.

The Summer Session will open on Wednesday, April 21st, 1915, and will close on Wednesday, June 30th, 1915.

St. Mungo's College and Glasgow Royal Infirmary.—This College was incorporated in 1889. The Glasgow Royal Infirmary was founded in 1791. The Faculty of Medicine of the College occupies buildings erected for the purposes of a medical school, adjoining and communicating with the Royal Infirmary. The Laboratories, Museums, and Lecture-rooms are equipped and adapted to modern scientific requirements. A complete electric light installation has been added, and a powerful Educational Lantern has been provided for demonstration purposes. The Royal Infirmary, which is at the service of the College for the purpose of clinical and practical instruction, is one of the largest hospitals in the kingdom. The Winter Session will open on Monday, Oct. 12th.

Psychological Medicine.—Practical instruction is given in Hawkhead Asylum, situated within a short distance of Glasgow and having accommodation for 850 patients. Eight resident clinical clerks are appointed annually. These clerkships are open to students attending St. Mungo's College.

Clinical Instruction in Fevers.—Classes are conducted by Dr. Johnston, Superintendent, at the City of Glasgow Fever Hospital, Belvidere, and Dr. Brownlee, Superintendent, at the City of Glasgow Fever Hospital, Ruchill.

Clinical Instruction in Midwifery.—The close proximity of the Maternity Hospital enables the Professor of Midwifery to conduct frequent clinical demonstrations there during the Summer Session.

The classes in St. Mungo's College qualify for the English, Scotch, and Irish Conjoint Boards and, under certain conditions, for the various universities, including the University of London. Students who have fulfilled the conditions of the Carnegie Trust as regards Scottish birth or extraction, age (16 years), and Preliminary Examination, are eligible for the benefits of this Trust during the whole course of their studies at St. Mungo's College.

The fee for each class is £2 2*s.*, except Zoology and Botany, joint fee £3 3*s.*, Anatomy, Winter Session, £4 4*s.*, Pathology, £4 4*s.*, Physics, £2 4*s.* 6*d.*, Public Health Laboratory, £12 12*s.*, and certain extra classes for which the fee is £1 1*s.* The hospital fee (including clinical lectures) is £21 for a perpetual ticket.

The classes in St. Mungo's College are now open to male and female students equally.

The minimum fees for all the lectures, including hospital attendance, necessary for candidates for the Diplomas of the English or Scotch Colleges of Physicians and Surgeons, amount to £65. Further particulars can be obtained from a syllabus which may be procured free on application to the Secretary of the Medical Faculty, 86, Castle-street, Glasgow.

Glasgow Western Medical School.—This School is situated in University-avenue, opposite the principal gate of the University and near the Western Infirmary. Lectures and Demonstrations are given on Anatomy, Medicine, Surgery, Midwifery and Gynæcology, Ophthalmology, Dermatology, and Diseases of Throat, Nose, and Ear. Some of the classes qualify for graduation and for Scotch diplomas.

Class Fees.—For each course of Lectures the fee is £2 2*s.*, or in some cases £1 1*s.* There is no matriculation fee.

Lecturers: Winter Session.—Anatomy: Dr. D. T. C. Frew, at 4 P.M.; Surgery: Dr. Donald Duff; Midwifery: Dr. Balfour Marshall, at 2 P.M.; Medicine: Dr. Hugh Morton; Dermatology: Dr. Goodwin Tomkinson; Throat and Nose, Dr. W. S. Syme; Ear, Dr. Jas. Harper.

Summer Session.—Anatomy: Dr. Frew, at 4 P.M.; Operative Surgery: Dr. Duff; Genæcology: Dr. Balfour Marshall, Tuesday, Thursday, and Friday, at 2 P.M.; Medicine: Dr. Morton; Ophthalmology: Dr. Wilson; Dermatology: Dr. Goodwin Tomkinson: Throat and Nose, Dr. Syme; Ear, Dr. Harper. Further particulars can be obtained from the Secretary, Mr. J. N. Morton, 58, Bath-street.

Queen Margaret College, University of Glasgow.—Queen Margaret College was founded in 1883 by the Glasgow Association for the Higher Education of Women (instituted in 1877), and handsome buildings and grounds near the University were presented to the College in 1884 by Mrs. John Elder. In 1890 a School of Medicine for Women was added to its Arts Faculty. In 1892, when the Universities Commissioners issued an ordinance empowering the Scottish University Courts to make provision for the instruction of women, the Council of the College and Mrs. Elder transferred to the University the College, its building, grounds, and endowments, on condition that these should be devoted to the maintenance of University classes for women only. The College then became the Women's Department of the University of Glasgow; its classes are taught by professors of the University and other lecturers appointed by the University Court, and it is governed by the University Court and Senate. The curriculum, regulations, and fees are the same as those of the male students, and the University degrees are open to women on the same conditions as to men. They have access to the University Museum and can borrow books from the University Library, besides having a library of reference in Queen Margaret College. The School of Medicine is a special feature of the College, and gives full preparation for the medical degrees of the University. In July, 1894, for the first time in the history of any Scottish University, women students graduated in medicine in Glasgow University. 181 women have now taken the degree of M.B., C.M., or M.B., Ch.B. of the University of Glasgow and 19 the degree of M.D. The women students study Physics, Zoology, Botany, Physiology, Materia Medica, Medical Jurisprudence, and Public Health in the University Buildings at Gilmorehill; Chemistry and Anatomy at Queen Margaret College; Pathology, Surgery, Medicine, and Gynæcology at the Royal Infirmary. Excellent facilities for clinical work are given in the Royal Infirmary, in the Maternity, and other hospitals. By a gift of £5000 granted for the purpose by the Bellahouston Trust the University Court was enabled to add to the College a large building for the study of Anatomy and other medical subjects. The Arthur Scholarship is open every third year to students of first year; other Bursaries are open in Arts and Medicine; and by an ordinance of the Universities Commissioners women are admitted to certain University bursaries, scholarships, and fellowships. There is a house of residence for the students of the College coming from a distance.

Royal Infirmary, Glasgow.—This infirmary, which is the largest in Glasgow, is situated in Cathedral-square, Castle-street, and has car communication with every part of the city. The ancient connexion between the University of Glasgow and the Royal Infirmary was revived in 1911, when the following University Chairs were established at the infirmary: The Muirhead Chair of Medicine, Dr. W. K. Hunter; the St. Mungo Chair (Notman) of Pathology, Dr. John H. Teacher; the St. Mungo Chair of Surgery, Dr. Robert Kennedy; the Muirhead Chair of Obstetrics and Gynæcology, Dr. J. M. Munro Kerr. The following University Lectureships have also been established at the infirmary—viz., of Ophthalmology, Dr. Maitland Ramsay; of Clinical Surgery, Mr. Adams, Mr. Newman, and Mr. McGregor; of Clinical Medicine, Dr. Cowan, Dr. Mackenzie Anderson, and Dr. Wm. R. Jack; of Venereal Diseases, Mr. David Newman. Assistant, Mr. David Watson. St. Mungo's College is situated in the infirmary grounds. The infirmary has, including the Ophthalmic Department, 670 beds. When the rebuilding of the infirmary, now in progress, is completed the beds will number about 700. There are special beds and wards for diseases of women, of the throat, nose, and ear, skin, venereal diseases, burns and septic cases. Wards are set apart for the teaching of Women Students. At the Out-door Department the attendances in 1913 numbered over 128,000. In addition to the large medical and surgical departments there are departments for special diseases—viz., diseases of women, of the throat and nose, of the ear, of the eye, of the skin, and of the teeth. Five house physicians and nine house surgeons, having a legal qualification in medicine and surgery, who board in the hospital free of charge, are appointed every six months. Clerks and dressers are appointed by the physicians and surgeons. As a large number of cases of acute diseases and accidents of a varied character are received these appointments are very valuable and desirable. There is a modern and fully equipped Electrical Pavilion, and year by year the latest and most approved apparatus for diagnosis and treatment has been added. The fees are as follows: (*a*) For hospital practice, including attendance at the out-door department, at the pathological department, post-mortem examinations, and the use of the museum: Perpetual ticket, £7; six months, £2 2*s.*; three months, £1 1*s.*;

separate payments amounting to £7 7*s.* entitle the student to a perpetual ticket, on return of previous season tickets; (*b*) for Clinical Lectures, six months, £3 10*s.*; three months, £1 15*s.*; (*c*) Vaccination, £1 1*s.*; Pathology, £4 4*s.*; Bacteriology, £2 2*s.*

Staff.—Visiting Physicians: Dr. W. K. Hunter, Dr. John M. Cowan, Dr. Mackenzie Anderson, Dr. Wm. R. Jack, and Dr. John Henderson. Visiting Surgeons: Mr. J. A. Adams, Mr. David Newman, Mr. J. H. Pringle, Mr. H. Rutherfurd, Mr. Peter Paterson, Mr. A. N. McGregor, and Dr. Robert Kennedy. Assistant Physicians: Dr. James Scott, Dr. Archd. W. Harrington, and Dr. John G. Middleton. Assistant Surgeons: Mr. John Patrick, Mr. John A. C. Macewen, and Mr. Thomas Kay. Dispensary Physicians: Dr. D. H. Macphail, Dr. Arthur Crawford, Dr. David Macdonald, and Dr. John G. Middleton. Dispensary Surgeons: Mr. A. G. Faulds, Mr. James Battersby, Mr. Donald Duff, Mr. Alex. J. Couper, Mr. Milne McIntyre, and Mr. Robert S. Dewar. Extra Dispensary Physicians: Dr. William Watson, Dr. T. S. Barrie, and Dr. D. T. C. Frew. Extra Dispensary Surgeons: Mr. Wm. C. Mackie, Mr. J. A. G. Burton, and Mr. P. H. Robertson. Consulting Surgeon for Diseases of the Eye; Dr. A. Maitland Ramsay. Consulting Medical Electrician: Dr. John Macintyre. Surgeon for Diseases of the Throat and Nose: Dr. John Macintyre. Gynæcologists: Dr. Balfour Marshall and Dr. J. M. Munro Kerr. Surgeon for Diseases of the Ear: Dr. J. Kerr Love. Physician for Diseases of the Skin: Dr. Alex. Morton. Pathologist: Dr. J. H. Teacher. Assistants in Pathological Institute: Dr. J. A. G. Burton, Dr. James Hendry, Dr. N. M. Allan, and Dr. M. G. Brown. Bacteriologist: Dr. David McCrorie. Assistant Bacteriologist: Dr. J. A. Campbell. Medical Electrician: Mr. J. R. Riddell. Assistant Medical Electricians: Dr. Samuel Capie and Dr. Katharine M. Chapman. Anæsthetists: Dr. John Donald, Dr. H. P. Fairlie, Dr. F. L. Napier, Dr. A. S. Richmond, Dr. John S. McConville, Dr. Ellen Brown Orr, and Dr. Wm. Laird. Vaccinator: Dr. H. H. Borland. Dispensary Specialists:—Diseases of Women: Dr. James Taylor, Dr. A. L. McIlroy, Dr. James Hendry, and Dr. J. McIntyre. Diseases of the Ear: Dr. James Adam, Dr. R. S. McKim, and Dr. John W. Leitch; Diseases of the Skin: Dr. Alexander Morton and Dr. G. McIntyre; Diseases of the Throat and Nose: Dr. R. Fullerton and Dr. P. N. Grant; Diseases of the Teeth: Mr. W. Taylor and Mr. W. R. Taylor; Venereal Diseases: Dr. David Watson. Ophthalmic Department:—Surgeon: Dr. Maitland Ramsay; Assistant Surgeons: Dr. John Rowan, Dr. H. W. Thomson, Dr. John Gilchrist, Dr. John Wilson, and Dr. John Pearson; Extra Dispensary Surgeons: Dr. Walter H. Kiep and Dr. Andrew Ross Muir: Electrician: Dr. Gilchrist; Pathologist: Dr. John H. Teacher; Anæsthetist: Dr. R. H. Henderson; Superintendent: Dr. J. Maxtone Thom.

GLASGOW WESTERN INFIRMARY.—This hospital adjoins the University of Glasgow. Number of beds upwards of 600. Special wards are set apart for Diseases of Women and for Affections of the Skin. In the out-patient department there are special cliniques for Diseases of Women and for Diseases of the Throat, Ear, Teeth, and Skin. The Clinical Courses are given by the physicians and surgeons, each of whom conducts a separate class, and students require to enter their names at the beginning of the session for the class which they propose to attend. Special instruction is given to junior students by tutors or assistants, and clinical clerks and dressers are selected from the members of the class. All the courses of clinical instruction are recognised by the University of Glasgow and the other boards in the kingdom. In the Pathological Department the course is both systematic and practical, also post-graduate courses, and extends through the winter and following summer; these are likewise recognised by the University for graduation. Fifteen resident assistants are appointed annually, without salary, from those who have completed their course. The fee for hospital attendance is £10 10*s.* and the fees for clinical instruction are £3 3*s.* for the Winter Session and £2 2*s.* for the Summer Session.

A Clinical Laboratory has been opened, and students will receive laboratory instruction from the lecturer on clinical methods.

Staff.—Honorary Consulting Surgeons: Sir Hector C. Cameron and Sir George T. Beatson, K.C.B. Honorary Consulting Gynæcologist: Dr. W. L. Reid. Visiting Physicians: Dr. Ralph Stockman, Dr. Wm. MacLennan, Dr. R. Barclay Ness, Dr. T. K. Monro, and Dr. J. W. Nicol (Skin Department). Visiting Surgeons: Sir W. Macewen, Dr. J. C. Renton, Dr. T. K. Dalziel, Mr. James H. Nicoll, Dr. Duncan Macartney, and Mr. G. H. Edington. Gynæcologist: Dr. Murdoch Cameron. Assistant Physicians: Dr. James Carslaw, Dr. John S. M'Kendrick, and Dr. Frank Charteris. Assistant Surgeons: Dr. John Morton, Dr. Arch. Young, Dr. M. Logan Taylor, and Dr. C. C. Cuthbert. Dispensary Physicians: Dr. John Gracie, Dr. John P. Duncan, Dr. Geo. Allison Allan, Dr. Jas. R. C. Greenlees, Dr. G. H. Clark, and Dr. D. R. Kilpatrick. Dispensary Surgeons: Dr. Alex. H. Edwards, Dr. R. B. Carslaw, Dr. David Dickie, Dr. Wm. Rankin, Dr. J. M. Renton, Dr. Roy Young, and Dr. W. A. Campbell. Anæsthetists: Dr. James P. Boyd, Dr. R. Home Henderson, and Dr. H. P. Fairlie. Dispensary Gynæcologists: Dr. S. Cameron and Dr. Jas. H. Martin. Extra Dispensary Physicians: Dr. G. B. Fleming, Dr. Hugh Morton, Dr. J. W. McNee, and Dr. Adam Patrick. Dispensary Physician for Diseases of the Skin: Dr. J. G. Tomkinson. Extra Dispensary Surgeons: Dr. W. A. Sewell and Dr. Chas. Bennett. Dispensary Surgeon for Diseases of the Ear: Dr. Thomas Barr. Assistant Dispensary Surgeon for Diseases of the Ear: Dr. J. Stoddart Barr. Dispensary Surgeon for Diseases of the Throat and Nose: Dr. Walker Downie. Honorary Consulting Physician for Mental Disorders: Dr. L. R. Oswald. Consulting Medical Electrician: Dr. D. J. Mackintosh, M.V.O., LL.D. Medical Electricians: Dr. J. G. Tomkinson, Dr. Archd. Hay, and Dr. W. F. Somerville. Pathologist: Dr. Robert Muir. Clinical Pathologist: Dr. J. S. Dunn. Assistant Pathologists: Dr. Geo. Haswell Wilson and Dr. J. W. McNee. Vaccinator: Dr. J. L. Carstairs. Dental Surgeon: Mr. W. D. Woodburn, L.D.S. Superintendent: Dr. Donald J. Mackintosh, M.V.O., LL.D. Matron: Miss H. Gregory Smith. Secretary and Treasurer: J. Matheson Johnston, C.A., 87, Union-street.

ROYAL HOSPITAL FOR SICK CHILDREN, Glasgow.—This institution, which was founded in 1882, consists of: (1) a new hospital at Yorkhill containing 204 cots built on an elevated and central site close to the University and opened in July, 1914: (2) a Dispensary, or Out-patient Department, in West Graham-street, opened in October, 1888; and (3) a country branch at Drumchapel, Dumbartonshire, containing 24 cots, opened in 1903. Children treated must be under 12 years of age and suffering from non-infectious diseases. In the old hospital, containing 74 cots, about 1200 patients were treated annually, and in the Out-patient Department over 12,000 are treated annually, involving nearly 50,000 attendances. Lectures and clinical instruction on the diseases peculiar to childhood are given to students. Classes are formed both at the Hospital and Dispensary at the beginning of the winter and summer sessions at the University. Students may be enrolled at any time. Particulars may be obtained from the Honorary Secretary, 91, West Regent-street, Glasgow. Visiting Medical Officers at the Hospital:—Physician: Dr. Leonard Findlay. Surgeons: Dr. Alfred A. Young and Dr. Alexander MacLennan.

GLASGOW OPHTHALMIC INSTITUTION, 126, West Regent-street (29 beds and six cots).—Clinical and systematic course of lectures for students during the winter and summer sessions. In-patients, 1051; out- or dispensary patients, 13,644. Operations on Wednesdays and Saturdays. Honorary Consulting Surgeon: Dr. D. N. Knox. Surgeon: Dr. A. Maitland Ramsay. Assistant Surgeons: Dr. John Rowan, Dr. H. Wright Thomson, Dr. John Gilchrist, Dr. John Pearson, and Dr. J. A. Wilson. Extra Assistant Surgeons: Dr. W. H. Kiep and Dr. A. R. Muir. Pathologist: Dr. J. H. Teacher. Electrician: Dr. John Gilchrist. Anæsthetist: Dr. R. H. Henderson. House Surgeon: Dr. Margaret J. Brown. This institution is the Ophthalmic Department of the Royal Infirmary. A post-graduate course is given by Dr. Ramsay and assistants during September. Clinical instruction is given in the summer session to students of the University and Queen Margaret College, and in winter to students of St. Mungo's College and to all who take the class.

GLASGOW EYE INFIRMARY, Berkeley-street and Charlotte-street.—This institution, the largest of its kind in Scotland, was founded in 1824. The Infirmary now consists of two large buildings—that in Berkeley-street being occupied as the Infirmary proper, and that in Charlotte-street (new buildings opened June, 1894) as a dispensary. The Infirmary is devoted exclusively to the treatment of Diseases of the Eye, and is intended primarily to provide treatment, and, when necessary, board and lodging, for those who are unable to do so for themselves. The average number of new patients for the last ten years has been 25,718, and the total number of cases in 1913 was 27,865.

Students may attend on payment to the House Superintendent of the following fees:—For six months £1 1*s.* Fee for University qualifying course is £2 2*s.* All students when duly entered in the Infirmary Register may attend the clinical instruction of any or every member of the medical staff on production of their tickets. The days on which the surgeons respectively attend to receive patients may be ascertained at the Infirmary. Students have the privilege of being present in the Dispensaries at such hours as are arranged. They may enter the wards along with the surgeon whose clinique they are attending when he visits his patients. They may also be present at operations under the sanction of the surgeon operating, but no student may enter the wards or operating-room except under the aforesaid regulation. The wards and dispensary are recognised by the University of Glasgow for the purpose of instruction in ophthalmology for graduation in medicine. Secretary and Acting Treasurer: Harold John Black, 88, West Regent-street, Glasgow. House Superintendent: James H. Archibald. The medical session opens in October. The Medical Staff is as follows:—Surgeons: Dr. A. Freeland Fergus, Dr. Andrew Wilson, Dr. James Hinshelwood, Dr. Leslie Buchanan, Dr. A. J. Ballantyne, and Dr. A. Lewis MacMillan. Extra Surgeons: Dr. Henry L. G. Leask, Dr. W. Cochrane Murray, and Dr. Brownlow Riddell. Assistant Surgeons: Dr. W. B. Inglis Pollock, Dr. Samuel Capie, and Dr. J. Barbour Stewart. Pathologist: Dr. M. Logan Taylor. Honorary Consulting Medical Electrician: Dr. James R. Riddell. Honorary Anæsthetist: Dr. Fred. L. Napier. House Surgeon: Dr. James Angus. Assistant House Surgeon: Dr. S. Meighan. A Post-graduate Class will be held. Fee 1 guinea.

GLASGOW EAR, NOSE, AND THROAT HOSPITAL, 27 and 28, Elmbank-crescent.—14 beds and two cots. New patients (1913) 3334. Attendances at out-patient department 15,000. Admitted to in-door department 190. Surgeon: Dr. Thomas Barr. Assistant Surgeons: Dr. J. Galbraith Connal, Dr. W. S. Syme, and Dr. J. Stoddart Barr. Extra Assistant Surgeons: Dr. H. Whitehouse and Dr. G. B. Eadie. Clinical instruction is given in connexion with Dr. Thomas Barr's course on Diseases of the Ear at the University, Dr. Connal's course on Diseases of the Ear at Anderson's College, and Dr. Syme's course on Diseases of the Throat and Nose at the Western Medical School.

UNIVERSITY OF ST. ANDREWS (UNITED COLLEGE, ST. ANDREWS AND UNIVERSITY COLLEGE, DUNDEE).

The following are extracts from the Regulations for Degrees in Medicine contained in Ordinance No. 5 of the University Court of the University of St. Andrews. These regulations came into force on August 2nd, 1910. Four degrees in Medicine and Surgery shall be conferred by the University of St. Andrews—viz., Bachelor of Medicine (M.B.), Bachelor of Surgery (Ch.B.), Doctor of Medicine (M.D.), Master of Surgery (Ch.M.), and a Diploma in Public Health. The whole curriculum may be taken at University College, Dundee, or the first two years of the course may be taken at St. Andrews and the remaining three years in Dundee. The degrees of M.B. and Ch.B. shall always be conjoined. Before commencing his medical studies each student shall pass a Preliminary Examination in (*a*) English, (*b*) Latin, (*c*) Elementary Mathematics, and (*d*) one of the following optional subjects: (α) Greek, (β) French, (γ) German, (δ) Italian, (ε) any other approved Modern Language. A degree in Arts or in Science in any of the Universities of the United Kingdom and in some colonial and foreign universities shall exempt from the Preliminary Examination. The Preliminary Examination for graduation in Medicine and Surgery, Arts or Science, of the University of St. Andrews is accepted as equivalent to the Registration Examination required by the General Medical Council (the certificate to include the required subjects). Also the Final Examination for a degree in Arts or Science and the Final Examination for the Diploma of LL.A.

Degree of Bachelor of Medicine and Bachelor of Surgery.—Candidates must have been engaged in medical study for at least five years. In each of the first four years the candidate must have attended at least two courses of instruction in one or more of the subjects of study specified below, each course extending over a session of not less than five months, either continuous or divided into two terms, or, alternatively, one such course along with two courses, each extending over a session of not less than two and a half months. During the fifth or final year the candidate shall be engaged in clinical study for at least nine months at the Infirmary of Dundee or at one or more of such public hospitals or dispensaries, British or foreign, as may be recognised for the purpose by the University Court. The candidate must have received instruction in each of the following subjects of study, including such examinations as may be prescribed in the various classes—viz.: Anatomy, Practical Anatomy, Chemistry, Materia Medica, Physiology, or Institutes of Medicine, Practice of Medicine, Surgery, Midwifery and the Diseases peculiar to Women and Infants, Pathology, Practical Chemistry, Physics (including the Dynamics of Solids, Liquids, and Gases, and the Rudiments of Sound, Heat, Light, and Electricity), Elementary Botany, Elementary Zoology, Practical Physiology, Practical Pathology, Forensic Medicine, and Public Health. The candidate must have attended for at least three years the Medical and Surgical Practice either of the Infirmary of Dundee or of a General Hospital elsewhere which accommodates not fewer than 80 patients and possesses a distinct staff of physicians and surgeons and is recognised for the purpose by the University Court. Additional subjects of study are Practical Pharmacy, Mental Diseases, Practical Midwifery, Operative Surgery, Vaccination, Children's Diseases, Fevers, Ophthalmology, Diseases of the Ear, Throat, and Nose, Anæsthetics, and Post-mortem Examinations.

With respect to the places and institutions at which the studies of the candidate may be prosecuted the following regulations shall have effect:—1. Two of the five years of medical study must be spent in the University of St. Andrews. 2. The remaining three years may be spent in any University of the United Kingdom or in any Indian, Colonial, or Foreign University recognised for the purpose by the University Court, or in such medical schools or under such teachers as may be recognised for the purpose by the University Court.

Women shall be admitted to graduation in Medicine, subject to the provisions of Ordinance No. 18 [General No. 9—Regulations for the Graduation of Women and for their Instruction in the Universities]: Provided always that every candidate for graduation shall produce evidence of having satisfied the conditions herein laid down with respect to the Preliminary Examination, and shall be examined in all the subjects necessary for graduation by the Examiners of the University of St. Andrews. All the classes necessary for graduation shall be taken in the University of St. Andrews, except in so far as instruction obtained elsewhere is allowed by the said Ordinance.

Professional Examinations for the Degrees of Bachelor of Medicine and Bachelor of Surgery.—Each candidate shall be examined both in writing and orally, and also clinically where the nature of the subject admits, in the following divisions—viz., first, in Botany, Zoology, Physics, and Chemistry; second, in Anatomy and Physiology; third, in Materia Medica and Pathology and Forensic Medicine and Public Health; and fourth, in Surgery, Clinical and Operative Surgery, Practice of Medicine and Clinical Medicine, and Midwifery and Gynæcology (Systematic and Clinical).

The fee to be paid for the degrees of Bachelor of Medicine and Bachelor of Surgery shall be 22 guineas, and the proportion of this sum to be paid by a candidate at each division of the examination shall be regulated from time to time by the University Court. The fee to be paid for the degree of Doctor of Medicine shall be 15 guineas. The fee to be paid for the degree of Master of Surgery shall be 15 guineas.

The whole medical curriculum can be taken in University College or the first two years in United College.

Bursaries, United College, St. Andrews.—Fourteen Taylour Thomson Bursaries for female medical students of the annual value of from £20 to £30 each, tenable for one or two years. The Bursaries are awarded in the order of merit, the most valuable ones being given to those students who obtain the highest marks in the Preliminary Examination and who are prepared to take two Anni Medici at the United College, St. Andrews.

University College, Dundee.—(*a*) Open to either sex. Eleven Entrance Bursaries of £15, tenable for one year. (*b*) Open to either sex: Four £20 and three £15, second year. (*c*) Four £20 and two £15, third year. (*d*) Two £20, fourth year. (*e*) Two £20, fifth year. (*f*) Bute Bursary, founded in 1893 by the late Most Honourable the Marquis of Bute, K.T. This Bursary consists of the free proceeds of £1000. (*g*) Two Bursaries of the annual value of £25, tenable for three years at either University College, Dundee, or at any Scottish University (local candidates only).

Professors—Natural Philosophy: William Peddie, D.Sc., F.R.S.E. Chemistry: Alexander MacKenzie, M.A., Ph.D., Natural History: D'Arcy W. Thompson, M.A., C.B. Botany: Patrick Geddes, F.R.S.E. Anatomy: J. Yule Mackay, M.D., LL.D. Physiology: E. W. Reid, B.A., D.Sc., M.B., M.R.C.S., F.R.S. Pathology: L. R. Sutherland, M.B., C.M. Surgery: D. MacEwan, M.D. Medicine: Alexander M. Stalker, M.A., M.D. Midwifery: J. A. C. Kynoch, M.B., F.R.C.P. & S. Edin. Materia Medica: C. R. Marshall, M.A., M.D.

United College of St. Salvator and St. Leonard.—Professors—Natural Philosophy: A. S. Butler, M.A. Natural History: W. C. MacIntosh, M.D., LL.D., F.R.S. Chemistry: James C. Irvine, D.Sc., Ph.D. Anatomy: James Musgrove, M.D., C.M. Physiology: Percy T. Herring, M.D.

For further particulars apply to Professor Kynoch, Dean of the Medical Faculty, University College, Dundee.

University College, Dundee.—This College is one of the constituent colleges of the University of St. Andrews. In the medical buildings there are spacious and well-equipped laboratories and work-rooms for Anatomy, Physiology, Materia Medica, Pathology, Ophthalmology, Public Health, Medicine, Surgery, and Gynæcology. The complete medical curriculum can be taken in Dundee. For classes, fees, &c., see under University of St. Andrews.

Royal Infirmary, Dundee—The Infirmary contains 400 beds, including special wards for the Diseases of Women, Children, Eye, Ear, and Throat, Skin, and for Obstetric cases. There is in addition an Extern Obstetric Department. There were during last year 13,624 out-patients and 1280 home patients. The Royal Infirmary offers exceptional facilities for practical work to students. Appointments: Six qualified Resident Medical Officers are appointed every six months and one non-resident Obstetric Assistant. Clinical Clerks and Dressers are attached to the Physicians and Surgeons, and students are appointed as assistants in the Pathological Department. There are in connexion with the clinical courses Tutorial Classes in Medicine and Surgery. Instruction is also given in Practical Pharmacy and Materia Medica and in Practical Dentistry. Further information can be obtained from Dr. Fraser, Medical Superintendent.

Royal and District Asylums, Dundee (five miles from City). Number of patients, 490.—Physician Superintendent: Dr. William Tuach-Mackenzie. Lectures on Mental Diseases and clinical instruction in connexion with University College, Dundee (University of St. Andrews), are given during the Summer Session at University College and at the Royal and District Asylums by Dr. Tuach-Mackenzie. There are two paid qualified Resident Assistants and two unpaid Resident Clinical Assistants.

UNIVERSITY OF ABERDEEN.

The University of Aberdeen grants four degrees in Medicine and Surgery—viz., Doctor of Medicine (M.D.), Master of Surgery (Ch.M.), Bachelor of Medicine (M.B.), and Bachelor of Surgery (Ch.B.). The two degrees of M.B. and Ch.B. are not conferred separately, and the higher degrees of M.D. and Ch.M are only granted to holders of the M.B. and Ch.B. degrees.

Degrees of M.B. and Ch.B.—Before commencing his medical studies each student must pass a Preliminary Examination in (1) English, (2) Latin, (3) Mathematics, and (4) Greek, or French, or German. In the case of a candidate whose native language is not English an examination in the candidate's native language may be substituted for one in French or German, and an examination in any other classical language for one in Latin or Greek. The curriculum for the degrees extends over a period of five years, during which attendance is required in the following subjects: Botany, Zoology, Physics, Chemistry (Systematic and Practical), Anatomy (Systematic and Practical), Physiology (Systematic and Practical), Materia Medica and Therapeutics, Practical Pharmacy, Pathology (Systematic and Practical), Medical Jurisprudence and Public Health, Surgery, Medicine, and Midwifery.

Candidates must attend for at least three years the medical and surgical practice of a recognised hospital accommodating at least 80 patients and having a distinct staff of physicians and surgeons, and they must have attended courses of at least nine months in clinical medicine and clinical surgery. The candidate must have acted as clerk in the medical and dresser in the surgical wards of a hospital and must have attended for at least six months the practice of a dispensary or the out-practice of a hospital, &c. Attendance is also required on courses in Mental Diseases, Fevers, Ophthalmology, Post-mortem Examinations, and other special subjects. The candidate is also required to have been properly instructed in Vaccination and to have attended at least 12 Midwifery cases.

Professional Examinations are held twice in each year—namely, in March and July, directly after the close of the winter and summer sessions.

The fee for the degrees of M.B. and Ch.B. amounts to £23 2*s.* Matriculation fee for the winter and summer sessions, £1 1*s.*; summer session alone, 10*s.* 6*d.*

Besides the Royal Infirmary, students have the opportunity of attending the following institutions: City Fever Hospital, Sick Children's Hospital, General Dispensary, and Lying-in and Vaccine Institutions (daily), Royal Lunatic Asylum, Ophthalmic Institution, &c.

Degrees of M.D. and Ch.M.—Candidates for either of these degrees must already hold the degrees of M.B. and Ch.B. of Aberdeen. A thesis has to be presented for approval by the Medical Faculty and an examination has to be passed in Clinical Medicine or Clinical Surgery, as the case may be. Fee for each of the degrees £10 10*s.*

A diploma in Public Health is granted by the University to graduates in Medicine of a University in the United Kingdom, after a special examination. The diploma can be entered on the Register of the General Medical Council.

Application for further information should be addressed to the Secretary of the Medical Faculty.

Professors—Physics: C. Niven, M.A., D.Sc., F.R.S. Physiology: J. A. MacWilliam, M.D. Medicine: Ashley W. Mackintosh, M.D. Chemistry: Fred. Soddy, M.A., F.R.S. Anatomy: R. W. Reid, M.D., F.R.C.S. Surgery: John Marnoch, M.B., C.M. Materia Medica: J. T. Cash, M.D., LL.D., F.R.S. Midwifery: Robert G. McKerron, M.D. Forensic Medicine: Matthew Hay, M.D., LL.D. Botany: J. W. H. Trail, M.D., F.R.S. Pathology: (vacant). Natural History: J. Arthur Thomson, M.A., LL.D.

Scholarships and Prizes.—In the Faculty of Medicine of the University of Aberdeen there are the following Bursaries, Scholarships, and Prizes:—Bursaries: about 15 Bursaries (competition and presentation) are open each year, of £15 to £30 per annum in value, most of them being tenable for three years; certain other Bursaries are not confined to the Faculty of Medicine, but may be held by Arts Students. Scholarships: five Post-Graduate Scholarships, value £36 to £160 per annum. Prizes and Medals: 13 Gold Medals and Prizes for proficiency in special departments, &c.

Clinical Instruction.—Aberdeen Royal Infirmary.—Contains 270 beds. Consulting Physicians: Dr. David W. Finlay and Dr. G. M. Edmond. Physicians and Lecturers on Clinical Medicine: Professor Ashley W. Mackintosh, Dr. A. H. Lister, and Dr. W. R. Pirie. Assistant Physicians: Dr. Thomas Fraser, Dr. A. W. Falconer, and Dr. Wm. F. Croll. Consulting Surgeons: Sir Alex. Ogston, K.C.V.O., Dr. J. C. O. Will, and Dr. J. Mackenzie Booth. Surgeons and Lecturers on Clinical Surgery: Dr. J. Scott Riddell, M.V.O., Professor John Marnoch, and Mr. H. M. W. Gray. Assistant Surgeons: Mr. John W. Milne, Mr. Fred. K. Smith, and Mr. G. Herbert Colt. Ophthalmic Surgeon: Mr. Charles H. Usher. Assistant Ophthalmic Surgeons: Mr. Wm. Clark Souter and Mr. H. Edgar Smith. Consulting Gynæcologist: Dr. Wm. Stephenson; Gynæcologist: Professor Robert Gordon McKerron. Dental Surgeon: Mr. James M. P. Crombie. Physician for Diseases of the

Skin: Mr. John F. Christie. Surgeon for Diseases of the Ear, Nose, and Throat: Dr. Henry Peterkin. Pathologist: (vacant). Assistant Pathologist: Dr. George Mellis Duncan. Anæsthetist: Dr. Alex. Ogston. Assistant Anæsthetists: Dr. James Robertson, Dr. John Johnston, and Dr. Wm. Anderson. Medical Electrician: Dr. John R. Levack. Assistant Medical Electrician: Dr. Frederick Philip. Medical Superintendent and Clinical Registrar: Dr. William Sinclair. Clerk, Treasurer, and Factor: Mr. A. Scott Finnie. Offices: 343, Union-street.

ABERDEEN ROYAL ASYLUM.—Contains, with hospital attached to main institution and agricultural branch, about 986 beds. Medical Superintendent: Dr. William Reid. Assistant Physicians: Dr. Arthur Kellas, Dr. A. W. H. Cheyne, and Dr. J. M. H. Reid. Clerk, Treasurer, and Factor: Mr. A. Scott Finnie, 343, Union-street, Aberdeen. Clinical instruction is given to students during three months in summer.

SCOTTISH MEDICAL CORPORATIONS GRANTING DIPLOMAS.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH, ROYAL COLLEGE OF SURGEONS OF EDINBURGH, ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.

These Colleges have made arrangements by which, after one series of examinations, held in Edinburgh or Glasgow, or both, the student may obtain the diplomas of the three Bodies.

The three Bodies grant their Single Licences only to candidates who already possess legal qualifications in Medicine or Surgery. Copies of the Regulations for the Single Licence of any of the Bodies may be had on application to the respective secretaries.

Professional Education.—I. The candidate must produce certificates or other satisfactory evidence of having attended the following separate and distinct courses of instruction: Physics, three months; Elementary Biology, three months; Chemistry, six months; Practical or Analytical Chemistry, three months; Anatomy, during at least six months; Practical Anatomy, twelve months; Physiology, six months; Materia Medica, three months; Pathology (including Practical Pathology), nine months; Practice of Medicine, six months; Clinical Medicine, nine months; Principles and Practice of Surgery, six months; Clinical Surgery, nine months; Midwifery, three months; Gynæcology, one course of not less than 13 meetings; Diseases of Children, one course of not less than 13 meetings. Medical Jurisprudence and Public Health, three months. The certified attendance on lectures, demonstrations, and practical work must not be less than three-fourths of the total number of roll-calls. II. The candidate must also produce the following certificates:—(*a*) Of having personally attended not less than six cases of labour, or alternatively attendance on 12 cases of labour, at least five of these to be conducted personally under the direct superintendence of the practitioner who signs the certificate, who must be a registered medical practitioner, but the practical midwifery applicable to students commencing medical study on and after Oct. 1st, 1908, is as follows: 1. Every student before commencing the study of Practical Midwifery shall have attended a course of lectures on Surgery and Midwifery and be required to have held the offices of Clinical Medical Clerk and Surgical Dresser. 2. Every student shall be required either—(1) to have attended the indoor practice of a lying-in hospital or the lying-in wards of a general hospital for a period of three months to the satisfaction of the medical officer in charge, and after having received therein practical instruction in the conduct of labour, under the personal supervision of a medical officer, to have conducted 12 cases of labour under official medical supervision; or (2) to have conducted not less than 12 cases of labour, subject to the following conditions—That he has during one month given regular daily attendance upon the indoor practice of a lying-in hospital or the lying-in wards of a general hospital or Poor-law infirmary recognised for that purpose by any of the licensing bodies, and that he has therein conducted cases of labour under the personal supervision of a medical officer of the hospital or infirmary, who shall, when satisfied of the student's competence, authorise him to conduct outdoor cases under official medical supervision 3. No certificate that the student has conducted the above-mentioned 12 cases of labour shall be accepted unless it is given by a member of the staff of a lying-in hospital or of the maternity charity of a general hospital or of a dispensary having an obstetric staff recognised for that purpose by any of the licensing bodies or of a Poor-law infirmary having a resident medical officer so recognised. (*b*) Of having attended. for two and a half months, instruction in Practical Pharmacy; the certificate to be signed by the teacher. who must be a member of the Pharmaceutical Society of Great Britain, or the superintendent of the laboratory of a public hospital or dispensary, or a registered practitioner who dispenses medicines to his patients, or a teacher of a class of Practical Pharmacy. (*c*) Of having attended for 27 months the Medical and Surgical practice of a public general hospital containing on an average at least 80 patients available for clinical instruction and possessing distinct staffs of physicians and of surgeons. Evidence must be produced that the candidate has acted as Surgical Dresser and Medical Clinical Clerk for not less than three months in the wards in each case, and has received practical instruction in administration of anæsthetics. (*d*) Of having attended for six months the practice of a public dispensary especially recognised by any of the above authorities, or the out-patient practice of a recognised general hospital or of having acted for six months as pupil to a registered practitioner who either holds such a public appointment, or has such opportunities of imparting practical knowledge as shall be satisfactory to the coöperating authorities; this attendance should be made after the student has passed the First and Second examinations. (*e*) Of having been instructed in the Theory and Practice of Vaccination by a Public Vaccinator authorised by the Local Government Board to grant certificates of proficiency in vaccination and of having performed operations under the teacher's inspection during a period of not less than six weeks.

The above Course of Hospital Practice, and the above Courses of Clinical Medicine and Clinical Surgery shall be attended at a recognised Public General Hospital, possessing distinct staffs of Physicians and of Surgeons, and containing on an average not less than 80 patients available for Clinical Instruction.

In addition to the courses above prescribed, candidates are required to attend the following courses: Diseases and Injuries of the Eye, three months; Insanity, three months; Infectious Diseases, three months; Gynæcology, three months; Diseases of Children, three months.

The curriculum lasts for five years; the fifth year should be devoted to clinical work at one or more public hospitals or dispensaries. The period of three years devoted to hospital practice may include clinical instruction in special subjects, and must also include instruction in administration of anæsthetics and attendance at post-mortem examinations. The student's regularity of attendance in the wards and out-patients' departments of the hospitals and at the post-mortem examinations should be duly ascertained and noted on the certificate.

Students are recommended to pay particular attention to practical work in connexion with all the departments of study, and to avail themselves of opportunities of acquiring practical acquaintance with special departments of Clinical Study, such as Diseases of the Ear, Throat, and Skin, Venereal Diseases, and Operative Surgery. The examinations shall be so conducted as to test practical knowledge.

Candidates shall be subjected to four professional examinations:—

First Examination.—The First examination shall embrace the following subjects—(1) Physics, (2) Chemistry, including Practical Chemistry, and (3) Elementary Biology. The fees payable for admission to the First examination shall be —for the whole examination, £5, for re-entry in all the subjects, £3, in one or two subjects, £2 10*s.*; for each subject separately, £2 10*s.*; and for re-entry, £2.

Second Examination.—The Second examination shall embrace Anatomy and Physiology, including Histology; and candidates may be admitted to this examination at the end of the second year of medical study. The fees payable for admission to the Second examination shall be—for the whole examination, £5, and for re-entry after rejection, £3 for both subjects, and for each of the subjects separately, £3, and for re-entry for each subject after rejection, £2.

Third Examination.—The Third examination shall embrace Pathology and Materia Medica with Pharmacy. The fees payable for admission to the Third examination shall be—for the whole examination, £5; for re-entry in both subjects after rejection, £3; and for each of the subjects separately, £3, and for re-entry for each subject after rejection, £2.

Final Examination.—The Final examination shall not be taken earlier than the end of the fifth year of study and shall embrace the following subjects:—Medicine, including Therapeutics, Medical Anatomy, and Clinical Medicine; Surgery, including Surgical Anatomy, Clinical Surgery, and Diseases and Injuries of the Eye; Midwifery and Diseases of Women; and Medical Jurisprudence and Public Health, but it is optional to candidates who have passed the Third Examination to be admitted to the subject of Medical Jurisprudence and Public Health on lodging certificates of having attended the necessary course in that subject at any time; but the subjects of Medicine, Surgery, and Midwifery shall be taken together at any time after the end of the fifth Winter Session, provided that a period of 24 months has elapsed since passing the Second Examination. All candidates shall be subjected, in addition to the written and oral examinations, to clinical examinations in Medicine and Surgery, which shall include the Examination of Patients, Physical Diagnosis, the Clinical use of the Microscope, Examination of the Urine and Urinary Deposits, Surgical Appliances, Bandages, Surface Markings, &c. The fees payable for the Final Examination shall be—for the whole examination, £15, for re-entry after rejection, £5, and for the subjects of Medical Jurisprudence and Public Health when taken separately, £5, with £3 for re-entry in that subject.

Candidates who enter on the footing of having passed the earlier examination at another Board shall pay the fees in respect of these examinations, as well as the Final examination fees.

There are six periods of examination annually, four in Edinburgh and two in Glasgow, and candidates may present themselves at either examining centre irrespectively of the place of the previous examination. The Registrar in Edinburgh is Mr. D. L. Eadie, 50, George-square, and the Registrar in Glasgow, Mr. Walter Hurst, 242, St. Vincent-street, to whom fees and certificates must be sent for the respective examinations.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH: THE MEMBERSHIP AND FELLOWSHIP.

In addition to the diplomas granted by the Scottish Conjoint Board the Royal College of Physicians grants its Single Licence to candidates already possessing legal qualifications for professional practice.

The Royal College of Physicians of Edinburgh grants a *Membership* and a *Fellowship.*

Membership.—A candidate, who must be a Licentiate of a British or Irish College of Physicians, or a graduate of a British or Irish University and 24 years of age, is examined in medicine, therapeutics, and in any branch of the departments of medicine specially professed, such as general pathology, psychology, public health, obstetrics, gynæcology, diseases of children, tropical medicine, or medical jurisprudence. The fee for the Membership is £36 15*s.*, 15 guineas of which will be returned to any successful candidate who was already a Licentiate of the College at the time of qualifying for the Membership.

Fellowship.—The Fellows are selected from the ranks of the *Members.* They must be 25 years of age. The fee is £64 18*s.*

The College grants its *Single Licence* on terms similar to those of the Royal College of Surgeons of Edinburgh, as mentioned in the next section.

Further information can be obtained from the secretary.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH: THE FELLOWSHIP.

The Royal College of Surgeons of Edinburgh grants a diploma of Fellowship after examination to the holders of the surgical degrees of diplomas of such British examining bodies, as well as of the holders of such surgical degrees of the Universities of Canada, Australia, New Zealand, and the Indian Empire as are recognised by the College. The candidates for the examination must be 25 years of age and must have been engaged in practice for at least two years. The examination is of a practical nature, partly written and partly *viva voce*, and must include surgery and surgical anatomy, operative surgery, and clinical practice. One optional subject must also be taken, the range of these specialisms covering nearly every branch of medicine. The fee to be paid on entering for examination for Fellowship is £45, £10 of which is remitted to those who already hold the Licentiateship of the College. Candidates rejected at the examination obtain repayment of fee less £10 retained for examination expenses. One month's notice of intention to present himself for examination must be given by the candidate to Mr. D. L. Eadie, 50, George-square, Edinburgh, clerk to the College, together with credentials signed by two Fellows of the College, one of whom must be a resident in Edinburgh, unless a special application be made to the President and the Council of the College.

SINGLE LICENCE.

The Royal College of Surgeons of Edinburgh admits to the examination for its Single Licence any candidate who already holds a Diploma in Medicine of any British, Indian, or Colonial university or of any British or Colonial College of Physicians, or of the Society of Apothecaries of London or Apothecaries' Hall, Dublin, granted under the provisions of the Medical Act, 1886, whose preliminary examination and course of professional study is proved to be sufficient to fulfil the requirements of the College, or to those who have passed a full examination for any of the above. Female practitioners are now admitted to the Licence of the College but not to the Fellowship, and the regulations for the Licence apply to practitioners of either sex.

Every candidate for a surgical diploma must have followed his course of study in a university, or in an established school of medicine, or in a provincial school specially recognised by the College of Surgeons of that division of the United Kingdom in which it is situate.

Under the title Established School of Medicine are comprehended the medical schools of those cities of Great Britain and Ireland in which Diplomas in Surgery are granted, and such colonial and foreign schools as are similarly circumstanced in the countries in which they exist.

Professional Examination for the Single Diploma of the College.—Candidates for the Diploma of the College will be subjected to one professional examination, partly in writing and partly practically and orally.

Opportunities for the examinations will be presented four times in each year. On each of these occasions the candidates will assemble to write answers to the questions proposed, and the clinical and oral examinations shall be conducted on the days immediately succeeding.

Unsuccessful candidates will be remitted to their studies for a period to be determined by the judgment of the examiners, but not in any case for less than three months.

The examination will embrace the principles and practice of surgery (including operative surgery and surgical pathology), clinical surgery, and surgical anatomy, and will not take place before the termination of the full period of study.

Applications for examination must be made to Mr. D. L. Eadie, not later than one week prior to the date of examination.

On the production of the required documents Mr. Eadie will give the candidate an order authorising the examiners to admit him to examination.

The fee of £15 15*s.* payable to the College must be lodged in the hands of Mr. Eadie not later than one week preceding the examination day. The sum of £10 10*s.* will be returned to each unsuccessful candidate. Under special circumstances candidates can be examined on days other than those fixed by the regulations. The fee for a special examination is as follows—viz., £20 for examination, of which £10 will be returned to candidates remitted on examination.

In order to test more effectually the practical knowledge of candidates recent dissections and anatomical specimens will be employed during examination. They will also be subjected to a practical clinical examination in the Surgical Hospital, including the application of surgical apparatus, bandages, surface markings, &c., and may, if it be considered necessary to test their knowledge, be required to perform operations on the dead body.

THE ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.

Like the preceding corporations, the Royal Faculty of Physicians and Surgeons of Glasgow grants a Fellowship and a Licence to be held as separate qualifications.

Fellowship.—The Fellowship of the Faculty is granted after examination in medicine or surgery, together with an optional subject, which may be anatomy or physiology or be selected from any special branch of medicine or surgery, and 14 days' notice must be given by the candidate of his intention to present himself to Mr. Alexander Duncan, LL.D., the Faculty Hall, Glasgow. The fee for the Fellowship is £30, £10 of which sum are returned to any successful candidate who already holds the Licence of the Faculty. An additional sum of £20 is required in the case of candidates resident within seven miles of Glasgow. In certain circumstances Fellows may be elected as a mark of distinction.

Licence.—The Licence of the Royal Faculty is granted as a separate qualification to qualified practitioners in Medicine after examination in surgery, including surgical anatomy and clinical surgery. The fee is 15 guineas.

SCOTTISH PROVINCIAL ANCILLARY SCHOOLS AND HOSPITALS.

The hospitals which are recognised by the Scottish Conjoint Board, as places where professional study for their diplomas can be pursued are all those institutions which feed the medical faculties of the universities. In addition the Scottish Boards recognise all the places which are recognised by the English Conjoint Board (see p. 577) and the Irish Conjoint Board (see p. 601).

III.—IRELAND.

THE UNIVERSITIES.

UNIVERSITY OF DUBLIN (TRINITY COLLEGE).

Matriculation.—All students intending to join the School of Physic must pass a matriculation examination. This may be either the Public Entrance of Trinity College and a Junior Freshman Term or a special Medical Preliminary, or, for Extern Students, an examination recognised by the General Medical Council. The winter courses begin on Oct. 1st.

Degrees in Medicine (M.B.), Surgery (B.Ch.), and Midwifery (B.A.O.).—Candidates for these degrees must be of B.A. standing and must be for at least five academic years on the books of the Medical School, reckoned from the date of matriculation. The Arts course may be taken concurrently with the Medical course, and the B.A. degree need not be taken before the final medical examinations, but the Medical degrees are not conferred without the Arts degree. The following courses must be attended:—(1) Lectures—Systematic, Descriptive and Applied Anatomy, Chemistry and Practical Chemistry, Surgery and Operative Surgery, Histology, Botany, Zoology, Physics and Practical Physics, Physiology and Practical Physiology, Practice of Medicine, Midwifery, Pathology, Materia Medica and Therapeutics, Medical Jurisprudence and Hygiene; (2) three courses of nine months' attendance on the Clinical Lectures of Sir Patrick Dun's or other recognised Hospital; (3) Practical Vaccination, one month's instruction; (4) Mental Disease, three months; (5) Practical Midwifery with Clinical Lectures, including not less than 30 cases, six months; (6) Ophthalmic Surgery, three months. Three groups of examinations have to be passed. Preliminary Scientific Examination, including Physics and Chemistry, Botany, and Zoology. The Intermediate Medical, Part I., including Anatomy and Institutes of Medicine (Practical Histology and Physiology). The Intermediate Medical, Part II., including Applied Anatomy and Applied Physiology; and the Final Examination, which is divided into Part I., Materia Medica, Hygiene and Jurisprudence, and Pathology; and Part II., Medicine, including Clinical, Surgery, Midwifery, Gynæcology, Mental Diseases, Operations, and Clinical Ophthalmology. Part I. may be passed in the fourth year and Part II. in the fifth year. Fee for the *Liceat ad Examinandum*, £10. Fee for the degrees, £17.

Doctor in Medicine.—A Doctor in Medicine must have passed all the qualifying examinations and must be a B.A. of three years' standing. He must also read a thesis before the Regius Professor of Physic. Total amount of fees for this degree, £13.

Master in Surgery.—A Master in Surgery must be a Bachelor in Surgery of the University of Dublin of not less than three years' standing, and must produce satisfactory evidence of having been engaged for not less than two years from the date of his registration in the study, or study and practice, of his profession. He must then pass an examination in the following subjects: 1. Clinical Surgery. 2. Operative Surgery. 3. Surgical Pathology. 4. Surgery. 5. Surgical Anatomy (on the dead subject), and one of the following optional subjects:—1. Surgery in one of the following branches—viz., Ophthalmic and Aural, Gynæcological and Dental. 2. Mental Disease. 3. Medical Jurisprudence and Hygiene. 4. Advanced Anatomy and Physiology. 5. Comparative Anatomy. Fee for the degree of Master in Surgery, £11.

Master in Obstetric Science.—A Master in Obstetric Science must be fully qualified and produce a certificate of having attended a summer course in Obstetric Medicine and Surgery. He is then required to pass an examination in the following subjects:—1. Practice of Midwifery. 2. Gynæcology. 3. Anatomy of Female Pelvis and Elementary Embryology. 4. Clinical Gynæcology. Fee for the degree of Master in Obstetric Science, £5.

University Diplomas.—Candidates for the diplomas in Medicine, Surgery, or Obstetric Science must be matriculated in Medicine and must have completed two years in Arts and five years in Medical Studies. The Course and Examination necessary for the diplomas are the same as for the degrees. A diploma in Medicine, Surgery, and Midwifery is a registrable qualification conferred upon candidates who have completed a full five years' course in Medicine and two years in Arts. The diploma, like the degree, qualifies for registration. A diplomate, on completing his course in Arts and proceeding to the degree of B.A., may become a Bachelor by paying the degree fees. Fee for the *Liceat ad Examinandum*, £10. Fee for the diplomas in Medicine, Surgery, and Midwifery, £11.

Bachelor in Dental Science and Master in Dental Science.—The regulations under which these degrees are awarded can be obtained by application to the Registrar of the School of Physic.

Professors and Lecturers.—Regius Professor of Physic: James Little, M.D., LL.D. Regius Professor of Surgery: Sir Charles B. Ball, Bart., M.D., Ch.M., F.R.C.S. University Professor of Anatomy and Chirurgery: Andrew Francis Dixon, M.B., Sc.D. University Professor of Chemistry: Sydney Young, Sc.D., F.R.S. University Professor of Botany: Henry H. Dixon, Sc.D., F.R.S. Erasmus Smith's Professor of Natural Philosophy: William E. Thrift, M.A., F.T.C.D. Professor of Surgery: Edward H. Taylor, M.D. Professor of Zoology and Comparative Anatomy: H. W. Mackintosh, M.A. King's Professor of Practice of Medicine: James Craig, M.D. King's Professor of Materia Medica and Pharmacy: Walter G. Smith, M.D. King's Professor of Institutes of Medicine: W. H. Thompson, M.D., Sc.D. King's Professor of Midwifery: T. Henry Wilson, F.R.C.P.I. Lecturer in Medical Jurisprudence and Hygiene: Henry T. Bewley, M.D. Lecturer in Pathology: Alexander C. O'Sullivan, M.D., F.T.C.D. Lecturers in Dental Surgery and Pathology: A. W. W. Baker, M.D., M. Dent. Sc., and William George T. Story, M.B. Lecturer in Dental Mechanics: Joseph Cockburn, L.D.S. Lecturer in Orthodontia: E. Sheldon Friel, M. Dent. Sc. Lecturer in Anæsthetics: T. Percy C. Kirkpatrick, M.D.

Clinical instruction.—The hospital facilities for clinical instruction available in Dublin will be described below.

THE NATIONAL UNIVERSITY OF IRELAND.*

Matriculation.—All students intending to proceed to the medical degree of the University of Ireland must pass a matriculation examination, the next examination taking place in September in Dublin and at certain local centres.

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* No returns.

All students must pass in five subjects. All students must pass in the following subjects[1] except students not born in Ireland, and other students whose home residence shall have been outside Ireland during the three years immediately preceding their matriculation; but all such students will be expected to attend a course of instruction in Irish Literature and History prior to obtaining any degree in the University:—1. Irish. 2. Latin or Greek. 3. French, German, Italian, Spanish, Welsh, Dutch, or any other language approved by the Senate. 4. English. 5. Mathematics or Natural Philosophy.[2] 6. English, Latin, Greek, French, German, Welsh, Spanish, Italian, or any other modern language approved by the Senate, History and Geography, Mathematics, Natural Philosophy, or Physics[3] as an alternative, Chemistry, Botany, and for women candidates only, Physiology, and Hygiene. Candidates who under the regulations are exempted from the necessity of presenting Irish as one of their subjects may present as their fifth subject either a second language or a second science subject. Students entering for degrees in Medicine or Dentistry, if already registered by the General Medical Council, may be accepted as matriculated students of the Faculty of Medicine on passing the matriculation examination in any faculty of the University.

The following are the regulations for external students proceeding to medical degrees:—

Degrees of M.B., B.Ch., and B.A.O.—Printed forms of application for admission to any medical examination may be had from "The Registrar, The National University of Ireland, Dublin." Each candidate must send to the Registrar a printed form of application for admission, accurately filled up and signed by the candidate, together with the prescribed fee. 1. Students who pass the First Medical Examination in 1910, or have passed that examination in any year previously in the Royal University, may take Practical Chemistry, if the prescribed course of instruction has been pursued, at a special examination before or with the Second Examination in Medicine of the National University of Ireland, and on passing this special examination shall be regarded as having passed the First Examination in Medicine of the National University. 2. Students who, in October, 1910, had completed four years of study, may finish their studies under the Regulations prescribed by the Royal University.

Degrees of M.D., M.Ch., M.A.O.—Candidates may present themselves for the examination for any of these degrees after an interval of three academic years from the time of obtaining the M.B., B.Ch., B.A.O. degrees, but in the case of candidates who have obtained a degree in Arts or Science an interval of two years will be sufficient. All further information concerning fees, dates of examinations, production of certificates, and so on, can be obtained from the Registrar of the University. The same formalities have to be complied with for proceeding to the degree of M.Ch. and M.A.O.

The Constituent Colleges of the National University of Ireland at which the full curriculum for medical degrees can be obtained are University College, Dublin; University College, Cork; and University College, Galway.

UNIVERSITY COLLEGE, DUBLIN.—The University and the College were created by the Irish University Act, 1908, and by Charters issued in December, 1908. Former students of the Cecilia-street School of Medicine who graduated in the Royal University may become graduate members of the new College. The constitution of the College, like that of the Constituent Colleges of Cork and Galway, provides for a governing body, an academic council consisting of professors and coöpted lecturers, a body of graduate members, and a body of student members matriculated in the University. The first professors and lecturers were appointed by the Dublin Commissioners Irish Universities Act, 1908. The College teaching staff includes 50 professors in all the Faculties of the University. As in the other Constituent Colleges of the National University students do not live within the College, but the statutes make provision for the entrance of the students under officers of residence who have supervision of the lodgings of students approved by the College, and of the conduct of students outside the College. There are also approved places of residence in connexion with the College. The courses for Degrees in all Faculties are submitted to the University for consideration, and on approval become binding on the students of the College. Matriculated students on entering the College are required to attend before the President and sign the Observance of Rules of the College, becoming student-members. Students' societies have been formed for debating and reading of papers in connexion with the Faculties of Medicine, Science, and Law, as well as societies of a more general character. The athletic clubs are well patronised, and the annual sports in May attract large fields of competitors. The great majority of the students are proceeding to the Degrees of the National University of Ireland. The work of the College is at present conducted in the former Royal University buildings in Earlsford Terrace, in the College, St. Stephen's Green, and in Cecilia-street. The new buildings now being erected will form an impressive and splendid edifice worthy to rank with the well-known public buildings with which the Georgian period graced the city. The College library, begun in 1908, includes about 50,000 volumes. The College is connected indirectly through its staff with many of the hospitals of the city, and the students may take their courses of clinical instruction at any hospital recognised by the University.

Matriculation.—Almost all the students of the College are matriculated students of the National University of Ireland.

University Examinations in Medicine.—The First Examination includes Physics, Chemistry, Botany, and Zoology. The examination may be taken in two parts: Part I., Physics and Chemistry; Part II., Botany and Zoology. Honours may be obtained only when both parts are taken as one examination. The Second Examination includes Anatomy and Physiology. Both must be passed at the same time. The Third Examination includes Pathology, Medical Jurisprudence and Hygiene, and Materia Medica.

Degrees of M.B., B.Ch., and B.A.O.—The Examination in Medicine, Midwifery, Surgery, and Ophthalmology includes both the theoretical and the clinical branches. No student can enter for the M.B., B.Ch., or B.A.O. until the end of the fifth year when the curriculum has been completed. The course of study is as follows:—First year.—Winter: Anatomy and Practical Anatomy (required for the Second Examination),[4] Chemistry, Practical Chemistry, and Experimental Physics (with Laboratory Course). Summer: Zoology, Practical Zoology, Botany, and Practical Botany. Second year.—Winter: Anatomy, Practical Anatomy, Physiology, and Practical Physiology (physical and chemical). Summer: Anatomy, Practical Anatomy, Physiology, and Practical Histology. Third year.—Winter: Pathology, Surgery or Medicine, Hygiene, Medical Jurisprudence, and Practical Pharmacy. Summer: Materia Medica and Therapeutics, and Practical Pathology. Candidates are also required to attend a General Hospital for nine months (winter and summer). Fourth year, or fourth and fifth years.—Winter: Medicine or Surgery (the subject to be that not taken in the third year), and Midwifery and Gynæcology. Summer: Operative Surgery, Applied Anatomy, and Ophthalmology and Otology. Candidates are also required to attend a General Hospital for nine months (winter and summer), and to take instruction in Vaccination, and three months Fever Hospital. Fifth year.—If the Academic (Collegiate) Courses are taken as above, the Courses of the fifth year will be the following: Hospital Attendance, General Hospital, nine months; Clinical Ophthalmology and Otology, three months; Practical

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[1] The Senate has directed that candidates who presented themselves for the Matriculation Examination and who passed in certain subjects in 1912 or any previous year, may, when presenting themselves in the remaining subjects necessary to complete the examination, select such completing subjects in accordance with the regulations as to groups of subjects which were in force in 1912. Such candidates will not be obliged to present themselves for examination in Irish. Such candidates, however, while they may select the completing subjects as above, must present themselves for examination in these subjects on the courses prescribed in each by the Regulations.

[2] Certificates of having passed in Chemistry or Physics at the Examinations of the Intermediate Education Board will be accepted only if the Honours Examination of the third or fourth years' course in these respective subjects has been passed. (A pass on the Honours Course will be accepted.) Students desiring to present Pass Chemistry or Pass Phyics must pass an examination in these subjects at the Matriculation Examination of the University.

[3] A candidate who takes Natural Philosophy in Group 5 cannot take Physics in Group 6.

[4] These courses are not required for the First Examination in Medicine, but must be taken in the first year to permit a candidate to qualify for admission to the Second Examination in Medicine at the end of the second year.

Midwifery and Gynæcology, six months; Mental Diseases, to be attended at a Lunatic Asylum, three months. (Note.—Practical Midwifery and Gynæcology may be taken in the fourth year after the Systematic Course of Midwifery, but it must not be taken concurrently with the period of attendance at Fever Hospital.) The degree of M.D. may be obtained either by examination or on published work.

The courses for the D.P.H. are on the ordinary lines, and the Bacteriological Laboratory is open for research throughout the session.

The following is the teaching staff of this school:—

Dean of the Faculty (*of the College*): Professor McLoughlin.

Professors.—Anatomy: Edward Patrick McLoughlin, B.A., M.B., B.Ch., B.A.O. Physiology: Bertram James Collingwood, B.A., M.D. Zoology: George Sigerson, M.D. Chemistry: Hugh Ryan, M.A., D.Sc. Physics: John A. McClelland, M.A., D.Sc., F.R.S. Pathology and Bacteriology: Edmund J. McWeeney, M.A., M.D., D.P.H., F.R.C.P. Irel. Medicine: Vacant. Surgery: John S. McArdle, M.Ch., F.R.C.S. Irel. Midwifery and Gynæcology: Alfred J. Smith, M.B., F.R.C.S. Irel. Materia Medica and Therapeutics: Martin Dempsey, B.A., M.D., F.R.C.P. Irel. Hygiene and Medical Jurisprudence: J. N. Meenan, M.B., B.Ch., B.A.O., D.P.H. Botany: J. Bayley Butler, M.A., M.B., B.Ch., B.A.O., and Louis Werner, M.B., F.R.C.S. Irel. Dental Surgery: E. Sheridan, F.R.C.S. Irel., L.D.S. Dental Mechanics: J. L. Potter, L.D.S.

Lecturers.—Ophthalmology: Vacant. Special Pathology: W. M. Crofton, B.A., M.B., B.Ch., B.A.O.

Assistants and Demonstrators.—Anatomy: Dr. G. Keating, Mr. H. S. Meade, F.R.C.S.I., and Dr. C. J. MacAuley. Chemistry: Mr. G. Ebrill, B.A., and Mr. T. Dillon, D.Sc. Medicine: Dr. J. F. O'Carroll. Pathology and Bacteriology: Dr. T. T. O'Farrell and Dr. W. D. O'Kelly. Pharmacy: Dr. M. Hayes. Physics: Mr. J. Nolan, M.Sc., and John J. Dowling, M.A. Surgery: Dr. A. Blayney. Physiology: Dr. James M. O'Connor.

Session 1914–15, Michaelmas and Hilary Terms: The dissecting room opens on Oct. 1st. An introductory class for students beginning the study of medicine is held from Oct. 6th to Oct. 13th. Ordinary medical lectures begin on Oct. 13th. Lectures are resumed on Jan. 11th, and the winter lectures terminate on March 26th. Trinity Term: Lectures begin on April 13th and end on June 30th. All the University Examinations in Medicine are held in spring and autumn, a first examination being also held in June. (*Note.*—No First Medical in the spring.)

Scholarships.—Entrance Scholarship Examination: A general Entrance Scholarship Examination is held for all Faculties, the value of the scholarships tenable for one year in the Faculty of Medicine varying from £50 to £20. There are five Second-year Scholarships of £30 each, tenable for one year, offered in the subjects of the First Medical Year—viz., Physics, Chemistry, Botany, and Zoology. Candidates must have attended the courses of the First Medical Year in the College, and must have passed the First Medical Examination of the University in 1913. Five Third-year Scholarships of £30 each, tenable for one year. The scholarships of the third year are offered in the subjects of Anatomy and Physiology. Medical students who have pursued Honours Second-year Courses in subjects of the Faculty of Science in the College may, if they so desire, compete for the scholarships in such subjects, instead of presenting Anatomy and Physiology. Candidates must have been student-members of the College. Students who passed the Second Examination before the year 1913 are not eligible. Three Scholarships of £30 each, tenable for one year, awarded to students of the College, of not more than four years' standing in the Faculty of Medicine, who obtain distinction at the B.Sc. Hons. Examination of 1913. Students awarded those scholarships are not eligible for College Exhibitions at the B.Sc. Examination. Five Fourth-year Scholarships of £30 each, tenable for one year, offered in the subjects of Pathology, Medical Jurisprudence, and Sanitary Science, and one of the following: Materia Medica, Medicine, Midwifery, Surgery. All candidates must have been student-members of the College. Students who passed the Third Examination of the University prior to the year 1913 are not eligible to compete for the Scholarships of this class. Within these regulations students of the fifth year, as well as of the fourth, are eligible to be candidates for those scholarships. Three Fifth-year Scholarships of £30 each, tenable for one year, offered for competition in the subjects of Medicine, Surgery, and Midwifery. The subjects are not to include clinical (or practical) examination. Candidates for these scholarships must have passed the Third Medical Examination of the University, and must not have passed, or have been candidates for, the M.B., B.Ch., and B.A.O. degrees. They must have been students of the College. They must have attended in the College the courses of lectures in the subjects they select for the examination. There is also in the Faculty of Medicine one Post-graduate Scholarship of the value of £80, tenable for one year. Candidates must have passed the M.B., B.Ch., and B.A.O. examinations in 1913. The Post-graduate Scholar will be required to pursue a Post-graduate Course and to undertake research work in Anatomy, Physiology, or Pathology. Candidates for this scholarship must have pursued the whole Undergraduate Course for the M.B., B.Ch., and B.A.O. degrees in the College. In the selection of the Scholar account will be taken of the distinction obtained by him in the Final Examinations for the M.B., B.Ch., and B.A.O. degrees, and in the previous examinations connected with the subjects in which he proposes to pursue post-graduate work. Exhibitions are offered to students of the College for distinction in the University Examinations in Medicine as follows: one of £20 and one of £10 each at each of the First, Second, Third, and Final Examinations. A gold medal is also offered to the student of the College of highest merit at the M.B., B.Ch., and B.A.O. Examinations of the year.

Fees.—The fees for Courses are similar to those of the other Dublin Medical Schools.

*UNIVERSITY COLLEGE, CORK: THE SCHOOL OF MEDICINE.—The building is provided with a very large, well-ventilated dissecting room supplied with electric light, with physiological, toxicological, pathological, and pharmaceutical laboratories, materia medica, anatomical and pathological museums, as well as a collection of surgical and obstetrical instruments and appliances. There are well-appointed physical, chemical, and biological laboratories, and a large natural history museum in the adjoining building, and part of the College ground is laid out as a botanical garden. The plant houses are well filled with plants and are open to the students in the class of Botany. The Library contains over 50,000 volumes and is open daily during term time to students. The Medical Museum occupies a large room erected at the northern end of the medical buildings. It consists of (1) an anatomical museum and bone-room, occupying the gallery; (2) pathological museum; and (3) materia medica museum. The two latter collections are on the ground floor. There is a large and representative collection of surgical instruments. The Students' Club is open to all men students of the College who pay the annual subscription of 2*s.* 6*d.* The club is a detached building containing reading, smoking, and refreshment rooms, kitchen, and lavatory. There is also a ladies' club, subscription 1*s.* The Mardyke grounds have been acquired by the College for football, athletics, &c., and there is also a practice ground within the walls of the College. There are also Gaelic football, Association football, cricket, hockey, hurling, lawn tennis, and athletic clubs, the last of these holding a public meeting once in each year in the Mardyke grounds.

Dean of the Faculty.—Professor A. E. Moore, M.B., B.Ch., B.A.O.

Professors.—Anatomy: D. P. Fitzgerald, M.B., B.Ch. Botany: H. A. Cummins, M.D., C.M.G. (Major, R.A.M.C.). Chemistry: A. E. Dixon, M.D. Experimental Physics: W. Bergin, M.A. Materia Medica: John Dundon, M.B., B.Ch., B.A.O., F.R.C.S. Eng., F.R.C.S. Irel. Medicine: W. Ashley Cummins, M.D., M.Ch. Obstetrics and Gynæcology: H. Corby, B.A., M.D., M.Ch. Pathology: A. E. Moore, M.B., B.Ch., B.A.O. Physiology: D. T. Barry, M.D., F.R.C.S. Surgery: C. Yelverton Pearson, M.D., M.Ch., F.R.C.S. Zoology: Marcus Hartog, M.A., D.Sc., F.L.S., F.R.H.S. Hygiene: Mr. D. D. Donovan. Medical Jurisprudence: Dr. P. T. O'Sullivan. Ophthalmology: Dr. A. W. Sandford.

Lecturer.—Mental Diseases: Dr. J. J. Fitzgerald.

Demonstrators.—Anatomy: Dr. W. F. O'Connor. Chemistry: Mr. J. Taylor, M.Sc., and Dr. J. L. McKee, Ph.D. Experimental Physics: Mr. P. Belas, B.A. Midwifery: Dr. M. Cagney. Pathology: Dr. W. Magner. Physiology: Dr. R. H. Barter. Surgery: Dr. C. B. Pearson. Zoology: Miss B. E. Dude, B.Sc.

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* No returns.

Terms.—All students who have been admitted as matriculated students are required to attend before the President and sign the Roll of Matriculated Students. Students who may be candidates for degrees in the National University of Ireland must have passed the Matriculation Examination of that University, and medical students must have passed a preliminary examination recognised by the General Medical Council. Candidates will be examined in Irish, Greek, or French or German, Latin, History, Geography, English, and Mathematics.

Admission of Medical Students.—Students in the Faculty of Medicine who have passed the First Professional Examination of the Conjoint Examinations of the Royal College of Physicians and the Royal College of Surgeons in Ireland, or of the Royal College of Physicians and Royal College of Surgeons of Edinburgh and the Faculty of Physicians and Surgeons of Glasgow, or of the Royal College of Physicians, London, and Royal College of Surgeons, England, may be admitted to the rank of second-year students on making application to the Council and submitting a certificate of having passed the examination. Similarly, students who have passed the Second Professional Examination of the same Colleges may be admitted to the rank of third-year students; and those who have passed the Third Professional Examination of the Dublin Colleges, or of the Edinburgh Colleges and Glasgow Faculties, may be admitted to the rank of fourth-year students.

Class Fees.—Anatomy, £3; Physiology, £3; Practical Anatomy, £3; Practical Physiology, £3; Practical Pathology, £3; Operative Surgery, £3; Operative Surgery repeated, £2; Practical Chemistry, £3; first year—Botany Lectures, £2; first year—Botany Lectures, practical work, £1; first year—Zoology Lectures, £2; first year—Zoology Lectures, practical work, £1; first year—Physics Lectures, £2; first year—Physics Lectures, practical work, £1; all other subjects, £2; re-attendance, £1. Except for Operative Surgery the fees for practical classes are not reduced on re-attendance. Students who are signed up for all their Practical Anatomy can attend in the dissecting-room (without subject) by paying £1 per term, this fee admitting to all demonstrations. Students who have passed their Anatomical Examination can attend in the dissecting-room (without subject) by paying £1 for the session or 10*s.* for a term.

Residence of Students.—There is no accommodation for the residence of students within the College, but students not living at home, or with relatives or friends, sanctioned by their parents or guardians, are required to live in a hostel or in recognised lodgings, a list of which can be obtained from the Secretary. All students are required to register their addresses each session in the book kept for that purpose in the hall porter's office, and to notify immediately to the Registrar any change of address during the session. St. Anthony's Hall, adjoining the College, is the property of, and is occupied by, the Franciscan Order. A number of sets of rooms, together with recreation and common rooms, are provided for lay students who may desire to live there. For full particulars apply to the Very Rev. Superior, St. Anthony's Hall, Fernhurst-avenue. The Ursuline Convent, Blackrock, has a house of residence, quite separate from their Secondary School, for Catholic women students. Separate bedrooms, dining, and recreation rooms will be provided. For terms and details apply to the Rev. Mother Superior, Ursuline Convent, Blackrock, Cork. Girls' Friendly Society Lodge, Dyke Parade, provides for other women students. For terms apply to Miss Roy. Women students coming from a distance and not living with friends or relatives are strongly urged to reside in a hostel.

Scholarships.—(*a*) Second Year.—In this year three scholarships, each of the value of £30, will be awarded on the result of the first University Examination in Medicine, held in Trinity Term, and taken as a whole. (*b*) Third Year.—Three scholarships, each of the value of £30, will be awarded on the result of the Second University Examination in Medicine, held in the Michaelmas Term, and taken as a whole. (*c*) Fourth Year.—Three scholarships, each of the value of £30, will be awarded on the result of the third University Examination in Medicine, held in Michaelmas Term, and taken as a whole. (*d*) Fifth Year.—The three scholarships obtained at the commencement of the fourth year by candidates may be continued for a fifth year should the conduct and progress of the holders have been satisfactory (as laid down in I. (*d*)); but will be each of the value of £20. (*e*) Two exhibitions, each of the value of £15, will be awarded, one in Clinical Surgery and one in Clinical Medicine, to students of the fifth year, on the result of Examinations to be held in the Trinity Term; these clinical exhibitions can be held with fifth year scholarships. (*f*) Blayney Scholarship.—This scholarship, worth about £32, will be awarded to the candidate obtaining the highest marks in Honours at the M.B., B.Ch., B.A.O. Examination, provided that (1) the candidate has been a student in University College, Cork, for at least the three years previous to the examination; (2) that not more than three years have elapsed from the passing of his Second Medical Examination; and (3) that the whole examination is taken at one time.

The Charles Gold Medal.—In January, 1909, the governing body of University College, Cork, received from John James Charles, M.D., F.R.S.E., formerly Professor of Anatomy and Physiology in Queen's College, Cork, £125 Guaranteed Preference Stock of the London and North-Western Railway Company, as well as a die, to provide a gold medal for competition amongst the students attending the courses of Anatomy or of Physiology in University College, Cork.

Clinical Instruction.—Students may attend the South Infirmary, Cork North Charitable Infirmary, the Mercy Hospital, the Cork District Lunatic Asylum, the Victoria Hospital for Diseases of Women and Children, the County Lying-in Hospital, the Cork Maternity, the Cork Fever Hospital, the Cork District Hospital, and the Cork Ear, Eye, and Throat Hospital.

South Infirmary and County of Cork General Hospital (100 beds).—Staff: Consulting Physician: Dr. P. J. Cremen. Physicians: Dr. P. T. O'Sullivan and Mr. Norman I. Townsend. Surgeons: Mr. H. R. Townsend, Mr. T. Gelston Atkins, and Mr. Henry Corby. Ophthalmic Surgeon: Mr. A. W. Sandford. Physicians for Extern Patients: Mr. E. W. Allsom and Dr. E. V. Cantillon. Surgeon for Extern Patients: Mr. R. P. Crosbie. Anæsthetist: Dr. M. V. Shanahan. Radiologist: Dr. G. Hegarty. Pathologist: Dr. A. E. Moore. Dentist: Mr. T. C. Butterfield. Honorary Secretary: Mr. N. I. Townsend. Clinical instruction is given daily in the wards. Special instruction on Ophthalmic Surgery and Diseases of Women and Children will be given in the special wards for such cases. Fee for perpetual ticket, £18 18*s.*; for 12 months, £8 8*s.*; for six months, £5 5*s.*; for three months, £3 3*s.* Two resident pupils will be appointed by competitive examination. Clinical prizes will be given by the staff at the close of the session.

Cork North Charitable Infirmary and County and City of Cork General Hospital (100 beds).—Physicians: Mr. D. D. Donovan and Dr. Edward Magner. Surgeons: Mr. Jeremiah Cotter, Mr. C. Y. Pearson, Mr. N. H. Hobart, and Mr. D. J. O'Mahony. Assistant Physician: Mr. R. B. Dalton. Assistant Surgeons: Mr. John Dundon and Mr. Richard P. Byrne. Resident Surgeon: Mr. D. M. Donovan. Resident Physician: Dr. A. Mullane. Pathologist: Dr. W. Magner. Surgeon Dentist: Mr. William Pericho. Dispensing Chemist: Mr. M. Tucker. Honorary Secretary: Mr. R. B. Dalton. Clinical instruction is given daily in the wards by the physicians and surgeons. Special instruction is given to Junior Students on two days weekly. Fee for perpetual ticket, £18 18*s.*; for 12 or nine months, £8 8*s.*; for six months, £5 5*s.*; and for three months, £3 3*s.* Two resident pupils are appointed quarterly by the medical staff. All resident pupils are required to be registered pupils of the Hospital. There is a special department for treatment of the eye, ear, throat, and nose under the charge of Mr. J. Bowring Horgan.

* *Mercy Hospital.*—Staff: Consulting Physician: Dr. P. J. Cremen. Consulting Surgeon: Dr. J. Cotter. Consulting Ophthalmic Surgeon: Dr. J. J. McMahon. Physician: Dr. D. J. O'Connor. Surgeons: Mr. J. Giusani and Mr. J. Dundon. Ophthalmic Surgeon: Mr. J. M. Browne. Surgeon Dentist: Mr. H. O'Keeffe. Resident Surgeon: Mr. O'Shea. Anæsthetist and Radiographer: Mr. Walter Rahilly. Pathologist: Dr. M. A. Shinkwin. This hospital contains 85 beds for medical and surgical cases. There is also a daily extern for medical and surgical cases, as well as for diseases of the eye, ear, and throat. Extern medical attendances, 3402; surgical attendances, 778; ophthalmic attendances and dental, 5374; operations successfully performed, 1142; intern patients, 1059. Major operations, 132; minor

operations, 570. Honorary Secretary to the Staff: Dr. James Browne.

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* No returns.

Cork District Lunatic Asylum.—Psychological Medicine: A course of Clinical Lectures on Mental Disease and Allied Neuroses will be delivered in the Cork District Lunatic Asylum on Mondays and Thursdays, commencing the first Thursday in February, by the Resident Medical Superintendent. All students wishing to enter for the course are expected to attend at the Asylum at 2.30 P.M. on that day. All information may be had at the Asylum from Dr. James J. FitzGerald, resident medical superintendent.

Victoria Hospital for Diseases of Women and Children (Cork).—Honorary Staff: Dr. Ashley Cummins, Dr. C. Yelverton Pearson, Dr. P. Lee, Dr. Hobart, and Dr. C. B. Pearson. Lady Superintendent: Mrs. George Armstrong. There are 75 beds. Clinical instruction on Diseases Peculiar to Children is given. The extern department is open daily at 9.30.

County and City of Cork Lying-in Hospital (Erinville, Western-road; founded 1798).—Staff: Honorary Consulting Physicians: Dr. W. E. Ashley Cummins, Dr. Cotter, and Dr. D. D. Donovan. Honorary Obstetric Surgeon: Mr. C. Yelverton Pearson. Physicians: Dr. N. H. Hobart, Dr. Lucy E. Smith, Dr. Daniel J. O'Connor, and Dr. P. J. O'Brien. Assistant Physicians: Dr. E. V. Cantillon and Dr. C. B. Pearson. This hospital contains 20 beds. Fee for six months' attendance, including clinical lectures, £3 3*s.* For further particulars apply to N. H. Hobart, honorary secretary to staff.

Cork Maternity (Batchelor's Quay).—Staff: Honorary Consulting Surgeon: Dr. H. Macnaughton-Jones. Consulting Obstetric Physicians: Dr. T. Gelston Atkins and Dr. Henry Corby. Obstetric Physicians: Dr. John Booth, Dr. Richard Crosbie, and Dr. Michael Cagney. Three resident pupils are taken into the Maternity. Poor women are attended at their own homes. Clinical lectures are delivered during the session. There is an extern department for the treatment of women's and children's diseases. Fee for attendance at clinical lectures and certificate, £3 3*s.* For further particulars apply to Dr. Henry Corby, honorary secretary to staff.

Cork Fever Hospital.—Staff: Ordinary Physicians: Dr. D. J. Flynn and Dr. T. Callaghan. Extraordinary Physician: Dr. D. Murphy. Resident Medical Officer and Registrar: Dr. A. G. Sutton. Upwards of 250 cases of various forms of fever and zymotic disease are treated yearly in this hospital. The Resident Medical Officer gives instruction in Practical Pharmacy, a certificate of which is necessary for the National University and Colleges of Physicians and Surgeons of Edinburgh.

Cork District Hospital (Douglas-road; 1200 beds).—Staff: Dr. W. E. Ashley Cummins (Professor of Medicine, University College, Cork, Examiner in Medicine, National University of Ireland), Dr. J. Giusani, Mr. D. Morrissy, and Mr. James T. O'Connor. Resident Medical Officers: Dr. R. J. Aherne and Dr. H. V. O'Shea. This hospital includes special buildings for fever and other infectious diseases (100 beds); for children's diseases (100 beds); and a Lock hospital, the only one in the South of Ireland (80 beds). It affords an extensive field for the study of all classes of diseases, acute and chronic, including special departments for gynæcology and diseases of the skin and nervous system. The physicians and surgeons visit the hospitals every morning at 10 o'clock. Lectures and clinical instruction are given daily in the wards by the physicians and surgeons. Further particulars may be obtained from Dr. W. E. Ashley Cummins, 17, St. Patrick's-place, honorary secretary, medical staff.

Cork Eye, Ear, and Throat Hospital (Western-road).—Staff: Visiting Surgeon: Dr. Arthur W. Sandford. Assistant Surgeons: Dr. T. H. D. Townsend and Dr. Vernon Wiley. Consulting Physician: Dr. W. E. Ashley Cummins. Consulting Surgeon: Dr. H. N. Hobart. This hospital is open to students attending the University College and others. Certificates of attendance for three or six months can be obtained. The hospital contains 35 beds. Over 4000 cases are treated during the year. Clinical instruction is given to students attending the hospital, with demonstrations on the use of special instruments. A course of Lectures on Ophthalmic Surgery is delivered during the session. For further information apply to Dr. Arthur Sandford, 13, St. Patrick's-place, Cork.

UNIVERSITY COLLEGE, GALWAY: SCHOOL OF MEDICINE.—The College contains well-lighted and ventilated dissecting-room and anatomical lecture theatre; physiological, pathological, pharmaceutical, chemical, and physical laboratories; anatomical, pathological, gynæcological, and materia medica museums; as well as a large natural history and geological museum and an extensive library in which students can read and from which they can borrow books. New Chemical and Pathological Laboratories are in process of construction. There are 14 Entrance Scholarships, value £30 and £25 each, for which Medical Students compete with other Students on the Literary and Mathematical Entrance Course. In the Second, Third, and Fourth Years two Scholarships in each year, value £25 each, are reserved for Medical Students on the Professorial Course. In addition Sessional Class Prizes are awarded. The Scholarship Examinations are held at the beginning of each session. There are extensive grounds, a portion of which is occupied by a Botanic Garden and a portion is at the disposal of the College Athletic Union. There are several student societies in the College, including a Biological Society. There are abundant facilities for research and Post-graduate work in the Chemistry, Physiology, and Pathology departments.

Professors—Natural Philosophy: A. Anderson, M.A., LL.D. Chemistry: A. Senier, Ph.D. Natural History: (Vacant.) Anatomy and Physiology: J. P. Pye, M.D., D.Sc. Medicine: R. B. Mahon, M.D. Surgery: W. W. Brereton, L.R.C.S.I. Materia Medica: N. W. Colahan, M.D. Midwifery: R. J. Kinkead, M.D. Pathology: T. Walsh, B.A., M.D., D.P.H.

Clinical Instruction is given in the Galway Hospital and in the Galway Union and Fever Hospitals.

Galway County Hospital (60 beds).—Founded by Act of Parliament. Physicians: Professor R. J. Kinkead and Professor R. B. Mahon. Surgeons: Professor J. P. Pye, Professor N. W. Colahan, and Professor W. W. Brereton. Gynæcologist: Professor Kinkead. Pathologist: Professor Walsh.

Galway Union and Fever Hospitals (150 beds).—A new Fever Hospital has just been built. A prospectus giving details of the courses of study and examination for degrees and of the subjects for public and private foundation scholarships may be had on application to the Registrar.

QUEEN'S UNIVERSITY OF BELFAST.

There are six degrees in the Faculty of Medicine of the University—viz., Bachelor of Medicine (M.B.), Bachelor of Surgery (B.Ch.), Bachelor of Obstetrics (B.A.O.), Doctor of Medicine (M.D.), Master of Surgery (M.Ch.), and Master of Obstetrics (M.A.O.). The University also grants a Diploma in Public Health, particulars of which will be found in the University Calendar. The degrees of M.B., B.Ch., and B.A.O. are the primary degrees in the Faculty of Medicine, and are conferred at the same time and after the same course of study. No student is admitted to the final examination for these degrees until he has shown: (1) that he is a matriculated student of the University; (2) that he has completed the prescribed course of study in the Faculty of Medicine extending over a period of not less than five academic years from the date of his registration as a student of Medicine by the General Council of Medical Education and Registration of the United Kingdom; (3) that he has passed the several examinations prescribed; (4) that he has attended in the University during three academic years at least the courses of study prescribed for such degrees (the Senate may accept, for not more than two academic years of the required five, courses of study pursued in any other University or School of Medicine approved by the Senate); and (5) that he has attained the age of 21 years. Every candidate for admission as a matriculated student of the University shall pass such Matriculation Examination or fulfil such other test of fitness as may be prescribed by the Senate, which may prescribe the conditions under which students who have passed the Matriculation or Entrance Examination of any other University or College approved for that purpose (or who have fulfilled such other test of fitness as may be prescribed) may be exempted from passing the Matriculation Examination of the University.

The Matriculation Examination.—Entrants to the University who desire to proceed to a degree in the Faculty of Medicine shall be required to pass in five subjects, to be selected from (1) English; (2) Mathematics; (3) Latin; (4 and 5) any *two* of the following (of which *one* must be a Language)—(*a*) Greek, (*b*) French, (*c*) German, (*d*) Physics, (*e*) Chemistry, (*f*) Botany, (*g*) Modern History. There shall be two examinations for Matriculation, one in summer and one in autumn. A candidate will be obliged to pass in all the required subjects at not more than two examinations provided that the examinations are in the same year, or not more than two consecutive years. If a candidate fails to pass within the prescribed time all the subjects must be passed at the subsequent examination or examinations. Entrants (other than those who are matriculated students of the Royal University of Ireland) who have passed the Senior Grade of the Intermediate Education Board for Ireland in the subjects already prescribed in or after the year 1906 shall, on making formal application to the secretary, be admitted as matriculated students. Two examinations for Matriculation, each covering a period of six days, will be held during 1914. The autumn examination will commence on Monday, Sept. 28th. Candidates must lodge their entrance forms, duly filled up, with the Secretary, and pay the prescribed fee of £1 1*s.*, not later than Sept. 1st, or with a late fee of 10*s.*, not later than 14 days before the examination, after which no entry will be received. Entrance forms may be had from the secretary.

Entrance Scholarships.—Candidates who intend to present themselves for the Entrance Scholarships to be awarded after the October Matriculation Examination must give notice to the secretary of the subjects in which they propose to be examined not later than Sept. 14th, 1914. Information as to the scholarships which will be open for competition and the subjects which may be taken may be obtained from the secretary.

Primary Degrees of M.B., B.Ch., B.A.O.—All candidates for these degrees shall satisfy the examiners in the subjects of four examinations known as the First, Second, Third, and Fourth Medical Examinations respectively. Two examinations for each of these will be held in the spring and summer.

The First Medical Examination.—The subjects of this examination are Chemistry (Inorganic and Organic), Experimental and Practical Physics, Botany and Zoology, and Practical Botany and Zoology. The examination will be divided into two parts which may be taken separately: I., Chemistry, Practical Chemistry and Experimental Physics (including laboratory work); II., Botany and Zoology (including laboratory work).

The Second Medical Examination.—The subjects are Anatomy and Practical Anatomy, Physiology and Practical Physiology. Candidates who have previously passed the First Medical Examination may present themselves for this examination at the close of their second year.

The Third Medical Examination.—The subjects are: (1) Pathology and Practical Pathology; (2) Materia Medica, Pharmacology and Therapeutics; (3) Medical Jurisprudence; (4) Hygiene. Candidates who have previously passed the Second Medical Examination may present themselves for this examination at the close of the third year. Attendance on a course in any subject of the Third Medical Examination shall not entitle a student to a certificate of attendance unless he has previously passed in all the subjects of the First Medical Examination.

The Fourth Medical Examination.—The subjects are: (1) Medicine; (2) Surgery; (3) Midwifery; (4) Ophthalmology and Otology. This examination may be taken in two parts: I., Systematic; II., Clinical, Practical and Oral. Candidates who have previously passed the Third Examination may present themselves for Part I. of the Fourth Examination at the close of the fourth year, provided that they have fulfilled the necessary requirements as to attendance, &c., on the courses of instruction in the subjects of examination. Candidates who have passed Part I. of this examination may present themselves for Part II. at the close of the fifth year, provided that they have fulfilled the necessary requirements as to hospital attendance on the various clinical courses in the subjects of examination. Parts I. and II. may be taken together at the close of the fifth year. Attendance on a course in any subject of the Fourth Medical Examination shall not entitle a student to a certificate of attendance unless he has previously passed in all the subjects of the Second Medical Examination.

Courses of Study.—Candidates who desire to enter for any of the Medical Examinations must furnish satisfactory certificates of attendance on the various courses dealing with the subjects of the respective examinations.

Candidates for the Final Examination for the Degree of M.B., B.Ch., and B.A.O. are required to furnish the following certificates in addition to those granted for attendance on the necessary academic courses:—(1) Of having attended the medical and surgical practice of a hospital or hospitals, approved by the University, for at least 27 months. Such attendance shall only be reckoned from the beginning of the third year of medical study. (2) Of having acted as a dresser for at least three months in the surgical wards, and as a clinical clerk for at least three months in the medical wards, of a hospital recognised by the University. These attendances must not be concurrent. (3) Of having received practical instruction in the methods of administration of Anæsthetics. (4) In Practical Midwifery. Every student shall be required either—(*a*) To have regularly attended the indoor practice of a lying-in hospital or the lying-in wards of a general hospital for a period of three months, and after having received therein practical instruction in the conduct of labour, under the personal supervision of a medical officer, to have conducted 20 cases of labour under official medical supervision; or (*b*) to have conducted not less than 20 cases of labour, subject to the following conditions: That he has previously during one month given regular daily attendance upon the indoor practice of a Lying-in Hospital or the lying-in wards of a general hospital or Poor-law infirmary having a resident medical officer recognised for that purpose by the University; and that he has therein conducted cases of labour under the personal supervision of a medical officer of the hospital, who shall, when satisfied of the student's competence, authorise him to conduct outdoor cases under official medical supervision. No certificate that the student has conducted the above-mentioned 20 cases of labour shall be accepted unless it is given by a member of the staff of a lying-in hospital or of the maternity charity of a general hospital, or of a dispensary having an obstetric staff recognised for that purpose by the University, or of a Poor-law infirmary having a resident medical officer so recognised. Every student before commencing the study of Practical Midwifery shall be required to have held the offices of clinical medical clerk and surgical dresser, and to have attended a course of lectures on Surgery and Midwifery. (5) In Gynæcology. Every student shall present a certificate of having received clinical instruction in Diseases of Women, either in a special hospital for diseases of women recognised by the University or in a special ward for diseases of women in a general hospital similarly recognised. (6) In Diseases of Children. Every student shall present a certificate of having received clinical instruction in Diseases of Children for a period of three months, either in a children's hospital or in a children's ward of a general hospital recognised by the University. (7) In Mental Diseases and Infectious Diseases. Every student shall present a certificate of having attended approved courses of instruction. (8) In Vaccination. Every student shall present a certificate of having attended lectures and practical instruction in Vaccination by a teacher recognised by the Local Government Board. (9) In Ophthalmology and Otology. Every student shall present a certificate of attendance for a period of three months at a hospital recognised by the University for clinical instruction in Diseases of the Eye and Ear.

The following order of study and examinations is recommended:—

First Year.

Winter Session.—Chemistry, Practical Chemistry, Experimental Physics (including Laboratory work), Anatomy (Elementary), and Practical Anatomy.

First Examination, Part I. (fee £1 1*s.*).

Summer Session.—Botany, Zoology, and Practical Botany and Zoology. First Examination, Part II. (fee £1 1*s.*).

Second Year.

Winter Session.—Anatomy, Practical Anatomy, Physiology, and Practical Physiology (Physical and Chemical).

Summer Session.—Practical Anatomy (including Demonstrations), Physiology (continued), and Practical Histology.

Second Examination (fee £1 1*s.*).

Third Year.

Winter Session.—Pathology; Materia Medica, Pharmacology, and Therapeutics; Hygiene; and Hospital Practice.

Summer Session.—Practical Pathology, Practical Pharmacy, Medical Jurisprudence, and Hospital Practice.

Third Examination (fee £1 1*s.*).

Fourth Year.

Winter Session.—Surgery, Medicine, Midwifery, and Hospital Practice.

Summer Session.—Operative Surgery, Ophthalmology, Vaccination, and Hospital Practice.

The following Hospital courses should be taken during the Fourth or Fifth Year:—Diseases of Children, Mental Diseases, Practical Midwifery and Gynæcology, and Fevers.

Fourth Examination, Part I. (Systematic) (fee £1 1*s.*).

Fifth Year.

Winter Session.—Clinical Medicine. Clinical Surgery, Clinical Gynæcology, Clinical Ophthalmology, and Hospital Practice.

Summer Session.—Hospital Practice.

Fourth Examination, Part II. (Clinical, Practical, and Oral Examinations) (fee £1 1*s.*).

Admission to degrees of M.B., B.Ch., and B.A.O. (fee £10 10*s.*).

Degrees of M.D., M.Ch., and M.A.O.—These degrees shall not be conferred until the expiration of at least three academic years, or in the case of graduates of the University in Arts or Science of at least two academic years, after admission to the primary degrees in the Faculty of Medicine. Every candidate must show that in the interval he has pursued such courses of study, or been engaged in such practical work as may be prescribed. These degrees may be conferred by the Senate either (*a*) after an examination, which includes written, oral, clinical, and practical examinations; or (*b*) on the submission of a thesis or other evidence of original study or research, to be approved by the Faculty of Medicine after an oral or other examination of the candidate on the subject thereof. On application for these degrees a fee of £2 2*s*., and on admission to them a fee of £8 8*s*., must be paid.

The subjects of the examination for the degree of M.D. are:—The Principles and Practice of Medicine, and one other special subject to be selected by the candidate from: (i.) Human Anatomy, including Embryology; (ii.) Physiology; (iii.) Pathology; (iv.) Pharmacology and Therapeutics; (v.) Sanitary Science and Public Health; (vi.) Forensic Medicine and Toxicology.

The subjects of the examination for the degree of M.Ch. are:—(1) Surgery, Theoretical and Practical, including Ophthalmology and Otology. (2) Surgical Pathology. (3) Surgical Anatomy and Operative Surgery, with the use of surgical instruments and appliances.

The subjects of the examination for the degree of M.A.O. are:—(1) Midwifery. (2) Diseases of Women and Children. (3) Pathology in its special bearing on Midwifery, and Diseases of Women and Children.

Scholarships.—There are Twelve Entrance Scholarships of £40 in the Faculties of Arts, Science, and Medicine, tenable for one year, to be awarded to the candidates in the order of merit, provided that two shall be awarded to students entering the Faculty of Medicine if sufficient merit be shown. Four Scholarships of the value £40, £30, £20, £15, tenable for one year, will be open for competition in connexion with the Summer First Medical Examination. Four Scholarships of the value £40, £30, £20, and £15, tenable for one year, will be open in connexion with the Summer Second Medical Examination. Four Scholarships of the value £40, £30, £20, and £15 will be open in connexion with the Summer Third Medical Examination. Four Scholarships of the value £30, £30, £30, and £20, tenable for one year, will be open in connexion with the Summer Fourth Medical Examination. Grants from a Post-Graduate Research Fund may be obtained by graduates in medicine of not more than two years' standing.

The Medical School.—The Donald Currie Chemical Buildings contain a lecture theatre, a preparation room, a chemical museum, a large class-room for elementary practical chemistry, laboratories for qualitative and quantitative analysis, rooms for water and gas analysis, dark room for photographic purposes, balance room, &c., provided with all modern appliances. Special facilities are given to those who wish to pursue original research. The Anatomical Department contains a large and well-lighted dissecting-room, a lecture-room, a professor's and demonstrator's room, a bone-room, and a laboratory for microscopic and photographic work. The Medical Museum is in the same building. The Jaffé Laboratories for Physiology comprise a lecture theatre, laboratories for practical work in chemical physiology, histology, and experimental physiology, and in addition small private research rooms, including balance, galvanometer, and centrifuge rooms. The Musgrave Pathological Laboratory.—In this department opportunity is afforded for research in pathology and bacteriology. The department is in touch with most of the hospitals in Belfast, and there is an ample supply of material for investigation by graduates in morbid histology, clinical pathology, and the bacteriology of infectious diseases. A course in pathology or bacteriology is given to graduates, and members of this class have an opportunity of seeing the methods employed in the various investigations carried out in the department for the Public Health Committee of the corporation in connexion with water-supply, sewage disposal, meat- and milk-supply, the diagnosis of cases of infectious diseases, &c. The certificate issued to members of the class in bacteriology qualifies for the D.P.H. degree. The Pharmaceutical Laboratory is fitted and equipped for the work of practically instructing students in the compounding and dispensing of medicines.

The Teaching Staff of the Faculty of Medicine.—Professors—Physics: W. Blair Morton, M.A. Chemistry: E. A. Letts, Ph.D., D.Sc. Zoology: Gregg Wilson, M.A., D.Sc. Botany: (Vacant). Anatomy: J. Symington, M.D., F.R.S. Physiology (Dunville Professor): T. H. Milroy, M.D., B.Sc. Materia Medica: Sir William Whitla, M.A., M.D. Pathology (Musgrave Professor): W. St. Clair Symmers, M.B. Medicine: J. A. Lindsay, M.A., M.D., F.R.C.P. Lond. Surgery: T. Sinclair, M.D., M.Ch., F.R.C.S. Eng. Midwifery: Sir John Byers, M.A., M.D., M.Ch., M.A.O. Lecturers—Applied Anatomy: P. T. Crymble, M.B., F.R.C.S.E. Medical Jurisprudence: W. St. C. Symmers, M.B., and T. Houston, M.D. Ophthalmology and Otology: J. A. Craig, M.B., F.R.C.S. Hygiene: W. J. Wilson, M.D., D.P.H. Bio-Chemistry: J. A. Milroy, M.D. Physics: R. T. Beatty, M.A., B.Sc. Organic Chemistry: A. W. Stewart, D.Sc. Vaccination: J. M'Liesh, M.B., D.P.H. Assistants and Demonstrators—Anatomy: R. J. McConnell, M.B. Practical Pharmacy: V. G. L. Fielden, M.B., Ph.C. Riddel Demonstrator in Pathology and Bacteriology: H. P. Malcolm, M.B. Clinical Pathology: T. Houston, M.D. Medicine: G. G. Lyttle, M.B. Surgery: S. T. Irwin, M.B., F.R.C.S. Edin. Midwifery: T. S. S. Holmes, M.B., M.Ch., F.R.S.E. Internal Examiner in Sanitary Science: H. W. Bailie, L.R.C.P. & S. Edin., L.F.P.S. Glasg., D.P.H. University Clinical Lecturers: Medicine: William M'Lorinan, L.R.C.P. & S. Irel., M.D. Surgery: Robert Campbell, M.B., F.R.C.S. Eng. Midwifery and Diseases of Children: R. J. Johnstone, M.B., F.R.C.S. Eng. Ophthalmology: Henry Hanna, M.B.

Clinical instruction.—The following institutions are recognised by the University as affording proper opportunities for clinical instruction: the Royal Victoria Hospital, the Mater Infirmorum Hospital, the Union Hospitals, the Belfast Hospital for Sick Children, the Belfast Maternity, the Ulster Hospital for Women and Children, the Ulster Eye, Ear, and Throat Hospital, the Belfast Ophthalmic Hospital, the Purdysburn Fever Hospital, and the Belfast District Lunatic Asylum.

The Royal Victoria Hospital (300 beds).—Physicians: Professor Sir William Whitla, Professor James A. Lindsay, Dr. William Calwell, and Dr. H. L. McKisack, Surgeons: Professor T. Sinclair, Mr. A. B. Mitchell, Mr. T. S. Kirk, and Mr. R. Campbell. Gynæcologist: Professor Sir John Byers. Surgeon for Diseases of the Eye, Ear, and Throat: Mr. James A. Craig. Pathologist: Professor W. St. C. Symmers. Physician for Diseases of the Skin: Dr. W. Calwell. Physician in charge of Out-patients: Dr. J. S. Morrow. Assistant Physician: Dr. J. E. McIlwaine. Surgeons in charge of Out-patients: Mr. Andrew Fullerton and Mr. Howard Stevenson. Gynæcologist in charge of Out-patients: Mr. R. J. Johnstone. Assistant Surgeon to the Eye, Ear, and Throat Department: Mr. Henry Hanna. Assistant to the Pathologist: Mr. M. Nelson. Administrators of Anæsthetics: Dr. V. G. L. Fielden and Mr. W. J. Taggart. Medical Electrician: Dr. J. C. Rankin. Hæmatologist: Dr. Thomas Houston. Medical Registrars: Dr. Foster Coates and Dr. Rowland Hill. Surgical Registrars: Mr. P. T. Crymble and Mr. S. T. Irwin.

Mater Infirmorum Hospital (160 beds).—Consulting Physician: Sir Alexander Dempsey. Physicians: Mr. W. M'Lorinan, Dr. J. A. Black, and Dr. P. E. O'Flaherty. Surgeons: Sir Peter R. O'Connell, Mr. J. B. Moore, and Mr. John O'Doherty. Clinical Assistant in Surgery: Dr. D. McSparran. Clinical Assistant in Gynæcology: Dr. A. J. Dempsey. Anæsthetist: D. McSparran. Gynæcologist: Sir Alexander Dempsey. Ophthalmic Surgeon: Mr. H. Mulholland. Pathologist: Dr. W. St. Clair Symmers. Clinical Pathologist: Dr. W. W. D. Thompson. Registrar: Mr. O'Doherty. Honorary Secretary Medical Staff: Mr. J. B. Moon. Dental Surgeon: Mr. Maurice Maguire. House Physician: Dr. Mallon. House Surgeon: Dr. Wright.

Belfast Union Infirmary and Hospital (1700 beds).—Visiting Medical Officers: Dr. Robert Hall, Dr. John M'Leish, Dr. Joseph Fulton, and Dr. A. Gardner Robb. Ophthalmic Surgeon: Mr. Henry Hanna. Dental Surgeon: Mr. W. Marshall Swan, L.D.S. Eng., and five Resident Medical Officers. The Abbey Sanatorium contains 250 beds. Visiting Medical Officers: Dr. Robert Hall, Dr. J. C. Rankin, and one Resident Medical Officer.

Hospital for Sick Children, Queen-street (52 beds).—Consulting Physicians: Dr. B. Smyth, Sir J. W. Byers, and Dr. F. H. Sinclair. Attending Physicians: Dr. J. McCaw and Dr. R. L. Leathem. Honorary Attending Assistant Physicians: Dr. M. B. Smyth and Mr. Rowland Hill. Consulting Surgeons: Sir J. Fagan and Mr. W. G. Mackenzie. Attending Surgeons: Mr. T. S. Kirk and Mr. R. Campbell.

Honorary Attending Assistant Surgeons: Mr. A. Fullerton and Mr. P. T. Crymble. Ophthalmic Surgeon: Mr. W. K. McCready. Pathologist: Professor W. St. C. Symmers. Surgeon-Dentist: Mr. N. White. Anæsthetists: Dr. W. Burnside, Dr. J. Rusk, Dr. W. Dickey, and Dr. T. S. Holmes. Honorary Attending Physicians to Convalescent Home (Carrickfergus): Dr. James A. Clarke and Dr. J. Houston. Honorary Secretary Medical Staff: John McCaw, M.D. Patients, intern, 585; extern, 4622; attendances, 14,280.

Maternity Hospital, Townsend-street (32 beds).—Honorary Consulting Physician: Dr. Brice Smyth. Honorary Consulting Surgeon: Mr. J. Campbell. Honorary Visiting Physicians: Dr. H. D. Osborne, Sir John Byers, Dr. R. J. Johnstone, and Dr. Malcolm Brice Smyth.

Ulster Hospital for Children and Women (30 beds).—Acting Staff, Children's Department—Physicians: Dr. J. D. Williamson and Dr. R. W. Leslie. Surgeons: Mr. A. B. Mitchell and Mr. Howard Stevenson. Ophthalmic Surgeon: Mr. H. H. B. Cunningham. Women's Department—Dr. Marion B. Andrews and Dr. C. G. Lowry. Pathologist: Dr. T. Houston. Obstetric Physician: Dr. J. D. Williamson.

Benn Ulster Eye, Ear, and Throat Hospital (30 beds).—Acting Surgeon: Mr. W. M. Killen. Assistant Surgeons: Mr. J. A. Davidson and Mr. W. A. Anderson. Pathologist: Mr. W. W. D. Thompson. Physician: G. W. McComb, M.B. Anæsthetist: W. Dickey, M.B.

Belfast Ophthalmic Hospital, Great Victoria-street (30 beds).—Practical demonstrations by the staff and occasional clinical lectures in the subjects of Ophthalmology, Otology, Laryngology, and Neurology. Consulting Physician: Sir W. Whitla. Surgeon: Mr. J. W. Browne. Assistant Surgeons: Mr. H. H. B. Cunningham and Mr. Wiclif McCready. Assistant Physician: Dr. Rowland Hill. Clinical instruction is given daily. Fee for three months £2 2*s*.

City Fever Hospital, Purdysburn (330 beds).—Physician in Charge: Dr. A. Gardner Robb. Clinical Classes are held during the winter and summer sessions.

District Lunatic Asylum (1250 beds).—Resident Medical Superintendent: Dr. W. Graham. Assistant Medical Officers: Dr. S. J. Graham, Dr. N. B. Graham, and Dr. W. R. Tyrrell. Consulting and Visiting Physician: Dr. R. J. Purdon.

IRISH MEDICAL CORPORATIONS GRANTING DIPLOMAS.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.

The College issues its Licences in Medicine and in Midwifery to practitioners whose names appear on the Medical Register of the United Kingdom.

The Licence in Medicine.—The subjects of examination are: Practice of Medicine, Clinical Medicine, Pathology, Medical Jurisprudence, Midwifery, Hygiene, and Therapeutics.

The Licence in Midwifery.—Candidates must produce certificates of registration. A registered medical practitioner of five years' standing may be exempted from the examination by printed questions.

Fees.—Fee for the Licence to practise Medicine, £15 15*s*. Fee for examination for the Licences in Medicine and Midwifery, if obtained within the interval of a month, £16 16*s*.—to be lodged in one sum. (*Any candidate who has been rejected at the examination for the Licence in Medicine loses this privilege and will be required to pay the full fee of five guineas for the Licence of Midwifery.*) Fee for special examination for the Licence to practise Medicine, £21. Fee for examination for the Licence to practise Midwifery, £5 5*s*. Fee for special examination for the Licence to practise Midwifery, £10 10*s*. The examinations for these Licences are held in the three days preceding the first Friday in February, May, and November.

The Membership.—Examinations for Membership are held in January, April, July, and October. The fee for the examination is £21 to Licentiates of the College, or £36 15*s*. to non-Licentiates. Further particulars can be obtained from the Registrar of the Royal College of Physicians of Ireland, Kildare-street, Dublin.

The Fellowship.—Fellows are elected by ballot. Applicants must have been a Member of the College for at least one year and must have attained the age of 27 years. There is a fee of £35 in addition to a stamp duty of £25.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

The Licence in Surgery.—A candidate whose name is entered either on the Medical Register for the United Kingdom, the Colonial Medical Register, or the Foreign Medical Register of the year in which he presents himself for examination, and who satisfies the Council that he has passed through a course of study and Examinations equivalent to those required by the Regulations of the Conjoint Board of the Royal College of Physicians of Ireland and the Royal College of Surgeons in Ireland, preceded by the passing of an Examination in Arts recognised by the General Medical Council, may, at the discretion of the Council, be admitted to the Examination.

Candidates are examined in Surgery, Clinical Surgery, Operative Surgery on the subject, Surgical Appliances, and Ophthalmic Surgery. The examination is partly written, partly *vivâ voce*, and partly practical. The fee is £26 5*s*., of which £5 5*s*. is retained by the College in the case of unsuccessful candidates.

Candidates are required to lodge their applications, declarations, and certificates with the Registrar at least 21 days before the date of the Examination.

Diploma in Midwifery.—A diploma in Midwifery is granted after examination to persons possessing a registrable qualification. Candidates must produce evidence of (*a*) attendance at a course of lectures on Midwifery and Diseases of Women and Children in some school recognised by the Council; (*b*) attendance on six months' practice in connexion with a recognised lying-in hospital or dispensary for lying-in women and children; and (*c*) of having conducted at least 30 labour cases. The fee for the examination is £15 15*s*., of which £5 5*s*. is retained by the College in case the candidate is unsuccessful.

Fellowship Examinations.—A candidate for the Fellowship shall make application to the President and Council to be admitted to examination. All the required evidences of study or qualification, fees, and testimonials as to character must be submitted previously to the application being considered, and the candidate shall then, if approved by the Council, be admitted to the next sessional examination. In order that these regulations may be carried out candidates are required to lodge their applications complete with the Registrar at least seven days before the date of examination. Sessional Fellowship Examinations commence as follows:—The primary on the first Monday in March, the second Monday in July, and the third Monday in November; the Final on the second Monday in March, the third Monday in July, and the fourth Monday in November. Special examinations will not be granted by the Council under any circumstances.

Candidates are required to pass two examinations—Primary and Final. Candidates may present themselves for the Final Examination immediately after passing the Primary part, provided they have complied with the necessary regulations. The subjects for the Primary Examination are (*a*) Anatomy, including Dissections; and (*b*) Physiology and Histology.

The subjects for the Final Examination are Surgery, including Surgical Anatomy, and Pathology. The examination is partly written and partly *vivâ voce*, and includes the examination of patients, and the performance of operations on the dead body. Candidates must pass in all subjects at one examination.

The conditions of admission to the Primary Examination are that the candidate must produce evidence of having completed examinations in Anatomy, Physiology, and Histology under a licensing body whose degrees entitle the holder to have his name placed on the Medical Register. For admission to the Final Examination the candidate must have passed the Primary Examination, and must be a Licentiate or Graduate in Surgery of a university or licensing body recognised by the General Medical Council; all such candidates must not be less than 25 years of age. The fees for the examinations are as follows:—Primary Examination, each admission, £5 5*s*.; Final Examination, each admission, £5 5*s*. Of these examination fees £10 10*s*. will be reckoned as part of the £42 fee payable upon admission to the Fellowship. The fee to be paid is £42, except when the new Fellow is a Licentiate of the College, in which case it is £26 5*s*.

In cases of rejection the examination fees are retained by the College and are not allowed for in the fees for re-examination.

A rejected candidate will not be again admitted to examination until after a period of three months.

Further particulars can be obtained from the Registrar of the College, Stephen's-green, West Dublin.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND AND ROYAL COLLEGE OF SURGEONS IN IRELAND.

Every candidate for the Conjoint Examinations of the Colleges shall produce evidence of having before entering on medical studies passed a Preliminary Examination in general education recognised by the Royal Colleges. Each candidate before receiving his diplomas must produce a registrar's certificate or other satisfactory evidence that he has attained the age of 21 years.

Preliminary Examination.—The subjects for examination are identical with those prescribed for the Preliminary Examination by the General Council of Medical Education and Registration.

Professional Examinations.—Every candidate must pass four Professional Examinations—at the end of the first, second, third, and fifth years respectively of his professional studies. No candidate shall be admitted to the Final or Qualifying Examination within three months of his rejection at the Final or Qualifying Examination by any other licensing body.

First Professional Examination.—Every candidate is required, before admission to the First Professional Examination, to produce evidence—(1) of having passed in the subjects of the Preliminary Examination; and (2) of having attended a course of—(*a*) lectures on Theoretical Chemistry, six months; (*b*) Practical Chemistry, three months; (*c*) Biology, three months; and (*d*) Physics.

The subjects of the First Professional Examination are the following:—1. (*a*) Chemistry; (*b*) Physics. 2. Biology. The fee for this examination is £15 15*s*.

Second Professional Examination.—Candidates are not admissible to this examination till they have passed in the subjects of the First Professional Examination, and they must produce evidence of having attended (*a*) anatomical dissections, six months; and Lectures on (*b*) Anatomy, six months; (*c*) Physiology, six months; (*d*) Practical Physiology and Histology, three months.

The subjects of the Second Professional Examination are the following:—(1) Anatomy; and (2) Physiology and Histology. The fee for this examination is £10 10*s*.

Third Professional Examination.—Every candidate is required, before admission to the Third Professional Examination, to produce evidence of having passed the Second Professional Examination and certificates of having attended courses of instruction in (*a*) the practice of a medico-chirurgical hospital for nine months; (*b*) Pathology—(1) Systematic, (2) Practical, three months each; (*c*) Materia Medica, Pharmacy, and Therapeutics, three months; (*d*) Forensic Medicine and Public Health, three months.

The subjects for the Third Professional Examination are the following:—(1) Pathology; (2) Materia Medica, Pharmacy, and Therapeutics; (3) Public Health and Forensic Medicine. The fee for this examination is £9 9*s*.

Final Professional Examination.—Before admission to the Final Examination candidates must have passed the Third Professional Examination and produced evidence of having attended in Division I. the practice of a medico-chirurgical hospital for two periods of nine months each (unless such evidence has been previously produced for admission in Division II.); the practice of a recognised fever hospital or the fever wards of a recognised clinical hospital, three months; clinical instruction in Mental Diseases, one month (12 attendances); Lectures on Medicine, six months at a recognised medical school; of having performed the duties of medical clinical clerk in a recognised hospital for three months; of having attended a course of instruction in post-mortem examinations and demonstrations during one session. In Division II. of having attended the practice of a medico-chirurgical hospital for two periods of nine months each (unless such evidence has been previously produced for admission to Division I.); clinical instruction in Ophthalmic and Aural Surgery, three months; lectures on Surgery, six months at a recognised medical school; instruction in Operative Surgery, three months at a recognised medical school; of having performed the duties of surgical dresser in a recognised hospital for three months; of having attended a course of instruction in the practical administration of general anæsthetics. In Division III. of having attended a midwifery hospital or maternity and having been present at 20 labours, six months; instruction on vaccination, six attendances to be certified by a public vaccinator; lectures on midwifery (including diseases peculiar to women and to new-born children), six months at a recognised medical school. Candidates are recommended to present themselves in all the subjects of the Final Examination at one time, but a candidate at or after the end of the fourth year may present himself in any one of the Divisions I., II., or III., provided he has completed his curriculum as far as concerns the division in which he presents himself. The examination in at least one of the divisions must be deferred till the end of the fifth year.

The subjects of the Final Examination are: (1) Medicine, including Fevers, Mental Diseases, and Diseases of Children; (2) Surgery, Operative and Ophthalmic; and (3) Midwifery and Gynæcology, Vaccination, and Diseases of New-born Children. The fee is £6 6*s*. Further particulars can be obtained from Alfred Miller, the Secretary of the Committee of Management, Royal College of Surgeons, Stephen's Green, Dublin.

ROYAL COLLEGE OF SURGEONS IN IRELAND (SCHOOLS OF SURGERY).—The schools of surgery are attached by Charter to the Royal College of Surgeons and have existed as a department of the College for over a century. They are carried on within the College buildings and are specially subject to the supervision and control of the Council, who are empowered to appoint and remove the professors and to regulate the methods of teaching pursued. The buildings have been reconstructed, the capacity of the dissecting-room nearly trebled, and special pathological, bacteriological, public health, and pharmaceutical laboratories fitted with the most approved appliances in order that students may have the advantage of the most modern methods of instruction. There are special rooms set apart for lady students. The entire building is heated by hot-water pipes and lighted throughout by the electric light. Winter Session commences Oct. 15th; Summer Session, April 15th. Prospectuses and guide for medical students can be obtained post free on written application to the Registrar, Royal College of Surgeons, Stephen's-green, W., Dublin.

Scholarships and Prizes.—At the College there are offered the Class Prizes: two Gold Medals, two Scholarships, and a Bequest. The Class Prizes having the value of £100 are open to students of the class and are awarded for proficiency in the class examination. The Stoney Gold Medal is confined for competition to the Anatomy Class and the Surgery Gold Medal to the Practical Surgery Class. They are each of the value of £3 15*s*., and are open to students of the respective classes. The Carmichael Scholarship of the value of £15 is open to students of the third year and is awarded on the result of examination in anatomy, physiology, histology, chemistry, materia medica, and pharmacy. The Mayne Scholarship of the value of £8 is open to students of the third and fourth year and is obtained by merit in the subjects of surgery, medicine, pathology, midwifery, and diseases of women. The Barker Bequest of £26 5*s*. is awarded for the best Dissection and is open to all medical students.

APOTHECARIES' HALL OF IRELAND.

The Licence of this Hall is granted to students who present certificates of having fully completed the course of study as laid down in the curriculum and who pass the necessary examinations. The diploma of the Apothecaries' Hall of Ireland entitles the holder to be registered as a practitioner in medicine, surgery, and midwifery, with also the privileges of the Apothecary's Licence. There are three professional examinations, the total fees for which amount to 30 guineas. Ladies are eligible for the diploma. Registered medical practitioners will receive the diploma of the Hall upon passing an examination in the subject or subjects not covered by their previous qualifications and on paying a fee of 15 guineas.

The fees payable for each examination are as follows:—Primary professional, £5 5*s.*; intermediate, £10 10*s.*; final examination, £15 15*s.* If a candidate gives three clear days' notice of his inability to attend he may present himself at the ensuing examination without a further fee. A candidate is allowed for each professional examination which he has completed at any other licensing body except the final. If he has passed in some only of the subjects in a given examination he has to pay the whole of the fee for that examination. The fees for re-examination are for each subject £1 1*s.*, except in the subjects of surgery, medicine, and anatomy, and the fees for which are 2 guineas each. The fee for the third or final is £21 when the other examinations have been taken elsewhere. All examination fees are to be lodged in the National Bank of Ireland, College Green, to the credit of the Examination Committee. Applications and schedules, together with bank receipt for the fee, must be lodged with the Registrar, Apothecaries' Hall, 40, Mary-street, Dublin, at least 14 clear days before the first day of examination.

There are three examinations—primary, intermediate, and final. They are held quarterly on the first Monday in January, April, July, and October. The primary examination comprises biology, physics, theoretical and practical chemistry (with an examination at the bench). Candidates holding a Pharmaceutical licence are exempt from this subject. The intermediate examination comprises anatomy of the whole body (including practical dissections), physiology, practical histology, and materia medica. The final examination consists of two parts Part I., Pathology and Medical Jurisprudence and Hygiene. Part II., Medicine, Surgery, and Midwifery and Pharmacy.

Candidates who desire to obtain the Letters Testimonial of the Apothecaries' Hall in Ireland must before proceeding to the final examination produce evidence of having attended courses of instruction as follows:—One course each (of six months) of the following: anatomy (lectures), chemistry (theoretical), midwifery, practice of medicine, physiology, surgery, and dissections, two courses of six months each. Courses of three months: materia medica, medical jurisprudence, chemistry (practical), practical physiology and histology, operative surgery, physics, clinical ophthalmology, biology, clinical instruction in mental disease, pathology, and a course in vaccination. Instruction in the administration of anæsthetics is also required. Medico-chirurgical hospital: 27 months to be distributed, at the student's own discretion, over the last four years of his study. The candidate may substitute for nine months in this hospital attendance, six months as a resident pupil. He will be required to present a certificate of having taken notes of at least six medical and surgical cases recorded under the supervision respectively of a physician and surgeon of his hospital. Three months' study of fever—which may be included in his 27 months' hospital attendance—in a hospital containing fever wards, and having taken notes of five cases of fever—viz., either typhus fever, typhoid fever, scarlet fever, small-pox, or measles. Six months' practical midwifery and diseases of women during the winter or summer of the third or the fourth year at a recognised lying-in hospital or maternity. Three months' practical pharmacy in a recognised clinical hospital or a recognised school of pharmacy, or a year in the compounding department of a licentiate apothecary or a pharmaceutical chemist. Each candidate before receiving his diploma must produce evidence that he has attained the age of 21 years. The details of the course of education required and syllabus of the examinations will be supplied on application to the Registrar at 40, Mary-street, Dublin.

HOSPITALS AFFORDING PRACTICE RECOGNISED BY THE IRISH UNIVERSITIES AND CORPORATIONS.[1]

ADELAIDE MEDICAL AND SURGICAL HOSPITALS, Peter-street, Dublin.—Fee for nine months' hospital attendance, £12 12*s.*; six months, £8 8*s.* Summer, three months, £5 5*s.*

Staff.—Consulting Physician: Dr. James Little. Physicians: Dr. Wallace Beatty, Dr. H. T. Bewley, and Dr. G. Peacocke. Surgeons: Mr. F. T. Heuston, Mr. T. E. Gordon, and Mr. L. G. Gunn. Obstetric Surgeon: Sir W. J. Smyly. Ophthalmic Surgeon: Mr. J. B. Story. Throat Surgeon: Dr. S. Horace Law. Pathologists and Bacteriologists: Dr. J. Alfred Scott and Dr. A. Stokes. Dental Surgeon: Mr. John Stanton. Assistant Physician: Dr. W. G. Harvey. Assistant Surgeon: Mr. W. Pearson. Anæsthetist: Dr. Piel.

Two resident surgeons are elected yearly and four resident pupils half-yearly. At the termination of the session prizes in Clinical Medicine and Surgery and in Dermatology will be awarded.

Hudson Scholarship.—In addition to the junior prizes the Hudson Scholarship, £30 and a gold medal, as well as a prize of £10, together with a silver medal, will be awarded at the end of the session for proficiency in medicine, surgery, and gynæcology.

The certificates of attendance are recognised by all the Universities and licensing bodies in the United Kingdom. Further particulars may be obtained from Dr. H. T. Bewley.

COOMBE LYING-IN HOSPITAL AND GUINNESS DISPENSARY FOR THE TREATMENT OF DISEASES PECULIAR TO WOMEN, Dublin.—This hospital contains nearly 70 beds and consists of two divisions, one of which is devoted to lying-in cases and the other to the treatment of diseases peculiar to women. The practice of this hospital is one of the largest in Ireland. Lectures are delivered, practical instruction given, and gynæcological operations are performed in the theatres daily. There is a general dispensary held daily, at which instruction is given on the Diseases of Women and Children. There is a special afternoon dispensary held by the Master and his assistants, at which practical instruction in gynæcology is given. There is no extra charge for attendance at this dispensary. There is accommodation for intern pupils who enjoy exceptional advantages of acquiring a thorough knowledge of this branch of their profession. Lady medical students can reside in the hospital. The residents' quarters are comfortable. Clinical assistants are appointed from amongst the pupils as vacancies occur. Certificates of attendance at this hospital are accepted by all licensing bodies. Fees: Extern pupils for full course of six months, £8 8*s.*; three months, £4 4*s.* Intern pupils, one month, £4 4*s.*; each consecutive month, £3 3*s.*; six months, £18 18*s.*; board and lodging in the hospital, 21*s.* per week. Lady students, intern, one month, £5 5*s.*; each consecutive month, £4 4*s.* Registration fee, in advance, 10*s.* 6*d.* Students can enter for attendance at any time, but preference is given to those entering from the first day of the month. Further particulars may be had on application to the Master or the Registrar at the hospital.

Staff.—Consulting Physicians: Sir John W. Moore and Sir J. M. Redmond. Consulting Surgeons: Dr. F. T. Heuston and Dr. F. W. Kidd. Pathologist: Dr. E. J. McWeeney. Pathological Analyst: Sir C. A. Cameron. Master: Dr. M. J. Gibson. Assistant Masters: Dr. Oswald C. Tandy and Dr. D. O. Morris. Registrar: Fred. A. Heney.

SIR PATRICK DUN'S HOSPITAL, Grand Canal-street, Dublin.—Classes for clinical instruction both in Medicine and Surgery are held each morning from 9 o'clock from Oct. 1st till the end of June. Special classes for students commencing their hospital studies will be held in the wards during the months of October, November, and December. They will embrace the elements of Medicine and Surgery, including note-taking. The surgical operating theatre, which has recently been erected, is equipped upon the most approved principles and is thoroughly in accord with modern surgical requirements. Instruction in the Diseases of Women is given on Tuesdays and Fridays at 10 A.M. There is a special wing devoted to fever cases. Pathological and Bacteriological Demonstrations will be given on Fridays at 10.30 A.M., when there is suitable material, during the Winter and Summer Sessions in the new Pathological Laboratory. A new department has been opened for the special treatment of Throat, Nose, and Ear Diseases under the direction of Sir Robert H. Woods. Instruction will be given in these subjects and in the use of the Laryngoscope and Otoscope to senior students on Mondays and Thursdays. Arrangements have been made to give practical instruction in anæsthetics to senior students. Practical demonstrations are given in Dentistry on Wednesdays and Saturdays in the new Special Dispensary. Opportunities are given the members of the hospital class of seeing the various applications of the X rays to the diagnosis and treatment of injury and disease. Opportunities are also afforded in the out-patient department for the diagnosis and treatment of the numerous minor ailments not met with in the hospital wards. A Resident Surgeon, with salary, is appointed annually. The election takes place at the end of December. Six Resident Pupils are appointed each half-year. Six Surgical Dressers and six Clinical Clerks are appointed each month.

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[1] This list of the institutions recognised by the Conjoint Board of Ireland is supplemented in the regulations of the Colleges by those hospitals mentioned as recognised institutions in Scotland and England. The recognised facilities for clinical instruction in Belfast, Cork, and Galway have been described in connexion with the Belfast and National Universities.

Prizes and Medals.—Clinical medals and prizes amounting to about £15 each will be awarded in Medicine and in Surgery respectively in accordance with the will of the late Rev. Samuel Haughton, M.D., S.F.T.C.D. Candidates who fail to obtain these medals and prizes will be awarded special certificates in Medicine and in Surgery provided they show sufficient merit.

Fees.—Winter and summer session, £12 12*s.*; winter session (six months), £8 8*s.*; and summer session (three months), £5 5*s.* Special certificate in anæsthetics, £1 1*s.* The practice of this hospital is open to students of medicine in attendance on schools other than the School of Physic, the certificates being recognised by the National University and Royal Colleges of Surgeons of England, Ireland, and Scotland.

Consulting Physicians: Dr. J. M. Purser and Dr. J. Magee Finny. Physicians: Dr. W. G. Smith, Dr. H. C. Drury, Dr. James Craig, and Dr. T. Henry Wilson. Assistant Physician: Dr. E. J. Watson. Surgeons: Sir Charles B. Ball, Bart., Dr. E. H. Taylor, and Dr. C. A. K. Ball. Pathologist: Dr. A. C. O'Sullivan. Department for Throat, Nose, and Ear: Sir Robert H. Woods. Assistant Surgeon: Dr. C. M. Benson. X Ray Department: Dr. E. J. Watson. Anæsthetist: Dr. W. C. P. Smyly. Dentist: Mr. J. I. Kelly. House Surgeon: Dr. C. J. O'Reilly.

Further information will be supplied by the Hon. Secretary to the Medical Board, Dr. H. C. Drury.

JERVIS-STREET HOSPITAL, Dublin.—Founded 1718; rebuilt 1886. 130 beds. A new out-patient department has been completed and contains all modern requirements. Physicians: Dr. F. X. Callaghan and Dr. R. J. Rowlette. Surgeons: Mr. W. Stoker, Mr. L. A. Byrne, Mr. J. L. Keegan, and Mr. P. Hayden. Assistant Surgeon: Mr. T. W. Conway. X Rayist: Dr. H. W. Mason. Gynæcologist: Dr. McArdle. Ophthalmic Surgeon: Mr. P. Maxwell. Pathologist: Mr. E. J. McWeeney. Throat and Nose Specialist: Dr. P. J. Keogh. Dentist: Mr. A. K. Macdonald. Anæsthetist: Mr. Pearce N. Creagh. Secretary: Mr. Kieran O'Dea.

MATER MISERICORDIÆ HOSPITAL, Dublin.—Physicians: Sir Joseph Redmond, Dr. John Murphy, and Dr. Martin Dempsey. Surgeons: Sir Arthur Chance, Sir John Lentaigne, and Mr. Alexander Blayney. Assistant Physician: Dr. John O'Donnell. Assistant Surgeon: Mr. D. Farnan. Gynæcologist: Dr. Robert Farnan. Ophthalmic Surgeon: Mr. Louis Werner. Surgeon for Diseases of Throat and Nose: Mr. Patrick Dempsey. Dental Surgeon: Mr. E. Sheridan. Pathologist: Professor Edmond McWeeney. Assistant Pathologist: Dr. W. D. O'Kelly. X Rayist: Mr. Maurice Hayes. Anæsthetist and Surgical Registrar: Dr. Patrick O'Farrell. This hospital, the largest in Dublin, containing 345 beds, is open at all hours for the reception of accidents and urgent cases. Clinical instruction will be given by the Physicians and Surgeons at 9 A.M. daily. A course of Clinical Instruction on Fever will be given during the winter and summer sessions. A certificate of attendance upon this course, to meet the requirements of the licensing bodies, may be obtained. Ophthalmic Surgery will be taught in the Special Wards and in the Dispensary. Surgical Operations will be performed daily. Connected with the hospital are extensive Dispensaries, which afford valuable opportunities for the study of general Medical and Surgical Diseases, and Accidents. Instruction will be given on Pathology and Bacteriology. Three House Physicians, six House Surgeons, and 20 resident pupils will be elected annually. Dressers and Clinical Clerks will also be appointed, and certificates will be given to those who perform their duties to the satisfaction of the staff. Leonard Prizes will be offered for competition annually. For further particulars see prospectus. Certificates of attendance upon this hospital are recognised by all the Universities and licensing bodies in the United Kingdom. Private Wards have been opened for the reception of Medical and Surgical cases. A Training School and a Home for Trained Nurses have been opened in connexion with the Hospital.

Terms of attendance.—Nine months, £12 12*s.*; six winter months, £8 8*s.*; three summer months, £5 5*s.* Entries can be made with any of the physicians or surgeons, or with the Registrar, Dr. Martin Dempsey, 35, Merrion-square. A prospectus containing in detail the arrangements for Clinical Instruction, Prizes, &c., may be obtained from the Secretary, Medical Board.

MEATH HOSPITAL AND COUNTY DUBLIN INFIRMARY.—Physicians: Sir John William Moore, Dr. Edward E. Lennon, and Dr. William Boxwell. Surgeons: Sir L. H. Ormsby, Mr. William Taylor, Mr. R. Lane Joynt, Dr. Oliver St. J. Gogarty, and Mr. Henry Stokes. Gynæcologist: Dr. F. W. Kidd. Clinical Assistant: Dr. Mather Thomson. Pathologist: Professor Arthur H. White. House Surgeons: Dr. Geoffrey Fleming and Dr. Bantry White. This hospital was founded in 1753 and now contains 146 beds available for clinical teaching. A building containing 40 beds for the isolated treatment of fevers is attached to the hospital. The certificates of this hospital are recognised by all the universities and licensing bodies of the United Kingdom. Six Medical Clinical Clerks and 12 Surgical Resident Pupils and Dressers are appointed every six months, and House Surgeons and Clinical Assistants are elected annually. The session will open on Oct. 1st. A prospectus giving the complete arrangements for the Medical and Surgical classes for the coming session may be obtained from the Secretary of the Medical Board, Mr. Henry Stokes, 32, Upper Fitzwilliam-street, Dublin.

MERCER'S HOSPITAL.—This hospital, founded in 1734, is situated in the centre of Dublin, in the immediate vicinity of the Schools of Surgery of the Royal College of Surgeons, the Catholic University School of Medicine, and within five minutes' walk of Trinity College. It contains 120 beds for medical and surgical cases, and arrangements have been made with the medical officers of Cork-street Fever Hospital whereby all students of this hospital are entitled to attend the clinical instruction of that institution and become eligible for the posts of Resident Pupil, &c. There are a large out-patient department and a special department for diseases peculiar to women. There are also special wards for the treatment and study of children's diseases. During the past few years the hospital has undergone extensive alterations in order to bring it up to modern requirements.

Appointments.—A House Surgeon is appointed annually. Five Resident Pupils, each for six months, and Clinical Clerks and Dressers are appointed monthly from amongst the most deserving members of the class.

Fees.—Winter, six months, £8 8*s.*; Summer, three months, £5 5*s.*; nine months, £12 12*s.*

Consulting Physician: Dr. J. Magee Finny. Consulting Surgeon: Vacant. Consulting Gynæcologist: Dr. J. H. Glenn. Consulting Ophthalmic Surgeon: Mr. J. B. Story. Physicians: Dr. J. Lumsden and Dr. F. Purser. Surgeons: Mr. R. C. B. Maunsell, Mr. S. S. Pringle, and Mr. W. Ireland de C. Wheeler. Gynæcologist: Dr. A. N. Holmes. Radiologist: Dr. T. G. Hardman. Pathologist: Dr. J. T. Wigham. Anæsthetist: Dr. J. Beckett. Dental: J. Cockburn, L.D.S.

For further particulars apply to Mr. Seton Pringle, Hon. Sec., Medical Board, 27, Lower Baggot-street, Dublin.

NATIONAL MATERNITY HOSPITAL, Holles-street, Dublin.—Established 1894. Masters: Sir Andrew J. Horne and Dr. R. J. White. Intern cases, 1070; extern cases, 1179; dispensary cases, 3000. Comfortable quarters have been recently provided for students. The large number of cases at the hospital give great opportunities for practical work. Arrangements are made for post-graduate and special courses. Certificates of attendance at the hospital are recognised by all the licensing bodies. For further particulars apply to the Masters.

*RICHMOND, WHITWORTH, AND HARDWICKE HOSPITALS, North Brunswick-street, Dublin.—These hospitals contain 224 beds—87 for Surgical cases, 60 for Medical cases, and 77 for Fever and other Epidemic Diseases. A Resident Physician and a Resident Surgeon are appointed each half year and are paid for their services. 12 Resident Clinical Clerks are appointed each quarter and provided with furnished apartments, fuel, &c. These appointments are open not only to advanced Students but also to those who are qualified in Medicine and Surgery. The Dressers are selected from among the best qualified of the pupils without the payment of any additional fee. For prospectuses apply to Dr. Travers Smith, Hon. Secretary, 20, Lower Fitzwilliam-street, Dublin.

ROTUNDA HOSPITAL, Dublin.—This institution is the largest combined gynæcological and maternity hospital in the British Empire. Qualified men who take out a course of two months' duration are given one or more forceps applications, perineorrhaphies, &c., and a certain number of minor gynæcological operations. Students can enter at any time for the practice of the hospital and have access, not alone to the maternity and gynæcological wards, but also to the pathological laboratory attached to the hospital. The residential quarters have been rebuilt and refurnished with electric lighting, new baths, billiard table, new reading-room, new dining-room for lady students, &c., and afford most comfortable accommodation. Valuable appointments are periodically filled by qualified students who have obtained the hospital diploma. Women students can reside in the hospital on terms similar to those enjoyed by men. Master: Dr. Henry Jellett. Assistants: Dr. Allan and Dr. Crichton. Pathologist: Dr. R. J. Rowlette. For further particulars apply to Dr. Henry Jellett, Master.

ROYAL CITY OF DUBLIN HOSPITAL.—Founded 1832; enlarged 1851; rebuilt 1893. 124 beds. Consulting Physician: Sir Hawtrey Benson. Physicians: Dr. A. R. Parsons and Dr. T. G. Moorhead. Surgeons: Mr. G. J. Johnston, Mr. H. Moore, and Mr. R. A. Stoney. Ophthalmic and Aural Surgeon: Mr. Frank C. Crawley. Gynæcologist: Mr. G. Fitzgibbon. Ear, Throat, and Nose Surgeon: Dr. T. O. Graham. Anæsthetist: Mr. G. P. Meldon. Dental Surgeon: Mr. D. L. Rogers. Secretary: Mr. Edw. B. Armstrong.

ROYAL VICTORIA EYE AND EAR HOSPITAL, Dublin.—Established 1844. Incorporated 1897. 100 beds. Consulting Physicians: Dr. J. Little and Dr. R. A. Hayes. Consulting Dental Surgeon: Mr. A. W. W. Baker. Surgeons: Mr. J. B. Story, Mr. Patrick W. Maxwell, and Mr. Louis Werner. Assistant Surgeons: Mr. H. C. Mooney, Mr. F. C. Crawley, Mr. J. O. Cummins, Mr. R. H. Mathews, and Miss E. Maxwell. Clinical Assistants: Miss K. F. Lynn and Dr. J. A. Valentine. Surgeon to Dispensary for Throat: Dr. T. O. Graham. Surgical Radiographer: Mr. W. S. Haughton. Registrar: Mr. G. A. Howell. Anæsthetists: Dr. J. Beckett and Dr. T. A. Watson. In-patients, 1533; out-patients, 11,509. Two house surgeons appointed annually.

DR. STEEVENS' HOSPITAL, Dublin. — Established 1720. 200 beds. Consulting Physicians: Dr. J. Little, Dr. J. M. Purser, and Dr. H. C. Tweedy. Consulting Surgeon: Sir C. B. Ball. Physicians: Dr. R. A. Hayes, Dr. T. P. C. Kirkpatrick, and Dr. W. A. Winter. Assistant Physician: Dr. J. J. Purser. Surgeons: Mr. R. B. McCausland, Mr. R. L. Swan, Mr. W. S. Haughton, and Mr. W. C. Stevenson. Assistant Surgeon: Dr. W. A. Cooke. Anæsthetist: Dr. F. O'Brien Kennedy. Obstetric Physician and Gynæcologist: Dr. E. H. Tweedy. Ophthalmic and Aural Surgeon: Dr. R. H. Mathews. Pathologist: Dr. W. M. Crofton. Dental Surgeon: Mr. G. M. P. Murray. Resident Surgeon: Dr. H. C. Smyth. Assistant House Surgeon, Assistant X Rayist, and Secretary: Mr. G. E. Pepper. Patients, 1397.

ST. VINCENT'S HOSPITAL AND DISPENSARY, Dublin.—Established 1834. 160 beds. Physicians and Lecturers on Medicine: Dr. M. F. Cox, Dr. M. McHugh, and Dr. W. J. Dargan. Physician for Extern Department: Dr. J. Meenan. Surgeons and Lecturers on Surgery: Mr. J. S. McArdle, Mr. R. F. Tobin, and Mr. D. J. Kennedy. Surgeon to Extern Department: Mr. H. Meade. Gynæcologist and Lecturer on Gynæcology: Mr. A. J. Smith. Pathologist and Lecturer on Pathology: Dr. T. T. O'Farrell. Surgeon-Dentist and Lecturer on Dentistry: Mr. J. J. Murphy. Pharmacist and Lecturer on Pharmacy: R. Shaw.

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* No returns.

UNIVERSITY OF BRUSSELS.

British and other practitioners holding registrable qualifications are admitted to the examination for the Doctorate of the University of Brussels without further curriculum. It is essentially a practitioner's examination and is separate from that intended for the Belgian students who take up the medical curriculum of the University. The fees are—For matriculation, £8 12*s.*; for 1st Part, £4 4*s.*; for 2nd Part, £4 8*s.*; for 3rd Part, £4 8*s.*; for legalisation of diploma, 8*s.*—total, £22. Candidates who have paid in advance the fees for the three examinations, and are unsuccessful in the first, recover the fees paid for the second and third; those who fail in the second recover the fees paid for the third examination. Unsuccessful candidates are allowed to come up again three months after rejection on payment of examination fees only, provided this second appearance be in the course of the same academical year (Oct. 1st to June 30th), otherwise they must renew the payment of the matriculation fee of £8 12*s.* The examination consists of three parts, viz.—1st Part: General Medicine; Materia Medica and Pharmacology; General Surgery; and Theory of Midwifery. 2nd Part: General Therapeutics; Pathology and Morbid Anatomy, with use of the microscope; Special Therapeutics and Medicine of Internal Diseases, including Mental Diseases; and Special Surgery. 3rd Part: Public and Private Hygiene; Medical Jurisprudence; Clinical Medicine; Clinical Surgery; examination in Operative Surgery, consisting of some of the usual operations on the dead subject—viz., Amputation, Ligature of an Artery, &c.; Ophthalmology; examination in Midwifery, consisting in obstetrical operation on the mannikin (model of pelvis); and examination in Regional Anatomy with Dissection. The time required for the three examinations seldom exceeds ten days, and is usually less. Candidates have the option of passing each part separately, or of taking the three together, and the latter is the usual course; also of demanding a written examination on payment of an additional fee of one guinea for each part, a rule of which candidates rarely or never avail themselves. The examinations, which are *vivâ voce*, begin on the first Tuesday in November, December, March, May, and the second Tuesday in June (middle June). Candidates should appear with their medical registration certificate or their diplomas at the Secretary's office not later than 2 P.M. on the day preceding the examination. Most of the examiners speak English, and those who do not examine through the medium of an interpreter. Great importance is attached to practical knowledge, but candidates must also possess sound theoretical knowledge, the standard required varying with the subject. Pathological and other specimens are not usually shown. There are in England and the Colonies at present over 600 graduates holding this degree, and a British Association of Brussels Medical Graduates has been in existence for many years. Applications should be made to the Secretary, 14, Rue des Sols, Brussels.

THE NAVAL, MILITARY, AND INDIAN MEDICAL SERVICES.

THE conditions of service in the medical departments of the Royal Navy, Army, and Indian Army, remain, with very slight modifications, the same as for 1913.

With regard to the Navy an Order in Council was issued on August 8th, 1911, based, it is understood, on the report of Sir John Durnford's Committee, appointed five years ago. This Order, we fear, was a disappointment to all but the senior officers of the Service. The old ranks of inspector and deputy inspector-general became surgeon and deputy surgeon-general, as they used to be in the army. Pay was increased by 1*s.* or 2*s.* daily every year or two till 26 years' service, when it is £1 15*s.* a day, and for fleet surgeons does not rise any higher. Deputy surgeons-general now get £2. 5*s.* daily. Senior medical officers of battleships and cruisers with complements of 650 and upwards get 3*s.* 6*d.* daily charge pay, which is very right and has often been asked for. Charge pay is now given more freely. The surgeon who passes the staff surgeon's examination at his first attempt may secure 18 months' earlier promotion by getting a special certificate (or 12 months' if he only attains a first class), provided the Admiralty thinks him deserving and the Director-

General does not reduce the period. A surgeon who has passed this examination before eight years may, as formerly, retire with a gratuity of £1000 if he so choose; but if he has not passed at eight years he will be compulsorily retired on any gratuity the Admiralty thinks right, not exceeding £500.

We would strongly urge on the authorities the advisability of removing the still existing legitimate grievances; the reforms could for the most part be effected at the expense of but little tact and a consideration of what is justly due to the naval medical officers. The cabin question, so long a source of dissatisfaction, has, we hope, been at last settled. Another innovation sadly wanted is a regulation to ensure that the senior medical officers in hospitals should have proper disciplinary power over their subordinates and patients. Other points, such as the supply and use of boats, for example, might well be settled in accordance with the just desires of the Naval Medical Service, for the Admiralty will be prudent to aim at making the Service more popular. And the same may be said of all three services. For that there is now no competition for commissions in the Naval Medical Service and no keen competition for those in the Army Medical Corps or the Indian Medical Service seems undeniable, and this is the more unfortunate since fewer men are now entering the medical profession as a whole. It is no longer easy for all hospitals to obtain suitable residents, while assistants are scarce and even junior partners are not to be found directly they are wanted. The Services will therefore have to be careful to increase their popularity, and the point is that it may be economical for them to do so now. By small concessions they may avoid having later to pay a heavy price to attract men. We would also suggest that it is unwise to let any of these departments run below the normal strength if it is possible to maintain them at par.

Though some further reform may be wanted in the Naval Medical Service, its present state is not without material advantages. At one time not so very long ago the Naval Medical Service was not looked upon as one in which an educated gentleman could serve with dignity, while complaints were heard of many of the conditions of service. But the old order of things is giving place to the new, and a comparison of the lot of the naval medical officer with that of the civil practitioner will show that the trials of the civil branch of the profession are greater than those of the naval branch, and probably when all things are considered the naval surgeon is in a far better position than the average lay professional man. In the junior ranks of the Service the pay is better than the average income of the lay medical man of the same age, and promotion is not always slow. With £20 a month the young naval surgeon can, if he is not extravagant, get along very comfortably, though he will require at the commencement of his career £50 or £60 for outfit. A private income is certainly not necessary. After 20 years of service a naval surgeon is entitled to a pension of £365 a year, which compares very favourably with the prospects of many medical men on the civil side of the profession, and in case of illness there is the half-pay rate, while pensions are provided for widows and children. In this way the young naval officer is relieved of the most serious anxiety which can press upon a married man, but he ought not to marry young without due consideration, a warning which, however, applies to most medical men. With regard to the Medical Services of the Army and Indian Army, a comparison with that of the Navy shows that though the Army and Indian Service are better paid, promotion has been rendered less certain in each case; in both services expenses are higher and the work more fatiguing, while in the Indian Service there is a greater liability to disease and death. The young surgeon, too, on board his vessel probably gets a better chance in the Navy than in the Army. So long as the new surgeon is adequately good at his profession, is kind and unselfish towards his patients, is not too self-assertive, and has any positive accomplishments or skill at any sport or game, he should get on very well, especially if he is good-humoured and helpful. And if a man has not these qualities where should he be advised to practise?

The conditions of entry into the Royal Naval Medical Service were altered in 1910. Formerly, candidates on passing the examination in London at once received their commissions as surgeons in the Royal Navy. They are now appointed acting surgeons. Moreover, after courses of instruction, they will be again examined, and if they pass this examination also will be duly commissioned. Their seniority—that is, their place on the list throughout their service—will depend on the marks they get in both examinations. The standard of marking is not disclosed, and proficiency in the second examination in subjects which have been studied only through perhaps three or six months may avail as much in fixing their places as success in the first examination, which is the outcome of the industry and training of at least five years. This point should be cleared up by the Admiralty, as the uncertainty operates to discourage application from the best candidates, the most highly educated, those most desired by the service, who will be rather shy to trust their hard-won pre-eminence to so doubtful a fortune. An extra 10 per cent. for the second examination would give plenty of inducement to the acting surgeons to be attentive to the important instruction in tropical diseases and naval hygiene they receive at Greenwich and Haslar. The relative proportions should be mentioned if the best candidates are not to be frightened away. The entrance examination was also altered. Voluntary subjects and hygiene were done away with. The examination deals with medicine and surgery only. In each subject there is a written, a clinical, and an oral examination, and 400 marks are given for each of the six examinations. This scheme gives a material advantage in the competition to less broadly educated candidates. Confidential reports as to the character of a candidate are now to be obtained from the dean of his medical school. Certain additional marks are given to candidates who possess certificates from the Officers' Training Corps. Nominated candidates, except those nominated by colonial universities, are no longer allowed.

Royal Naval Medical Service.

Regulations for the Entry of Candidates for Commissions in the Medical Department of the Royal Navy.[1]

Every candidate for admission into the Medical Department of the Royal Navy must be not under 21 nor over 28 years of age on the day of the commencement of the competitive examination. He must produce an extract from the register of the date of his birth; or, in default, a declaration made before a magistrate, from one of his parents or other near relative, stating the date of birth.

He must declare (1) his age and date and place of birth; (2) that he is of pure European descent[2] and the son either of natural-born British subjects or of parents naturalised in the United Kingdom; (3) that he labours under no mental or constitutional disease or weakness, nor any other imperfection or disability which may interfere with the most efficient discharge of the duties of a medical officer in any climate; (4) that he is ready to engage for general service at home or abroad, as required; (5) whether he holds, or has held, any commission or appointment in the public services; (6) that he is registered under the Medical Act, giving the date of his registration as a medical student, or of his beginning professional study; and (7) whether he has previously been examined for entry in the Naval Service, and, if so, when.

The certificates of registration and birth must accompany the declaration, which is to be filled up and returned as soon as possible, addressed to the Director-General, Medical Department, Admiralty, London, S.W., to permit of reference to the candidate's medical school. The Dean or other responsible authority of such school will be requested by the Medical Director-General to render a confidential report as to the candidate's character, conduct, professional ability, and fitness to hold a commission in the Royal Navy. The candidate will then be interviewed by the Medical Director-General, and his physical fitness will be determined by a board of Naval Medical Officers. The Medical Director-General will then decide whether he may be allowed to compete. If accepted, the candidate will be eligible to present himself at the entrance examination, which will be held twice a year. Notification of the exact date of this, as well as the number of commissions to be competed for, will be advertised in THE LANCET. Candidates will be examined in the following subjects: (*a*) Medicine, including Medical Pathology and Therapeutics; and (*b*) Surgery, including Surgical Pathology and Clinical Surgery. The examination will be partly written and partly practical, marks being allotted under the following scheme:—

Medicine.		*Surgery.*	
Paper	400	Paper	400
Clinical...	400	Clinical...	400
Oral	400	Oral	400
Total	1200	Total	1200

No candidate will be considered eligible who obtains less than 50 per cent. of marks in each subject. The examination will be held in London and will occupy four days.

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[1] To be obtained, together with the form to be filled up, on application to the Medical Director-General, Admiralty, London, S.W.

[2] If any doubt should arise on this question the burden of clear proof that he is qualified will rest upon the candidate himself.

The appointments announced for competition will be filled from the list of qualified candidates, arranged in order of merit; but should it at any time be considered expedient to grant Commissions beyond those periodically competed for, the Admiralty have power to admit annually not more than six candidates, according to requirements, specially recommended by the governing bodies of such Colonial Universities as may be selected and whose qualifications are recognised by the General Medical Council. Candidates so proposed are to be approved by the Director-General of the Medical Department of the Navy. Colonial candidates will have to pass a physical examination before a board of Naval Medical Officers in their colony, and will be required to register their qualifications on arrival in England. They will be allowed, if they wish it, to compete at the next examination for entrance and take their position according to the order of merit; should they decide not to compete they will be placed at the bottom of the list. It will, however, be necessary in any case for them to pass a qualifying test at the time of the usual half-yearly examinations, when they will be required to obtain a minimum of 50 per cent. of the total marks in each subject. In case of failure in this test examination the Admiralty will not undertake to defray the cost of the return journey to the candidate's colony or other expenses thereby incurred. A fee of £1 will have to be paid by each candidate to entitle him to take part in the competition.

Candidates who have served in the Officers' Training Corps, and who are in possession of the certificates laid down in the regulations for that Corps, will be credited at the entrance examination with additional marks as follows: Candidates in possession of Certificate A will receive 1 per cent., and those who possess Certificates A and B, 2 per cent. of the maximum number of marks allotted.

A candidate will not be allowed to compete at more than two examinations.

A candidate successful at the entrance examination will be appointed as Acting Surgeon in the Royal Navy and will be required to pass through such courses of instruction as the Admiralty may decide. At the end of the courses the acting surgeon will be examined and after he has passed will be given a commission as Surgeon in the Royal Navy. The commission will date from the day of passing the entrance examination. An acting surgeon who fails to qualify in the above examination (i.e., who fails to get 50 per cent. of marks in each subject of the Greenwich and Haslar courses) will be allowed a second trial at the next examination, the period between the two examinations not being counted as service for either promotion, withdrawal with gratuity, or retirement after 20 years' service, and should he qualify he will be placed at the bottom of his list; should he again fail his appointment will not be confirmed and he will be required to withdraw.

A gold medal, a silver medal, and three navy regulation pocket cases will be awarded as prizes in connexion with these examinations, and the gold medallist will have a distinguishing mark after his name in the Navy List, provided he obtains 75 per cent. of the aggregate maximum.

Surgeons on entry are only required to provide themselves with a regulation pocket case of instruments. Acting Surgeons need only provide themselves with undress and mess uniforms.

A candidate, who at the time of passing the examination for entry holds or is about to hold an appointment as Resident Medical or Surgical Officer in a recognised civil hospital, may be allowed to serve in such civil appointment, provided that the period of such service after the date of entry into the Royal Navy does not exceed one year. Pay from Naval funds will be withheld from officers while thus serving, but the time concerned will reckon for increase of full and half pay while on the active list, and retired pay or gratuity on retirement or withdrawal; except that no officer will be allowed to retire on a gratuity until he has completed four years' service, exclusive of the time spent as Resident Medical or Surgical Officer. The eligibility of this appointment to count for time will be decided by the Medical Director-General.

The seniority of surgeons on entry will be determined by the sum total of the marks they obtain at the London examination and those at the conclusion of their probationary period as Acting Surgeon. Their names will then be placed in the official navy list. Candidates who hold or are about to hold, a post as resident medical or surgical officer to a recognised civil hospital will retain the position in the list which they obtained on entry, and when their period of service as resident officer is over they will join the next Acting Surgeon's course and will be required to obtain qualifying marks. Surgeons entered without competition will take seniority next after the last surgeon entered at the same time by competition.

A Naval Medical School has been established at the Royal Naval College, Greenwich. Two Fleet Surgeons fill the posts of Professor of Bacteriology and Clinical Pathology and Professor of Naval Hygiene. The present holders of these posts are respectively Fleet Surgeon P. W. Bassett-Smith, C.B., F.R.C.S., and Fleet Surgeon A. Gaskell, F.R.C.S. The latter is in charge of the studies of Naval Medical Officers undergoing courses at this school. The course of instruction for Acting Surgeons is six months in duration, two of which are passed at Greenwich in the study of Tropical Medicine, Bacteriology and Clinical Pathology, and Hygiene; and the remaining four at Haslar in the study of Naval Hygiene, Recruiting, Physical Training, Diving, Submarine Work, Radiography, Anæsthetics, Dentistry, &c. A Fleet Surgeon, assisted by a Staff Surgeon, superintends these studies at Haslar and fills the post of Lecturer on Naval Hygiene. At the conclusion of the six months' course an examination is carried out as above mentioned.

Post-Graduate Instruction and Examination for the Rank of Staff Surgeon.

The post-graduate instruction of Naval Medical Officers consists of two courses: (1) A five months' course before promotion to Staff Surgeon; (2) a second course of three months for officers of not less than 14 years' seniority. The first course is compulsory for all surgeons, and is followed by examination before the Medical Examining Board in London, in order to qualify for promotion to Staff Surgeon. The course is to be taken when the surgeon has between four and a half and six and a half years' seniority, as near the latter date as practicable. These courses take place twice a year. There are six compulsory subjects: Clinical Medicine and Surgery, Operative Surgery, Practical Anæsthetics, Ophthalmology, Clinical Pathology, and Hygiene; and two optional subjects: Diseases of the Throat, Nose, and Ear, and Skiagraphy. A surgeon who fails to obtain a pass will be allowed a second trial; if again unsuccessful, he will be compulsorily retired on attaining eight years' seniority, with such gratuity (not exceeding £500) as the Admiralty may see fit to grant.

Instruction in clinical pathology and hygiene, and skiagraphy is given at the Naval Medical School; the other subjects are studied at the "Dreadnought" Hospital and other civil hospitals in London, as may be arranged by the Medical Director-General. The surgeons going through the course are accommodated at the Royal Naval College, Greenwich, under the general control of the President; their instruction being supervised by the Professor of Hygiene.

The second course is not compulsory, but is designed to afford senior officers an opportunity for refreshing their knowledge of surgery and medicine, and making themselves familiar with modern advances. There will not be any fixed syllabus, but arrangements will be made to meet individual requirements. The officers attending the course will also be accommodated at Greenwich.

Voluntary classes for instruction of about six weeks' duration are held at the Naval Hospitals at the three home ports (Chatham, Haslar, Plymouth) for the benefit of medical officers, to whom every facility will be afforded for the study and practice of bacteriology, clinical pathology, skiagraphy, &c., in the hospital laboratories, a report being forwarded to the Admiralty at the close of each course.

Promotion to Staff Surgeon.

(*a*) Rank as Staff Surgeon will be granted, subject to their Lordships approval, to surgeons at the expiration of eight years from the date of entry, provided they are recommended by the Medical Director-General, have served at sea for three years, and have passed the qualifying examination for this rank. (*b*) Special promotions will be made at their Lordships' discretion to the rank of Staff Surgeon in cases of distinguished service or conspicuous professional merit. Such promotions will be exceptional and not exceed the rate of one a year. The total number at any one time of Staff Surgeons holding that rank by such special promotions will not exceed eight. These limitations do not apply to promotions for gallantry in action.

(*c*) *Accelerated Promotion.*—Certificates will be granted at the qualifying examination for Staff Surgeon as follows:—50 per cent. of marks for a pass; 75 per cent. for a first class, and 85 per cent. for a special certificate. An officer obtaining a first class is eligible for an advance of 12 months' seniority, and one obtaining a special certificate for 18 months' seniority; this acceleration will not be granted on examination results alone, and an officer must also be recommended as deserving of advancement. The amount of seniority allowed may be reduced, if considered advisable by the Director-General; and if a surgeon fails to pass at the first attempt, the results of a second successful trial will not count towards accelerated promotion.

Promotion to Fleet Surgeon.

(*a*) Subject to the approval of the Lords Commissioners of the Admiralty rank as Fleet Surgeon will be granted to Staff Surgeons at the expiration of eight years from the date of promotion to Staff Surgeon, provided they are recommended by the Medical Director-General, have served in that rank at sea for three years, and have not declined service except for reasons which in the opinion of the Lords Commissioners of the Admiralty are satisfactory. (*b*) Special promotions from the rank of Staff Surgeon to that of Fleet Surgeon will be made at their Lordships' discretion in cases of distinguished service or conspicuous professional merit. Such promotions will be exceptional and will not exceed the rate of one in two years; the total number at any one time of Fleet Surgeons holding that rank by such special promotions will not exceed six: these limitations do not apply to promotion for gallantry in action.

Promotions to Surgeon-General and Deputy Surgeon-General will be made strictly by selection, and will be confined to officers who have proved themselves to be fitted, both professionally and as administrators, for these ranks. For advancement to Deputy Surgeon-General two years' sea service in the rank of Fleet Surgeon will be required, or five years' combined service at sea in the ranks of Fleet and Staff Surgeon.

Full Pay.

Rank.	Daily.	Annual.
	£ *s.* *d.*	£ *s.* *d.*
Surgeon—		
On entry	0 14 0	255 10 0
After 2 years	0 15 0	273 15 0
,, 4 ,, ...	0 17 0	310 5 0
,, 6 ,, ...	0 18 0	328 10 0
Staff Surgeon—		
On promotion	1 0 0	365 0 0
After 2 years	1 1 0	383 5 0
,, 4 ,, ...	1 4 0	438 0 0
,, 6 ,, ...	1 5 0	456 5 0
Fleet Surgeon—		
On promotion	1 7 0	492 15 0
After 2 years	1 8 0	511 0 0
,, 4 ,, ...	1 10 0	547 10 0
,, 6 ,, ...	1 11 0	565 15 0
,, 8 ,, ...	1 13 0	602 5 0
,, 10 ,, ...	1 15 0	638 15 0
Deputy Surgeon-General...	2 5 0	821 5 0
Surgeon-General...	—	1300 0 0

Charge Pay.

The medical officers in charge of the following hospitals and sick quarters will be granted charge pay: Haslar, Plymouth, Chatham, Malta, Hong-Kong, Bermuda, Portland, Yarmouth, Haulbowline, Cape, Gibraltar, Shotley, Yokohama, and Deal; also R.N. Boys' Training Establishment at Devonport. The rate of charge pay will be as follows:—

	s.	*d.*	
Surgeon-General	10	0	a day.
Deputy Surgeon-General	7	6	,,
Fleet Surgeon of over 4 years' seniority	5	0	,,
Fleet Surgeon of under 4 years' seniority and Staff Surgeon of over 4 years' seniority	2	6	,,

At Chatham, Haslar, and Plymouth charge pay is granted of 5*s.* daily to Deputy Surgeons-General, and 2*s.* 6*d.* to Fleet Surgeons in charge of sections. Also charge pay at 3*s.* 6*d.* a day is granted to the Senior Medical Officers of all seagoing ships with complements over 650.

Allowances.

The hospital allowances for naval medical officers at home and abroad, in lieu of provisions, for themselves and servants, and for fuel and lights, are as follows :—

—	At home.	Abroad.
	£	£
Deputy Surgeons-General	67	112
Fleet Surgeons and Staff Surgeons of over 4 years' seniority	53	112
Staff Surgeons of under 4 years' seniority and Surgeons...	39	108

These allowances are also granted to medical officers of Marine Divisions and Dockyards, at the Marine Rendezvous, and to the Inspecting Officer of the Royal Navy Auxiliary Sick Berth Staff.

An allowance of 5*s.* a day, in addition to full pay, is granted to the senior medical officer, being a Fleet or Staff Surgeon, of a flag-ship bearing the flag of a Commander-in-Chief. An allowance of 2*s.* 6*d.* a day is granted to the senior medical officer, being a Fleet or Staff Surgeon, of the ship bearing other flags or broad pendants. The following charge allowances may be granted to medical officers in charge of hospital ships: if above the rank of fleet surgeon, 5*s.* a day; and if of the rank of fleet surgeon or junior, 3*s.* 6*d.* a day. Medical officers conducting the courses of instruction will receive the following special allowances: At Greenwich, the Professor of Bacteriology, £150 a year; the Professor of Hygiene, £150 and £50 for charge of the studies of naval officers undergoing instruction. At Haslar, the Fleet Surgeon, £150; the Junior Officer instructing sick berth staff, £50: at Plymouth and Chatham the same allowance of £50 is granted. Medical officers employed elsewhere than at a hospital, and not victualled in kind, receive an allowance of 1*s.* 6*d.* a day in lieu of provisions, fuel, and lights. The travelling allowances, extra pay, lodging money, and compensation for losses are fixed for naval medical officers according to their relative rank in the service.

The emoluments of the medical headquarters staff at the Admiralty are: Medical Director-General, £1800 per annum; Deputy Director-General, £1100 per annum; Assistants to Director-General, each £750 per annum.

Half Pay.

Rank.		Daily.	Yearly.
Surgeon—		£ *s.* *d.*	£ *s.* *d.*
Under 2 years' full-pay service	Including time in Civil Hospital Appointment.	0 6 0	109 10 0
After 2 years' full-pay service		0 7 0	127 15 0
,, 4 ,, ,,		0 8 0	146 0 0
,, 6 ,, ,,		0 9 0	164 5 0
Staff Surgeon—			
On promotion		0 10 0	182 10 0
After 2 years' service in rank		0 11 0	200 15 0
,, 4 ,, ,, ...		0 12 0	219 0 0
,, 6 ,, ,, ...		0 13 0	237 5 0
Fleet Surgeon—			
On promotion		0 14 0	255 10 0
After 2 years' service in rank		0 15 0	273 15 0
,, 4 ,, ,, ...		0 17 0	310 5 0
,, 6 ,, ,, ...		0 18 0	328 10 0
,, 8 ,, ,, ...		0 19 0	346 15 0
,, 10 ,, ,, (maximum) ...		1 0 0	365 0 0
Deputy Surgeon-General—			
On promotion		1 5 0	456 5 0
After 2 years' full-pay service in rank		1 7 0	492 15 0
,, 4 ,, ,, ...		1 9 0	529 5 0
Surgeon-General		1 18 0	693 10 0

Candidates will do well to notice that the regulations issued to applicants do not put any limit on the amount of half-pay service which they may be compelled to undergo, also that time on half-pay counts only one-third towards retirement.

Retirement.

Compulsory retirement will be as follows :—

Surgeon-General and Deputy Surgeon General, R.N.	At the age of 60, or at any age, if he has had three years' non-employment in any one rank, or after four years' continuous non-employment in any two ranks combined. Except that if in any particular case the Lords Commissioners of the Admiralty may consider that the interests of the public service will be materially advanced by the further retention of a Surgeon-General on the active list, the age for the retirement of such Surgeon-General may be extended to 62.	To be retired irrespective of age if found physically unfit for service.
Fleet Surgeon, Staff Surgeon, and Surgeon.	At the age of 55, or at any age, if he has had three years' non-employment in any one rank, or after four years' continuous non-employment in any two ranks combined.	

The special attention of candidates is directed to the following rules under which officers are allowed to withdraw from the service after four years' full pay service in the Royal Navy, with the advantage of joining the Reserve of Naval Medical Officers :—

After four years' service in the Royal Navy, an officer, if he wishes, may pass from active service to the Reserve of Naval Medical Officers, when he will reap the following advantages :—

(1) He will be granted a gratuity of £500 on passing into the Reserve.

(2) His name will be retained in the Navy List; he will retain his naval rank and be entitled to wear his naval uniform under the regulations applying to officers on the retired and reserved lists of His Majesty's Navy.

(3) If he agree to remain in the Reserve for four years he will receive a retaining fee of £25 per annum. If at the expiration of this period he agree to remain in the Reserve for a further period of four years he will continue to receive the same retaining fee.

Should an officer prefer it, however, he may simply enter the Reserve for a period not exceeding eight years, with power to give six months' notice of his intention to resign his position at any time (in which case he will receive no retaining fee). He may also adopt this method of Reserve service after the expiration of four years served under the conditions referred to in (3), by renouncing his retaining fee for his last four years' service in the Reserve.

No officer will be allowed to remain in the Reserve for a longer period than eight years. Whilst belonging to the Reserve, officers must report any change of address to the Secretary of the Admiralty.

Any officers who from residence abroad, physical disability, or for other reason may be considered by the Admiralty to be not available for service if required, will be liable to removal from the Reserve and forfeiture of retainer.

Officers of the Reserve will be liable to serve in the Royal Navy in time of war or emergency. When called up for such service they will receive the rate of pay—viz., 17*s.* a day and allowances—to which they would have been entitled after four years' service on the active list.

Voluntary retirement and withdrawal will be allowed as follows: (*a*) Every officer will have the option, subject to their Lordships' approval, of retiring after 20 years' full-pay service on the scale of retired pay provided in the table below, or with a gratuity on the scale provided in that table if not eligible for retired pay. (*b*) At the expiration of four, eight, 12, or 16 years' full-pay service every officer will be permitted, subject to their Lordships' approval, to withdraw from the Naval Service, receiving a gratuity on the scale laid down in the table below. It is to be noted that the four years' service is exclusive of time served as resident officer in a civil hospital. The name of an officer so withdrawing will be removed from the list of the Navy, with which all connexion will then be severed, except in the case of officers who withdraw after four years, who are liable to serve in the Reserve. (*c*) Applications from officers to retire or withdraw or resign their commissions will receive every consideration, but no officer will, as a rule, be permitted to resign under three years from the date of entry. In order that arrangements may, as far as possible, be made for the relief of officers who may wish to withdraw on a gratuity it is desirable that six months' notice of their wish should be forwarded for the consideration of their Lordships. The Admiralty reserve to themselves power to remove any officer from the list for misconduct.

Gratuities and retired pay will be awarded on retirement and withdrawal on the undermentioned scale :—

Rank.	Gratuities.	Daily.	Yearly.
Surgeon, Staff Surgeon, and Fleet Surgeon—	£ *s.* *d.*	£ *s.* *d.*	£ *s.* *d.*
After 4 years' full-pay service	500 0 0	—	—
After 8 years' full-pay service*	†1000 0 0	—	—
After 12 years' full-pay service*	1500 0 0	—	—
After 16 years' full-pay service*	2250 0 0	—	—
Fleet Surgeon—			
After 20 years' service ...	—	‡1 0 0	365 0 0
After 24 years' service (including proportion of half-pay time)	—	‡1 2 6	410 12 6
After 27 years' service (including proportion of half-pay time)	—	‡1 5 0	456 5 0
After 30 years' service (including proportion of half-pay time), or on compulsory retirement at the age of 55	—	‡1 10 0	547 10 0
Deputy Surgeon-General ...	—	1 15 0	638 15 0
Surgeon-General	—	2 0 0	730 0 0

* Including time served as resident in civil hospital.

† The gratuity will not exceed £500 in case of a Surgeon retired for failure to pass for Staff Surgeon.

‡ To obtain this rate an officer must hold the commission of Fleet Surgeon.

An officer retired with less than 20 years' service on account of disability, contracted in and attributable to the Service, will receive the half pay of his rank, or, with the consent of their Lordships, a gratuity on the scales given in the above table, but such officer will not be entitled to receive any special compensation for the disability in addition to the gratuity as above.

An officer retired with less than 20 years' service on account of disability, contracted in but *not* attributable to the Service, will receive—(*a*) if he has over eight years' full-pay service, either a gratuity on the scale given above or half-pay according as their Lordships think fit; (*b*) if he has less than eight years' full-pay service, such gratuity as their Lordships think fit, not exceeding the rate of £125 for each year of full-pay service. If the health of a surgeon breaks down before he completes 20 years' service, even if his disability be contracted in the Service or be due to climatic causes, he is liable at once to be placed on the retired list, receiving only a gratuity. This point should be well noted, as the position is a most unjust one. It should be clearly laid down what is to be understood by "attributable."

In circumstances other than those specified in the last two paragraphs, and other than misconduct, neglect of duty, &c., an officer retired with less than 20 years' service will not be allowed half pay or retired pay, but will receive a gratuity on the scale laid down in the table above if he has eight years' full-pay service, and on that provided in the last paragraph (*b*) should his full-pay service not amount to eight years. The power vested in their Lordships of granting reduced rates of half pay and retired pay in cases of misconduct is extended to the award of gratuities on retirement, and the gratuity awarded will be reduced to such an amount as is thought fit. An officer retiring after 20 years' full-pay service will be eligible, if recommended by the Medical Director-General for distinguished or meritorious service, to receive a step of honorary rank, such step to be awarded at their Lordships' discretion, and not to confer any claim to increase of retired pay or of widow's pension. All retired officers will be liable, till the age of 55, to serve in time of declared national emergency, in a rank not lower than that held on retirement. This liability does not exist in cases of officers who withdraw from the Naval Service receiving a gratuity after 8, 12, or 16 years' full pay service. Retired officers will receive special consideration as regards appointments on shore connected with the Admiralty.

Widow's Pension.

When an officer retires or withdraws *on a gratuity* his widow and children will have no claim to pension or compassionate allowance. In respect to other officers on the active or retired list, the widow's pension ranges from £50 per annum for a surgeon's widow up to £120 for the widow of an Inspector-General; for each child an allowance is granted ranging from £9 to £20 per annum. The fact of an officer retiring *on pension* does not deprive the widow or children of any claim, if they are so entitled at the time of his retiring. Officers serving in the reserve who during re-employment are injured on duty, or lose their lives from causes attributable to the service, come under the same regulations as regards compensation for themselves, or pensions and compassionate allowances for their widows and children, as officers of the same rank on the permanent Active List.

Miscellaneous.

The medical officer of the senior flagship of a fleet is to be recognised as the Principal Medical Officer of the Fleet. He will be on the staff of the Commander-in-Chief and will wear an aiguillette; he will act as his principal adviser on medical and sanitary matters, and report on such matters periodically to the Admiralty. He will have direct access to the Commander-in-Chief, and be in a position to propose to him measures for the efficiency of the Fleet's medical organisation, being directly responsible to him for keeping him informed on these matters. A limited number of active or retired medical officers are appointed Honorary Physician or Honorary Surgeon to the King. There are three good service pensions of £100 a year; two Greenwich Hospital pensions of £100 a year; and 13 of £50 a year awarded to Naval Medical Officers. The Gilbert Blane gold medal is awarded every year to the medical officer who obtains the highest aggregate marks at the promotion examination to Staff Surgeon, held at the Royal Naval Medical School, Greenwich. Once in every five years a gold medal and £100, the Chadwick Naval or Military Prize, is presented to a naval or military medical officer who has specially assisted in promoting the health of the men in the Navy or Army.

A special cabin will be appropriated to the Fleet or Staff Surgeon or the Surgeon in charge of the medical duties in each ship. Medical officers not in charge will select their cabins, according to their rank and relative seniority, with other ward room officers.

Relative rank is accorded to medical officers as laid down in the King's Regulations and Admiralty Instructions.

We recognise that the Admiralty has made a considerable effort to render the Medical Service attractive to men of a good professional stamp. By the regulations recently promulgated promotion has been accelerated, special promotion in the lower grades has been made possible in cases of distinguished service or conspicuous professional merit, and encouragement to enter the service, in the shape of earlier promotion, has been given to men who have held resident posts in recognised hospitals. A feature of the regulations is the permission to withdraw at the end of four years with a gratuity of £500: a small increase of pay has been made to medical officers all round, and senior medical officers are put in a materially better position if they are serving in large battle-ships or cruisers. Deputy-Surgeon-Generals get the 3*s.* daily that they did not get when pay was last re-adjusted. The vexed question of cabin accommodation is, it is hoped, satisfactorily settled at last. The rewards now offered to those who pass the examination for Staff Surgeon and the severe penalties held before those who fail should ensure the medical officers of eight years' service being men of ability and industry. But we regret that there is still no mention of specialist pay such as can be got by young officers of energy in the Army and Indian Service, nor is there any acceleration of promotion for scientific work.

If pay has been increased, in respect of allowances, the medical officers of the Navy, up to the senior ranks, are not as well off as those of the Royal Army Medical Corps. There will also be discontent until the medical officers are unhampered in the performance of their important work by the executive officers. The medical officers should have control over the sick bay staff in ships, and over nurses and other attendants in hospitals, and executive officers should no longer figure as presidents of "medical surveys." The authority of the Director-General must be made adequate. To make the service thoroughly efficient the medical officers must be given authority and position commensurate with their responsibilities, as has been done in the case of the Engineer department.

ARMY MEDICAL SERVICE.

During recent years the medical service of the Army has passed through many stages of evolution, and we consider that in all essential matters the changes have been distinctly in the direction of advance and improvement, not only for the officers composing this service, but in relation to the Army at large. The formation of the Royal Army Medical Corps by the Royal Warrant of 1898, when Lord Lansdowne was War Minister, marked the first great step; then came a period of strain during the war in South Africa, when the medical services were exposed to fierce criticism. The outcome of this was the appointment of a committee of inquiry in 1901 by Mr. Brodrick (now Lord Midleton), over which he himself presided. A Royal Warrant embodying the recommendations of Mr. Brodrick's Committee was issued in 1902, which regulates the conditions at present existing; in 1907 free passages to India were granted for the wives and families of medical officers, whether employed on duty or not, an important concession, and one evidencing the liberal spirit of the War Office towards the medical service.

Since 1907 several important changes have been made from time to time. Prior to this date promotion from the rank of Major to Lieutenant-Colonel was made by seniority after the passing of an examination on attaining 20 years' service, the establishment of Lieutenant-Colonels being unlimited. Under a new clause introduced in the Royal Warrant the establishment of Lieutenant-Colonels was made a fixed number and limited to 120. Under present rules no promotion to the rank of Lieutenant-Colonel can take place unless three conditions are fulfilled—(1) there is a vacancy on the fixed establishment; (2) the officer has passed an examination for promotion; (3) he is selected as suitable for promotion. In the Colonel's grade another important and far-reaching change has been made since Jan. 9th, 1907. An officer promoted to the rank of Colonel since this date, on completing four years' service in the rank, is placed on half-pay unless further promoted or retired from the service. Officers of the substantive rank of Colonel were also removed from the Royal Army Medical Corps, and have been since shown in the Army List as belonging to the Army Medical Service; they have also a distinctive uniform.

REGULATIONS FOR ADMISSION TO THE ROYAL ARMY MEDICAL CORPS (ISSUED WITH ARMY ORDERS DATED JANUARY 1ST, 1912).

A candidate for a commission in the Royal Army Medical Corps must be 21 years and not over 28 years of age at the date of the commencement of the entrance examination, and must be unmarried. He must, at the time of his appointment, be registered under the Medical Acts in force in the United Kingdom. A candidate must complete the subjoined form of application and declaration and submit it, together with an extract from the register of his birth, and his medical registration certificate, to the Secretary, War Office, as early as possible before the date on which the entries are closed.

APPLICATION OF A CANDIDATE FOR A COMMISSION IN THE ROYAL ARMY MEDICAL CORPS.*

(*A Candidate will not be permitted to compete oftener than twice.*)

1. Name in full.
2. Address.
3. Date of birth.†
4. Nature and date of examination qualifying for registration.
5. Date of registration as a medical student.
6. Dates of passing medical examinations—First, Second, Final.
7. Qualifications. (Medical Registration Certificate, or, if not registered, Diplomas to be furnished.)
8. Academic and other distinctions.
9. Medical school or schools in which the candidate pursued his course as a medical student, and name or names of the deans or other responsible authorities.
10. Particulars of any commission or appointment held in the public services, including service in the officers training corps.
11. Date of examination at which the candidate proposes to present himself.

Declaration.

(N.B.—A mis-statement by the candidate will invalidate any subsequent appointment and cause forfeiture of all privileges for services rendered.)

I hereby declare upon my honour that the above statements are true to the best of my knowledge and belief and further:—

1. That I am a British subject of unmixed European blood.
2. That I am not, as far as I know, at present suffering from any mental or bodily infirmity, or physical imperfection or disability that is likely to preclude me from efficiently discharging the duties of an officer in any climate.
3. That I will fully reveal to the Medical Board, when physically examined, all circumstances within my knowledge that concern my health.

4. I also declare that my vision is good with either eye (with or without the aid of glasses as the case may be).

Signature ....
Date..

* All communications to be addressed to the Secretary, War Office, Whitehall, S.W.

† A certificate of registration of birth to be furnished.

(N.B.—It is of great importance that the names given in the birth certificate should be correctly given on this form, and it is to be clearly understood that when they differ the names and date of birth given in the birth or baptismal certificate will be accepted for official record.)

The dean, or other responsible authority, of the candidate's school will be requested by the Director-General to render a confidential report as to his character, conduct, professional ability, and fitness to hold a commission in the corps. A candidate whose application is regarded as satisfactory will be required to attend at the War Office a few days before the competition for the purpose of being interviewed and undergoing physical examination. It will then be decided if the candidate may be allowed to compete for a commission. The following is the order of the examinations :—

1. A candidate for a commission in the Royal Army Medical Corps must be in good mental and bodily health and free from any physical defect likely to interfere with the efficient performance of military duty.

2. The attention of the board will be directed to the following points: (*a*) That the correlation of age, height, and chest girth is not less than that which is given in the following table :—

Physical Equivalents.

Age.	Height without shoes.	Chest.	
		Girth when expanded.	Range of expansion.
	Inches.		
21 and upwards.	62½ and under 65	35 inches.	2 inches.
	65 ,, 68	35½ ,,	2 ,,
	68 ,, 70	36 ,,	2 ,,
	70 ,, 72	36½ ,,	2½ ,,
	72 and upwards.	37 ,,	2½ ,,

(*b*) Measurement of height. The candidate will be placed against the standard with his feet together and the weight thrown on the heels and not on the toes or outside of the feet. He will stand erect without rigidity and with the heels, calves, buttocks, and shoulders touching the standard; the chin will be depressed to bring the vertex of the head level under the horizontal bar and the height will be noted in parts of an inch to eighths.

(*c*) Measurement of chest. The candidate will be made to stand erect with his feet together and to raise his arms above his head. The tape will be carefully adjusted round the chest with its posterior upper edge touching the inferior angles of the shoulder blades and its anterior lower edge the upper part of the nipples. The arms will then be lowered to hang loosely by the side and care will be taken that the shoulders are not thrown upwards or backwards so as to displace the tape. The maximum expansion during deep inspiration will be carefully noted.

(*d*) Weight. The candidate will also be weighed and his weight recorded in the proceedings of the Board.

(*e*) The regulations regarding the examination of eyesight are as follows :—

Squint, or any morbid condition of the eyes or of the lids of either eye liable to the risk of aggravation or recurrence, will cause the rejection of the candidate.

The examination for determining the acuteness of vision includes two tests: one for distant, the other for near vision. The Army Test Types will be used for the test for distant vision, without glasses, except where otherwise stated below, at a distance of 20 feet; and Snellen's Optotypi for the test for near vision, without glasses, at any distance selected by the candidate. Each eye will be examined separately, and the lids must be kept wide open during the test. The candidate must be able to read the tests without hesitation in ordinary daylight.

A candidate possessing acuteness of vision, according to one of the standards herein laid down, will not be rejected on account of an error of refraction, provided that the error of refraction, in the following cases, does not exceed the limits mentioned, viz.: (*a*) in the case of *myopia*, that the error of refraction does not exceed 2·5 D; (*b*) that any correction for *astigmatism* does not exceed 2·5 D; and, in the case of myopic astigmatism, that the total error of refraction does not exceed 2·5 D.

Subject to the foregoing conditions, the standards of the minimum acuteness of vision with which a candidate will be accepted are as follows :—

Standard I.

Right eye.	*Left eye.*
Distant vision.—V = 6/6.	V = 6/6.
Near vision.—Reads 0, 6.	Reads 0, 6.

Standard II.

Better eye.	*Worse eye.*
Distant vision.—V = 6 6.	V, without glasses, = not below 6/60; and, after correction with glasses, = not below 6/24.
Near vision.—Reads 0, 6.	Reads 1.

Standard III.

Better eye.	*Worse eye.*
Distant vision. — V, without glasses, = not below 6/24; and, after correction with glasses, = not below 6/6.	V, without glasses, = not below 6/24; and, after correction with glasses, = not below 6/12.
Near vision.—Reads 0, 8.	Reads 1.

Inability to distinguish the principal colours will not be regarded as a cause for rejection, but the fact will be noted in the report, and the candidate will be informed. The degree of acuteness of vision of all candidates for commissions (including preliminary examinations) will be entered in their reports in the following manner:—

Sufficient	Right eye...	V = ...	Reads ......
	Left eye ...	V = ...	Reads ......
Defective	Right eye...	V = ...	Reads ......
	Left eye ...	V = ...	Reads ......

No relaxation of the standard of vision will ever be allowed.

The following additional points will then be observed. (*f*) That his hearing is good. (*g*) That his speech is without impediment. (*h*) That his teeth are in good order. Loss or decay of ten teeth will be considered a disqualification Decayed teeth if well filled will be considered as sound. Non-erupted wisdom teeth will not be counted as deficient. (*i*) That his chest is well formed and that his heart and lungs are sound. (*j*) That he is not ruptured. (*k*) That he does not suffer from varicocele or varicose veins in a severe degree. A candidate who has been successfully operated on will be accepted. A definition of severe varicocele may be obtained from the Director-General Army Medical Service, War Office, Whitehall, S.W. (*l*) That his limbs are well formed and developed. (*m*) That there is free and perfect motion of all the joints. (*n*) That his feet and toes are well formed. (o) That he does not suffer from any inveterate skin disease. (*p*) That he has no congenital malformation or defect. (*q*) That he does not bear traces of previous acute or chronic disease pointing to an impaired constitution. (*r*) If the candidate appears to be not of pure European descent this will be recorded by the board. A candidate will not be permitted to compete oftener than twice.

The Army Council reserves the right of rejecting any candidate who may show a deficiency in his general education.

An entrance fee of £1 is required from each candidate admitted to the examination.

Candidates who have served in the Officers Training Corps will be credited at the entrance examination with additional marks as follows: those having Certificate A will receive 1 per cent., and those having B 2 per cent. of the total. Service marks are also credited to a candidate who has been employed as an officer in consequence of a national emergency, the number of marks depending on the period of employment and the circumstances of the case.

A candidate successful at the entrance examination will be appointed a Lieutenant on probation and will be required to pass through courses of instruction at the Royal Army Medical College, London, and at the Royal Army Medical Corps School of Instruction, Aldershot, and, after passing the examinations in the subjects taught and satisfying the Director-General that he possesses the necessary skill, knowledge, and character for permanent appointment to the Royal Army Medical Corps, his commission as Lieutenant will be confirmed. The commission will bear the date of passing the entrance examination. A Lieutenant who, at the time of passing the examination for admission to the Royal Army Medical Corps, holds, or is about to hold, a resident appointment in a recognised civil hospital, may be seconded for the period, not exceeding one year, of his appointment; he will not receive army pay, but his service will reckon towards pay, promotion, and retirement; he will retain the seniority obtained at the entrance examination.

The precedence of Lieutenants among each other will be in order of merit as determined by the combined results of the entrance examination and the examinations undergone while on probation, except that the position on the list of a lieutenant on probation, seconded to hold a resident appointment in a recognised civil hospital will be determined by the place he has gained at the entrance examination. He will be required, at the conclusion of his hospital appointment, to attend the courses of instruction at the Royal Army Medical College and at Aldershot; but the subsequent examinations will be of a qualifying character and will not influence his position on the seniority list of the Corps.

Lieutenants when appointed on probation will receive instructions as to the provision of uniform.

On completion of his probationary training an officer is posted for duty to one of the military hospitals at home, his wishes being met as far as possible in regard to the command to which he is posted.

EXAMINATIONS.

Subjects for the Entrance Examination.

Candidates will be examined in medicine and surgery by a board of examiners consisting of eight physicians and surgeons appointed from the civil hospitals and medical schools of the United Kingdom. The examination will be of a clinical and practical character, partly written and partly oral, marks being allotted under the following scheme.

	Maximum marks.
Medicine (*written*).	
A. Examination and report upon a medical case	125
B. Commentary upon a case in medicine	100
(Two periods of 45 minutes—total, one and a half hours—for A, and one and a half hours for B.)	
Medicine (*oral*).	
A. Clinical cases	100
B. Medical pathology	75
(Ten minutes to examine case and ten minutes *viva voce*—total, 20 minutes—for A: 30 minutes to examine specimens and ten minutes *viva voce*—total, 40 minutes—for B.)	
Surgery (*written*).	
A. Examination and report upon a surgical case	100
B. Commentary upon a case in surgery	125
(Two periods of 45 minutes—total, one and a half hours—for A, and one and a half hours for B.)	
Surgery (*oral*).	
A. Clinical surgery and pathology (including diseases of the eye)	75
B. Operative surgery and bandaging (including surgical instruments and appliances)	100
(Ten minutes to examine case and ten minutes *viva voce*—total, 20 minutes—for A, and about 30 minutes for B.)	
Total marks	800

The following headings are published as a guide to candidates in drawing up their reports on cases:—(*a*) A brief history of the case as given by the patient, including such points only (if any) in the family or personal history as have a distinct bearing upon the present illness or incapacity. (*b*) A detailed account of the subjective symptoms and physical signs elicited by the candidate's personal examination of the patient, noting the absence of any which might be expected to be present in a similar case. (*c*) Where there is any reasonable doubt in the mind of the candidate as to an exact diagnosis, he is to give the alternatives, with his reasons for making the selection. (*d*) A commentary upon the case as a whole, pointing out the symptoms which may be considered typical, and those which appear to be unusual or only accidental complications. (*e*) Suggestions as to treatment, both immediate and possibly necessary at a later date. (*f*) A forecast of the progress and probable termination of the case.

Similarly the commentary on the report of a case submitted to the candidate should discuss: (*a*) The family and personal history and other conditions preceding the development of the condition described. (*b*) The relative significance of the physical signs, symptoms, other indications of disease noted, and the general clinical aspects of the case. (*c*) The diagnosis, with reasons for selection of the most probable, when a positive diagnosis cannot be attained. (*d*) The treatment, dietetic, medicinal, operative, &c., including a criticism of the plan adopted, and alternative schemes of treatment in case of disagreement. (*e*) The morbid appearances and an account of the post-mortem examination (if any).

The examinations are held at the Royal Army Medical College, London, and occupy about four days.

The appointments announced for the competition are filled up from the list of qualified candidates arranged in the order of merit, as determined by the total number of marks each has obtained. Having gained a place in this entrance examination the successful candidates are ordered to proceed to the Royal Army Medical College, Millbank, S.W., for instruction in recruiting duties, at the termination of which they will undergo two months' instruction in Hygiene, Pathology, Tropical Medicine, Military Surgery, and Military Medical Administration, after which they are examined in these subjects. At the present time the professors at the Royal Army Medical College are Major E. M. Pilcher, D.S.O., F.R C.S , in the department of military surgery; Lieutenant-Colonel O. L. Robinson, in the department of tropical medicine; Major S. L. Cummins, M.D., in the department of pathology; and Lieutenant-Colonel W. W. O. Beveridge, D.S.O., M.D., in that of hygiene, Captain A. C. H. Gray, M.D., and Major P S. Lelean, F.R C.S., being assistant professors. Colonel B. M. Skinner, the commandant and director of studies, instructs in hospital and corps administration, in the duties of officers on transports, and in the examination of recruits, and Lieutenant-Colonel T. W. Gibbard, M.B., lectures on Syphilology. The services of the following staff of clinical teachers have been secured to give courses of instruction to the classes made up of 50 captains that now undergo an annual course for promotion to the rank of major:—Medicine: W. J. Fenton, M.D., F.R.C.P.; A. Latham, M.D., F.R.C.P.; W. Pasteur, M.D., F.R.C.P.; H. B. Shaw, M.D., F.R.C.P., F.R.C.S.; H. W. Wiltshire, M.D. Surgery: H. S. Clogg, M.B., F.R.C.S.; R. Johnson, M.B., F.R.C.S.; T. H. Kellock, M.D., F.R.C.S.; T. P. Legg, M.B., F.R.C.S.; G. R. Turner, F.R.C.S. Midwifery and Gynæcology: J. S. Fairbairn, M.B., F.R.C.S. Dermatology: A. Whitfield, M.D., F.R C.P. Ophthalmology: E. T. Collins, F.R.C.S. Otology, with Laryngology and Rhinology: E. B. Waggett, M.B. Specific Fevers: F. F. Caiger, M.D., F.R C.P. Besides these lecturers an honorary consulting staff has been appointed by the War Office to Queen Alexandra's Military Hospital at Millbank. This staff comprises:—A. E. Barker, F.R.C.S.; Sir A. A. Bowlby, C.M.G., F.R.C.S.; Sir J. K. Fowler, K.C.V.O., M.D.; Surgeon-Lieutenant-Colonel P. J. Freyer, M.D., Indian Medical Service (retired); W. S. A. Griffith, M.D., F.R.C.P.; F. W. Mott, M.D., F.R.C.P., F.R.S.; W. T. H. Spicer, M.B., F.R.C.S.; E. B. Waggett, M.B.; A. Whitfield, M.D., F.R.C P. The course of hygiene has hitherto comprised the examinations of water and air, the general principles of diet with the quality and adulterations of food and beverages, the sanitary requirements of barracks, hospitals, and camps, the consideration of the clothing, duties, and exercises of the soldier, and the circumstances affecting his health, with the best means of preventing disease, both at home and under the conditions of foreign service, also with particular reference to active service in the field. The pathological course has up to the present time included bacteriology and demonstrations in microscopic diagnosis, preparations of vaccines, &c., special attention being given to modern methods of research in the causation of tropical disease. The surgical course consists of lectures and demonstrations in military surgery and X rays and lectures on errors of refraction from a military point of view. On completion of the above course Lieutenants on probation join the Royal Army Medical Corps School of Instruction at Aldershot for a two months' course in the technical duties of the corps, including gymnasium drill and stretcher drill and field training, and at the end of the course are examined in the subjects taught. A Lieutenant on probation who fails to qualify in either of these examinations will be allowed a second trial, and, should he qualify, will be placed at the bottom of the list. Should he again fail in either examination his commission will not be confirmed.

Examinations in the Royal Army Medical Corps.

Lieutenants are required to pass two examinations before their commissions are confirmed; at the termination of the course at the Royal Army Medical College they are examined in military surgery, tropical medicine, hygiene, pathology, and the organisation of military hospitals and the medical charge of troops; after the course at Aldershot, in regimental duties, drill and field training.

Before promotion to captain lieutenants have to pass in (1) map-reading and problems in practical tactics; (2) military law; (3) organisation, administration, and equipment; (4) military medical administration, the duties of executive officers, and the terms of the Geneva Convention; those subjects may be taken up separately and at any time after completing a year's service. The examinations are held locally.

A captain for promotion to major must qualify in the following subjects, the examination not being taken until he has at least five years' service: (1) map-reading and practical tactics; (2) military law; (3) organisation, administration, and equipment; (4) drills and exercises of the Royal Army Medical Corps; (5) medicine; (6) surgery; (7) hygiene; (8) bacteriology and tropical diseases; (9) one special subject from the following: bacteriology and the preparation of antitoxins, dermatology and venereal diseases, midwifery and gynæcology, advanced operative surgery, ophthalmology, otology (including rhinology and laryngology), physical training (including clothing and food of the soldier), State medicine. The examinations in subjects (1) to (4) are held at local centres; the rest of the examination is held after a special course of instruction during nine months. Officers are permitted as far as possible to choose their own special subject. The instruction in hygiene and bacteriology and in the special subjects is given at the Royal Army Medical College and in civil hospitals in London. The examination in subjects (1) to (4) is qualifying only; in the remaining subjects special proficiency qualifies for accelerated promotion and for employment as specialist officer with extra pay.

The examination for promotion to lieutenant-colonel may be taken by a major at any time after three years in that rank, and is held at notified times in the military district where the officer is serving. The subjects are: (1) army medical organisation in peace and war; (2) sanitation of towns, camps, transports, &c., epidemiology, and the management of epidemics; (3) (*a*) medical history of the more important campaigns, and the lessons to be learned therefrom; (*b*) a knowledge of the army medical services of the more important Powers; (*c*) the laws and customs of war so far as they relate to the sick and wounded; (4) a medical staff tour.

Pay and Allowances, Additional Pay, and Charge Pay.

The rates of pay and allowances are shown in tabular form on the following page, the allowance rates varying slightly from time to time. Specialist pay and charge pay are also given under certain conditions.

Additional and Charge Pay.—A captain holding the brevet of major receives an additional 2*s.* per day; an officer under the rank of lieutenant-colonel holding a specialist appointment receives 2*s.* 6*d.* per day. The officer in charge of a hospital, or of a division of a general hospital, receives daily charge pay at the rate of 2*s.* 6*d* for charge of 50 beds, 5*s.* for 100 beds, 7*s.* 6*d* for 200 beds, and 10*s.* for 300 beds. An officer under the substantive rank of colonel, if holding the appointment of senior medical officer in a command abroad, or administrative medical officer, if the troops number 1500 or upwards, receives 5*s.* charge pay. At the Royal Army Medical College the professors receive £200 and the assistant professors £80 a year in addition to pay and allowances of their rank. There are sundry other appointments also carrying extra emolument, such as specialists in operative surgery, charge of laboratories, &c.

Reserve of Officers.

An officer of the Royal Army Medical Corps with at least three, but not more than six, years' service may be permitted to become an Army Reserve Officer for a period of seven years, and while so serving he will receive a retaining fee of £25 a year. With the sanction of the Army Council such officer may be allowed to return to the active list, and if the period he has been in the Reserve of Officers amounts to at least one year, and not more than three years, he shall be allowed to reckon one-third of such period towards promotion, gratuity, and pension.

Seconded Service.

Officers may be permitted to accept employment under the Foreign or Colonial Office, when it is desirable in the interests of the public service. An officer so seconded is not eligible for pay or allowances from army funds, but his service reckons towards promotion, increase of pay, gratuity, and, under certain circumstances, towards pension. The medical service of the Egyptian Army, the sanitary service of the Egyptian Government, and the medical services of various Foreign and Colonial Governments are mentioned as capacities in which Army Medical Officers may be employed.

Officers may also be seconded at entrance into the Corps when holding resident appointments at civil hospitals, as already noted under "Regulations for Admission."

Promotion.

An officer is eligible for promotion to the rank of Captain on the completion of three and a half years' service, and to the rank of Major on the completion of 12 years' total service, provided that in each case he has passed the necessary examination, and is recommended for promotion.

ROYAL ARMY MEDICAL CORPS: RATES OF PAY AND ALLOWANCES.

Rank.	Pay.		Servant allowance.		Lodging allowance.*		Fuel and light allowance.*		Forage and stabling allowances.		Total per annum.
	Per diem.	Per annum.	Per diem.	Per annum.	Per diem.	Per annum.	Per diem.	Per annum.	Per diem.	Per annum.	
	£ s. d.	£ s. d.	s. d.	£ s. d.	s. d.	£ s. d.	s. d. Average.	£ s. d.	s. d. Average.	£ s. d.	£ s. d.
Director-General...	—	2000 0 0	—	—	—	—	—	—	—	—	2000 0 0
Deputy Director-General... ...	—	1500 0 0	—	—	—	—	—	—	—	—	1500 0 0
Assistant Director-General ...	—	850 0 0	—	—	—	—	—	—	—	—	850 0 0
Deputy Assistant Director-General	—	750 0 0	—	—	—	—	—	—	—	—	750 0 0
Lieutenant	0 14 0	255 10 0	1 0	18 5 0	2 3	41 1 3	0 7⅓	11 2 11½	—	—	325 19 2½
Captain	0 15 6	282 17 6	1 0	18 5 0	3 0	54 15 0	0 10⅔	16 4 3	—	—	372 1 9
And after 7 years' full pay service	0 17 0	310 5 0	1 0	18 5 0	3 0	54 15 0	0 10⅔	16 4 3	—	—	399 9 3
And after 10 years' full pay service	1 1 0	383 5 0	1 0	18 5 0	3 0	54 15 0	0 10⅔	16 4 3	—	—	472 9 3
Major	1 3 6	428 17 6	1 0	18 5 0	4 0	73 0 0	1 2⅔	22 5 10	2 3	41 1 3	583 9 7
Major after 3 years' service as such	1 6 0	474 10 0	1 0	18 5 0	4 0	73 0 0	1 2⅔	22 5 10	2 3	41 1 3	629 2 1
Lieutenant-Colonel	1 10 0	547 10 0	1 0	18 5 0	4 6	82 2 6	1 2⅔	22 5 10	2 3	41 1 3	711 4 7
Lieutenant-Colonel after 3 years' service as such... ...	1 15 0	638 15 0	1 0	18 5 0	4 6	82 2 6	1 2⅔	22 5 10	2 3	41 1 3	802 9 7
Colonel	2 5 0	821 5 0	1 0	18 5 0	5 6	100 7 6	1 6⅓	27 17 4	2 3	41 1 3	1008 16 1
Surgeon-General...	3 0 0	1095 0 0	2 0	36 10 0	11 0	200 15 0	2 1	38 0 0	4 3	77 11 3	1447 16 3

* These allowances are not issued when quarters are provided.

Promotion to the rank of Lieutenant-Colonel is made by selection from Majors who have qualified in such manner as may be prescribed by the Army Council.

If an officer has passed with distinction the examination qualifying for promotion to the rank of Major, the 12 years' service required to render him eligible for that rank may be reduced by 18 or 12 months, according to the standard of marks obtained.

Promotion to the rank of Colonel to complete an establishment is made by selection from Lieutenant-Colonels. An officer promoted to the rank of Colonel is placed on half-pay on completing a period of four years' service in such rank. A Lieutenant-Colonel may also be promoted to the rank of Colonel if specially recommended for distinguished service in the field. Promotion to the rank of Surgeon-General is made by selection from Colonels. A Colonel may also be promoted to the rank of Surgeon-General for distinguished service in the field. An officer of the Royal Army Medical Corps is eligible for promotion to brevet rank. A Captain after at least 6 years' service, a Major or Lieutenant-Colonel, may be promoted to the next higher rank by brevet for distinguished service in the field or for meritorious or distinguished service of an exceptional nature other than in the field. If the officer dies before the date on which the notification of his promotion for distinguished service in the field appears in the *London Gazette* the promotion shall bear the date which it would have borne had the officer not died. Distinction in original investigation or research may, in the case of officers of the Royal Army Medical Corps, be regarded as "distinguished service of an exceptional nature other than in the field." An officer who may in the opinion of the Army Council have been prevented, in very special circumstances, from qualifying for promotion, or who, having failed to qualify, may have been debarred from further opportunity of qualifying, may be provisionally promoted. If, however, he fails to qualify on the first available opportunity his promotion shall be cancelled and he shall be retired from the service.

RANK.

The Director-General of the Army Medical Service holds the substantive rank of Surgeon-General and ranks in relation to combatant officers as a Lieutenant-General if recommended by the Army Council. All other Surgeon-Generals rank as Major-Generals in relation to combatant officers. Officers of the Army Medical Service above the rank of Colonel hold the substantive rank of Surgeon-General.

RETIREMENT.

(a) *Voluntary Retirement.*

An officer of the Army Medical Service may be permitted to retire at any time with the approval of the Army Council.

Scale of Retired Pay.

	Yearly. £
Director-General after 3 years' service in the appointment (with 30 years' service)	1125
	Daily. £ s. d.
Surgeon-General	2 0 0
Colonel—	
Under 4 years' service as such, but with 30 years' total service	1 10 0
After 4 years' service as such	1 15 0
If not qualified as above	the rate for a lieutenant-colonel.
Lieutenant-Colonel—	
After 20 years' service	1 0 0
,, 25 ,, ...	1 2 6
,, 28 ,, ...	1 7 6
Major, after 20 years' service	1 0 0
	Gratuity. £
Major or Captain—	
After 5 years' service in the rank of captain	1000
,, 3 ,, ,, major	1800
,, 6 ,, ,, ,, ...	2500

Except in the case of a Colonel, or a Lieutenant-Colonel, an officer who, on voluntary retirement, has served for less than three years in the rank from which he retires, is entitled only to the gratuity or retired pay assigned to the next lower rank.

(b) *Retirement on Account of Age or Limitation of Period of Service.*

The retirement of officers of the Army Medical Service is compulsory at the following ages: Surgeon-General, 60; Colonel, 57; and other officers, 55. A Major shall retire on completion of 25 years' service if he has been superseded for promotion; or, if he fails to qualify for promotion, on completion of 20 years' service. A Captain who fails to pass for promotion may present himself at the next examination; if he again fails he is retired at once on any gratuity for which he may be eligible, or if not so eligible as soon as he completes 5 years' service as Captain. A Lieutenant who does not qualify for promotion within 3½ years of appointment must resign if he fails at the next examination unless there are special circumstances for consideration. Special employment in a national emergency as an officer, or in a position usually filled by an officer, before entry into the corps is reckoned towards retired pay or gratuity.

(c) *Retirement on Account of Medical Unfitness.*

An officer placed on the half-pay list on account of medical unfitness shall, if not previously retired, be retired from the Army at the expiration of five years from the date on which he was placed on the half-pay list, or, if reported by the regulated medical authority to be permanently unfit for duty, on the officer's application, at such earlier date as may be decided by the Army Council.

The scale of retired pay on account of age or medical unfitness is the same as under voluntary retirement, except that the condition of three years' service in the rank is omitted.

Rates for Officers not qualified for Retired Pay or Gratuity on Voluntary Retirement.

If the unfitness was caused by military service retired pay equal to the half pay of his rank. If not so caused, provided the officer has at least 12 years' service, retired pay equal to the half pay of his rank for such period only, not exceeding five years from the date of the officer's retirement from the Army, after five years on half pay under Article 435, as the Army Council shall determine according to the merits of the case.

KING'S HONORARY PHYSICIANS AND HONORARY SURGEONS.

Six of the most meritorious officers of the Army Medical Service on the active list may be appointed Honorary Physicians and six Honorary Surgeons to His Majesty the King. On appointment as Honorary Physician or Honorary Surgeon an officer under the rank of Colonel in the Army Medical Service may be promoted to the brevet rank of Colonel. A Lieutenant-Colonel so appointed receives pay at the rate laid down for a Colonel of the Army Medical Service. An officer shall relinquish the appointment of Honorary Physician or Honorary Surgeon on retirement.

LEAVE OF ABSENCE.

Full pay may be given during ordinary leave of absence for 61 days in each year at home stations; in the Mediterranean, Bermuda, and West Indies leave for two years, and in China, Ceylon, Straits Settlements, and South Africa leave for three years may be accumulated.

SICK LEAVE.

An officer of the Army Medical Service may draw full pay for the undermentioned periods during sick leave granted on the recommendation of a Medical Board, provided there is reasonable probability that he will ultimately be fit to return to duty:—

1. In ordinary cases for a period not exceeding 12 months.
2. In very special cases, such as loss of health due to tropical service or to active operations, the period may be extended, but it shall not exceed 18 months in all.

When a medical officer is absent from duty on account of sickness, up to a period of 30 days, if duly certified by a medical officer, this period shall not be included in the period of absence on leave to which the issue of pay is limited, provided the general officer commanding at the station considers that the circumstances of the case warrant such a concession. Any excess of 30 days will be included.

When an officer has exhausted the periods of sick leave permissible, as above mentioned, and is still unfit, he is placed on half-pay for a period not exceeding five years, and under certain conditions as to the causation of his illness is eligible for the following daily rates: Surgeon-General, £2; Colonel, £1 9*s*. 6*d*.; Lieutenant-Colonel, £1, with three years' service as such, £1 7*s*. 6*d*.; Major, Captain, or Lieutenant, under five years' service, 6*s*.; after five years, 8*s*.; after 10 years, 10*s*.; after 15 years, 13*s*. 6*d*.

SERVICE ABROAD.

When an officer's turn arrives for foreign service he is duly warned some months beforehand, and as far as service exigencies permit his wishes for any particular station abroad are complied with. A Lieutenant is usually sent abroad during the second year of his service. The tour of foreign service is 5 years for India, the Mediterranean, and South Africa, and 3 years for other stations.

SERVICE ON THE WEST COAST OF AFRICA.

An officer volunteering for, or ordered to, the West Coast of Africa receives double pay while actually serving on the coast, and for any time spent at Madeira or the Canary Islands on sick leave, or on ordinary leave not exceeding 61 days in a year.

A medical officer after 12 months' continuous service on the West Coast is entitled to full pay during leave at home for one day for every two days served on the coast.

Each year or portion of a year served on the West Coast of Africa by an officer of the Royal Army Medical Corps shall reckon double towards voluntary retirement or retired pay, provided that either (*a*) he has served 12 months on the coast; or (*b*) his tour has been terminated, in the public interests, before 12 months are completed. In ordinary cases the 12 months may be made up of two separate periods of not less than six months each; and if an officer leaves the coast on account of sickness he may reckon any period of service on the coast, however short, in order to make up the 12 months' coast service which is required to entitle him to count his service double. Except when the officer has been invalided, no period of less than six months' of service on the coast shall reckon double under this article, or count towards the required period of 12 months.

WIDOWS' PENSIONS.

Widows' pensions and compassionate allowances for children of deceased officers are given under certain conditions specified in the Royal Warrant for Pay and Promotion. There is also an Army Medical Officers' Widows' and Orphans' Fund on mutual assurance principles.

PAY IN INDIA.

There has been an improvement of late years in the pay and conditions of service of army medical officers in India, as elsewhere. The pay and allowances (which are combined in India) of a lieutenant are 420 rupees per mensem; for captain's rank, the pay and allowances are from 475 rupees to 530 rupees after seven, and to 650 rupees after ten years' service. Majors receive 789 rupees on promotion and 826 rupees after 15 years' service. Lieutenant-Colonels, 1150 rupees; after three years 1250 rupees. In addition, charge pay is given, ranging from 60 to 240 rupees according to the number of beds equipped in a hospital. Specialist pay, 60 rupees monthly. There are also various appointments, cantonment hospitals, &c., carrying extra pay, that are shared between the Royal Army Medical Corps and the Indian Medical Service. The value of the rupee is fixed at 1*s*. 4*d*.

INDIAN MEDICAL SERVICE.

The grades of officers in the Indian Medical Service are the same as those of the Army Medical Service and Royal Army Medical Corps. The Director-General will rank either as Major-General or Lieutenant-General as may be decided in each case by the Secretary of State for India in Council.

REGULATIONS FOR THE EXAMINATION OF CANDIDATES FOR ADMISSION TO THE INDIAN MEDICAL SERVICE.

Candidates must be natural born subjects of His Majesty, of European or East Indian descent, of sound bodily health, and in the opinion of the Secretary of State for India in Council in all respects suitable to hold commissions in the Indian Medical Service. They may be married or unmarried. They must possess under the Medical Acts a qualification registrable in Great Britain and Ireland. No candidate will be permitted to compete more than three times. Examinations for admission to the service are held twice in the year, usually in January and July. Candidates for the January examination must be between 21 and 28 years of age on Feb. 1st, and those for the July examination must be between 21 and 28 on August 1st. The exact date of each examination and the number of appointments, together with the latest date at which applications will be received, will be notified in THE LANCET.

They must subscribe and send in to the Military Secretary, India Office, London, S.W., *so as to reach that address by the date fixed in the advertisement of the examination*, a declaration according to the annexed form, which is procurable from the Military Secretary.

Declaration and Schedule of Qualifications to be Filled up by Candidates.

I, ..., a candidate for employment in His Majesty's Indian Medical Service, do hereby attest my readiness to engage for that service, and to proceed on duty immediately on being gazetted.

I declare that I labour under no mental or constitutional disease, nor any imperfection or disability that can interfere with the most efficient discharge of the duties of a medical officer.

I hereby declare upon my honour that the above statements are true to the best of my knowledge and belief.

I inclose, in accordance with Paragraph 4 of the Regulations, (*a*) proof of age; (*b*) two certificates of character; (*c*) certificate of having attended a course of ophthalmic instruction, showing that the course included instruction in errors of refraction; (*d*) evidence of a registrable qualification; (*e*) *in case of natives of India or others educated in that country only*, a certificate from the Director-General, Indian Medical Service.

Signature ....

Date ...., 19 .

1. Name in full.
2. Address. (*Any alteration to be notified to the Military Secretary, India Office, London, S.W.*)
3. Date of birth. (*This must be supported by a certificate or statutory declaration.* See *Paragraph 4 of the Regulations.*)
4. Profession or occupation of father, and whether, at the time of candidate's birth, his father was a British subject of European or East Indian descent.
5. Statement as to whether the candidate is married or single.
6. Colleges and Medical Schools at which the candidate has received his medical education.
7. Medical School in which the candidate completed his course as a medical student, and name of the Dean or other responsible authority.
8. Degrees of B.A. or M.A.; details as to any prizes, university honours, &c.
9. Registrable qualifications.
10. Date of examination at which the candidate proposes to present himself.
11. Date of any previous occasions on which the candidate may have presented himself for examination for admission to the Indian Medical Service, or other examination for the Public Services.
12. Particulars of any commission or appointment held in the Public Services.

The declaration must be accompanied by the following documents:—*a. Proof of age* either by Registrar-General's certificate, or, where such certificate is unattainable, by the candidate's own statutory declaration, form for which can be obtained at the India Office, supported, if required by the Secretary of State, by such evidence as he may consider satisfactory. A certificate of baptism which does not afford proof of age will be useless. In the case of natives of India and Tamils of Ceylon it will be necessary for a candidate to obtain a certificate of age and nationality in the form laid down by the Government of India which is obtainable from the Director-General of the Indian Medical Service, Simla. A candidate of East Indian descent, not born in British India, must produce a certificate of age and nationality from the Government of the country where he was born, showing that he is the son or grandson of a person born in British India. *b.* A recommendation and certificate of moral character from two responsible persons—not members of his own family—to the effect that he is of regular and steady habits and likely in every respect to prove creditable to the service if admitted. *c.* A certificate of having attended a course of instruction for not less than three months at an ophthalmic hospital or the ophthalmic department of a general hospital, which course shall include instruction in the errors of refraction. *d.* Some evidence of having obtained a registrable qualification. *e.* Any European educated in India and every native of that country, whether born or medically educated in India or not, will be required to produce a certificate signed by the Director-General, Indian Medical Service, that he is a suitable person to hold a commission in the Indian Medical Service. A candidate should apply to the Director-General, Indian Medical Service, for the necessary certificate at least three months before the date on which the declaration is to be submitted according to the advertisement of the examination. This rule also applies to Tamils of Ceylon.

The Secretary of State for India reserves the right of deciding whether the candidate may be allowed to compete for a commission in His Majesty's Indian Medical Service.

The physical fitness of each candidate will be determined by a Board of Medical Officers who are required to certify that his vision is sufficiently good to enable him to pass the regulation tests (see under Army Medical Service). Every candidate must also be free from all organic disease and from constitutional weakness or other disability likely to unfit him for military service in India. Candidates will be required to pay a fee of £1 before being examined by the Medical Board. No candidate will be permitted to compete more than three times. More detailed regulations as to the physical requirements can be obtained on application to the India Office.

Candidates for the Indian Medical Service may, if they like, undergo a preliminary examination by the Medical Board which meets at the India Office every Tuesday by applying to the Under Secretary of State, India Office, inclosing a fee of two guineas, and stating the particular appointment which the candidate desires to obtain. They must pay their own travelling expenses. The decision must be understood, however, not to be final. It may be reversed in either direction by the Examining Medical Board immediately prior to the Professional Examination.

On proving possession of the foregoing qualifications the candidate will be examined by the Examining Board in the following subjects and the highest number of marks attainable will be distributed as follows:—

	Marks.
1. Medicine, including therapeutics...	1200
2. Surgery, including diseases of the eye	1200
3. Applied anatomy and physiology...	600
4. Pathology and bacteriology	900
5. Midwifery and diseases of women and children	600
6. Materia medica, pharmacology, and toxicology	600

N.B.—The examination in medicine and surgery will be in part practical and will include operations on the dead body, the application of surgical apparatus, and the examination of medical and surgical patients at the bedside. No syllabus is issued in the subjects of the examination, but it will be conducted so as to test the general knowledge of the candidate in all subjects. No candidate shall be considered eligible who shall not have obtained at least *one third* of the marks obtainable in each of the above subjects and *one half* of the aggregate marks for all the subjects.

After passing this examination the successful candidates will be commissioned as lieutenants-on-probation, and will be granted about a month's leave. They will then be required to attend two successive courses of two months each at the Royal Army Medical College, Millbank, and at Aldershot. The candidate's commission as a lieutenant-on-probation will bear the date on which the result of the entrance examination is announced, but his rank as lieutenant will not be confirmed until he has passed the final examination, held at the conclusion of his period of instruction.

The course at the Royal Army Medical College will be in (1) hygiene, (2) military and tropical medicine, (3) military surgery, (4) pathology of diseases and injuries incidental to military and tropical service; and (5) military medical administration.

The course at Aldershot will include instruction in (1) internal economy, (2) Army Service Corps subjects, (3) hospital administration, (4) stretcher and ambulance drill, and (5) equitation.

Lieutenants-on-probation will receive an allowance of 14*s.* per diem, and during the period of instruction they will be provided with quarters (where quarters are not provided they will obtain the usual allowances of a subaltern in lieu thereof), to cover all costs of maintenance, and they will be required to provide themselves with uniform; a detailed list of the uniform and articles required will be sent to each successful candidate.

A lieutenant-on-probation who is granted sick leave before the completion of his course of instruction and final admission to the service will receive pay at the rate of 10*s.* 6*d.* a day for the period of his sick leave.

Candidates will be required to conform to such rules of discipline as may from time to time be laid down.

At the conclusion of each course the candidate will be required to pass an examination on the subjects taught, and in order to qualify must obtain 50 per cent. of the total marks. If he fails to qualify in either of these examinations he will be liable to removal from the service, but if specially recommended he may be allowed to undergo the course or courses again under certain restrictions as to pay and position.

Officers appointed to the Indian Medical Service will be placed on one list, their position on it being determined by the combined results of the preliminary and final examinations. They will be liable for military employment in any part of India, but in view to future transfers to civil employment, they will stand posted to one of the following civil areas:—(1) Madras and Burma; (2) Bombay with Aden; (3) Upper Provinces—i.e., United Provinces, Punjab, and Central Provinces; and (4) Lower Provinces—i.e., Bengal, Bihar, Orissa, and Assam. The allocation of officers to these areas of employment will be determined upon a consideration of all the circumstances, including, as far as possible, the candidate's own wishes. Officers trsnsferred to civil employment, though ordinarily employed within the area to which they may have been assigned, will remain liable to employment elsewhere according to the exigencies of the service.

A lieutenant who, within a reasonable period before the date at which he would otherwise sail for India, furnishes proof of his election to a resident appointment (or to a preliminary appointment leading in due course to a resident one) at a recognised civil hospital, may be seconded for a period not exceeding one year from the date on which he takes up such appointment, provided that he joins it within three months of passing his final examination, and that he holds himself in readiness to sail for India within 14 days of the termination of the appointment. While seconded he will receive no pay from Indian funds, but his service towards promotion, increase of pay, and pension will reckon from the date borne on his commission. In special cases permission may be granted to lieutenants to delay their departure for India, in order to sit for some further medical examination. Lieutenants remaining in England under such circumstances will receive no pay for any period beyond two months from the date of termination of the course of instruction, unless the period elapsing before the day on which the majority of the lieutenants of the same seniority sail to India exceeds two months, in which case lieutenants allowed to remain in England will receive pay up to that day. In such cases pay will re-commence on the day of embarkation for India. All the provisions of this clause are subject to the general exigencies of the service. Before the commission of a lieutenant-on-probation is confirmed he must be registered under the Medical Acts in force at the time of his appointment. Candidates who have been specially employed in consequence of a national emergency, either as an officer, or in a position usually filled by an officer, will be allowed, under certain circumstances, to reckon such service towards pension.

Officers on appointment are, when possible, provided with passage to India by troop transport; when such accommodation is not available passage at the public expense is provided by steamer, or a passage allowance granted if preferred. Wives of married officers are entitled to passage by troop transport, if available. Any officer who may neglect or refuse to proceed to India under the orders of the Secretary of State for India within two months from the date of terminating his course of instruction, or within 14 days of the termination of his hospital appointment if the Secretary of State has permitted him to hold one, will be considered as having forfeited his commission unless special circumstances shall justify a departure from this regulation.

A course of instruction in sanitary methods, rules, and regulations as carried out in Indian cantonments has recently been instituted for young officers of the Indian Medical Service and the Royal Army Medical Corps on first arrival in the country. The nature of the diseases to be combated, the social and religious customs and prejudices of the various races, and the limited resources of money and material make large modifications from European methods necessary. Lieutenants of both services are now posted on arrival either to Rawal Pindi, Poona, Lucknow, or Bangalore for one month for this course, which is carried out under the supervision of the senior medical officer and sanitary officer. The instructors are medical officers nominated by the principal medical officer, India, and demonstrations on various subjects are given by other officers, staff, engineer, and medical. The course consists of demonstrations and inspections in all parts of the lines of British and Indian troops, bazaars, Government dairies, bakeries, slaughter-houses, trade premises of dairymen, bakers, butchers, and aerated water manufacturers and dhobies' houses, market and water-supplies, methods of washing clothes, surface drainage, removal and disposal of sewage and refuse, antimalarial measures, disinfection, cantonment hospitals, control of venereal diseases, plague prevention, methods of hospital administration, &c. The officers under instruction thus have an opportunity of learning something of native customs and are encouraged to learn the vernacular, so as to be less dependent upon their subordinates when first put in responsible positions.

Promotion.

A Lieutenant is promoted to the rank of Captain on completing three years' full-pay service from the date of first commission, provided he passes an examination in military law and military medical organisation. An officer will not be permitted to remain in the service if at any time during the first three years his retention therein is considered undesirable. Captains are promoted to the rank of Major after nine years' full-pay service in the rank of Captain, if in all respects qualified and recommended; this promotion may be accelerated by six months in the case of officers who fulfil certain specified conditions. A Major is promoted to Lieutenant-Colonel on completion of eight years' full-pay service in the rank of Major if in all respects qualified and recommended. All promotions to higher grades are given by selection for ability and merit. In case of distinguished service a medical officer may receive special promotion. The ages for compulsory retirement are 55 for Lieutenant-Colonel and Major, 60 for Surgeon-General and Colonel, and 62 for the Director-General. In special cases an officer may be continued in employment. for the good of the service, with the sanction of the Secretary of State.

Leave Rules.

Officers of the Indian Medical Service below the rank of Colonel may be granted: 1. Privilege leave under such regulations as may from time to time be in force. 2. Leave out of India for no longer period than one year, capable of extension to two years' absence from duty, on the following pay for officers in military employment (officers in civil employment are entitled to higher rates): After arrival in India, on first appointment, £250 a year; after the commencement of the tenth year's service for pension, £300 a year; after the commencement of the fifteenth year's service for pension, £450 a year; after the commencement of the twentieth year's service for pension, £600 a year; and after the commencement of the twenty-fifth year's service for pension, £700 a year. 3. Leave in India, but for the period of one year only, on full military pay and half the staff pay of appointment. No extension of leave involving absence from duty for more than two years, whether taken in or out of India, can be granted except on specially urgent grounds and without pay. An officer unable on account of the state of his health to return to duty within the maximum period of two years' absence, unless he is specially granted an extension of leave without pay, is placed on temporary half-pay or the retired list, as the circumstances of the case may require. An officer is also liable to be placed on half-pay or the retired list should his health require an undue amount of leave, whether in or out of India. Leave may be granted at any time. but solely at the discretion of the civil or military authorities in India under whom an officer may be serving. Officers of the Administrative grades may be granted leave not exceeding eight months, besides privilege leave, during their tenure of appointment. Extra leave (known as study leave) may be granted to officers desirous of pursuing special courses of study at the rate of one month's leave for each year's service up to 12 months in all. The Secretary of State has decided, however (November, 1913), that the two years' limit of leave is to include study leave. An officer on leave is required to join at once on being recalled to duty unless certified by a medical board as unfit to do so.

Pay and Allowances.

The rate of pay drawn by Lieutenants of the Indian Medical Service previous to arrival in India is 14*s.* a day, but a Lieutenant (1) who has been permitted by the Secretary of State to hold a hospital appointment will receive no pay while holding it; (2) who is detained by illness in this country will be paid at the rate of £250 a year from the date on which he would otherwise have embarked until the date of embarkation, and at the rate of 14*s.* a day during the voyage to India.

Pay at the above rate is issued in this country up to the date of embarkation, and an advance of two months' pay at the same rate is also made prior to embarkation, which is adjusted in India.

The following are the monthly rates of Indian pay drawn by officers of the Indian Medical Service from the date of their arrival in India (N.B.—1 rupee = 1*s.* 4*d.*):—

Rank.	Unemployed pay.	Grade pay.	Staff pay.	In officiating medical charge of a regiment.	In permanent medical charge of a regiment.
	Rs.	Rs.	Rs.	Rs.	Rs.
Lieutenant	420	350	150	425	500
Captain	475	400	150	475	550
,, after 5 years' service ...	475	450	150	525	600
,, after 7 years' service ...	—	500	150	575	650
,, after 10 years' service ...	—	550	150	625	700
Major	—	650	150	725	800
,, after 3 years' service as Major	—	750	150	825	900
Lieutenant-Colonel	—	900	350	1075	1250
,, ,, after 25 years' service ...	—	900	400	1100	1300
,, ,, specially selected for increased pay	—	1000	400	1200	1400

Notes.—(*a*) An officer, in officiating charge of a regiment, who has passed in Hindustani (lower standard) draws grade pay *plus* half staff pay, the latter being Rs. 100 at the least

(b) Unemployed pay is drawn by officers of less than seven years' service who are not holding any specific appointment, also when holding officiating or substantive charge of native regiments unless they have passed the examination in Hindustani known as the "Lower Standard." Officers of more than seven years' service draw grade pay alone when unemployed. Staff pay is the pay of certain special appointments and is drawn in addition to grade pay.

(c) Horse allowance is granted to officers in charge of cavalry regiments at the rate of Rs. 90 a month to Lieutenant-Colonels and Majors, and Rs. 60 a month Captains and Lieutenants.

Exchange compensation.—Under present arrangements, officers of the Indian Medical Service who are not statutory natives of India receive exchange compensation allowance to compensate them for the fall of the value of the rupee. The allowance consists of an addition to their salaries (subject to certain limitations) equal to half the difference between their salaries converted at (1) 1*s.* 6*d.* the rupee, and (2) the standard Government rate, which has been fixed at 1*s.* 4*d.* the rupee until further notice.

No officer, however employed, can draw more than the grade pay of his rank until he has passed the "Lower Standard."

Officers holding the principal administrative appointments of the Indian Medical Service receive the following consolidated salaries:—

	Rs. per mensem.
Colonel, 16 (some in civil employ) from	1800 to 2500
Surgeon-General, 1 @	2200
,, 2 @	2500
,, (the Director-General I.M.S.) 1 @	3000

Specialist pay at the rate of Rs. 60 a month is granted to officers below the rank of Lieutenant-Colonel who may be appointed to certain posts. These are 50 in number, in the subjects of (*a*) prevention of disease, with charge of laboratory, (*b*) advanced operative surgery, (*c*) ophthalmology, (*d*) skiagraphy, (*e*) midwifery and diseases of women and children, (*f*) mental diseases, and (*g*) otology, laryngology, and rhinology.

Except in the administrative grades and in certain special appointments officers are not debarred from taking private practice as long as it does not interfere with their proper duties.

POSTS IN CIVIL EMPLOY.

A large number of posts in civil employ are ordinarily filled up from officers of the Indian Medical Service. Officers are required to perform two years' regimental duty in India before they can be considered eligible for civil employment, and will, on transfer to civil employment, be placed on probation for two years. The principal appointments, together with the salaries attached to each, are stated in the above table.

Description of appointment.	Approximate number of appointments in each class.	Salary per mensem.			
		When held by a Lieutenant-Colonel.	When held by a Major.	When held by a Captain.	When held by a Lieutenant.
		Rs.	Rs.	Rs.	Rs.
Sanitary Commissioner with Government of India	1	2000–2500*	—	—	—
Inspectors-General of Prisons	8	1500–2000	—	—	—
Principals of Medical Colleges	2	1650–1800	1200–1300	—	—
Professorial Appointments	32	1500–1650	1050–1150	800–950	750
Sanitary Commissioners ...	8	1250–1800†	—	—	—
Deputy Sanitary Commissioners...	13	1450–1600	1000–1100	750–900	700
Bacteriological Appointments	11	1500–1600	1050–1150	700–900	650
Superintendents of Central Lunatic Asylums	6	1400–1550	1050–1150	700–900	650
Superintendents of Central Jails	31	1300–1550	850–1050	600–850	550–650
Civil Surgeoncies (First Class)	37	1300–1450	850–950	600–750	550
Civil Surgeoncies (Second Class)	171	1200–1350	750–850	500–650	450
Probationary Chemical Examiner	1	—	—	600–750	550
Officers deputed to plague duty	—	1450	1000–1100	750–900	700

* Irrespective of rank. † For all ranks.

An allowance of Rs. 100 per mensem is also granted, in addition, to the chief plague medical officers in certain provinces.

There are also six Chemical Examiners with Rs. 800–1650 per mensem and a number of Port Health Officers with Rs. 750–1950 per mensem. Other appointments of Resident Surgeons and Physicians at hospitals, &c., are on salaries ranging from Rs. 700 to 1650 per mensem. There are also a certain number of appointments under the Political Department on salaries ranging from Rs. 450 to 1450 per mensem, exclusive of local allowances.

TENURE OF OFFICE IN ADMINISTRATIVE GRADES.

The tenure of office of Surgeon-Generals and Colonels is limited to five years. Colonels, if not disqualified by age, are eligible either for employment for a second tour of duty in the same grade or for employment in the higher grade of Surgeon-General by promotion thereto.

Absence on leave in excess of eight months (exclusive of privilege leave) during a five years' tour of duty involves forfeiture of appointment.

Surgeon-Generals and Colonels, on vacating office at the expiration of the five years' tour of duty, are permitted to draw *in India* an unemployed salary of Rs. 1350 per mensem in the former, and Rs. 1000 in the latter case, for a period of six months from the date of their vacating office, after which they are placed while unemployed on the following scale of pay:—

—	Surgeon-General. Per diem.	Colonel. Per diem.
	£ *s.* *d.*	£ *s.* *d.*
After 30 years' service on full pay	2 5 0	1 14 0
,, 25 ,, ,, ,, ...	2 5 0	1 10 0
,, 20 ,, ,, ,, or on promotion, should this period of service not be completed...	2 0 0	1 8 0

A Surgeon-General or Colonel who has completed his term of service and has reverted to British pay may reside in Europe, at the same time qualifying for higher pension.

RETIRING PENSIONS AND HALF-PAY.

Officers of the Indian Medical Service will be allowed to retire on the following scale of pension on completion of the required periods of service:—

After 30 years' service for pension...	£700 per annum + £350 after three years' active employment in India as a Surgeon-General, or + £250 per annum after five years' active employment as a Colonel, or £125 after three years as a Colonel. Eight months' absence on leave (besides privilege leave) is allowed to count towards actual service in those grades.
,, 27½ ,, ,, ,,	£600 per annum.
,, 25 ,, ,, ,,	£500 ,,
,, 20 ,, ,, ,,	£400 ,,
,, 17 ,, ,, ,,	£300 ,,

Service for pension counts from date of first commission and includes all leave taken under the leave rules.

Time (not exceeding one year) passed on temporary half-pay reckons as service for promotion and pension, in the case of an officer placed on half-pay on account of medical unfitness caused by duty, military or civil.

Officers of the Indian Medical Service are liable after retirement on pension before completing 30 years' service to recall to military duty in case of any great emergency arising up to 55 years of age.

All officers of the rank of Lieutenant-Colonel and Major are placed on the retired list at the age of 55, and all Surgeons-General and Colonels at the age of 60, but the Director-General is allowed to serve until he has attained the age of 62 years. In any special case, where it would appear to be for the good of the Service that an officer should continue in employment, he may be so continued, subject in each case to the sanction of the Secretary of State for India in Council.

Officers placed on temporary or permanent half-pay are granted half-pay at the following rates.

—	Rates of Half-pay.*	
	Per diem.	Per annum.
	£ *s.* *d.*	£ *s.* *d.*
Under 5 years' service	0 6 0	109 10 0
After 5 ,, ...	0 8 0	146 0 0
,, 10 ,, ...	0 10 0	182 10 0
,, 15 ,, ...	0 13 6	246 7 6
Lieutenant-Colonel, under 3 years' service as such	1 0 0	365 0 0
Lieutenant-Colonel, over 3 years' service as such	1 7 6	501 17 6

* Officers cannot retire *in India* on half-pay.

An officer of less than three years' service, although he may be transferred to the half-pay list under the general conditions of transfer, will not be granted any half-pay unless his unfitness has been caused by service.

INVALID PENSIONS.

An officer who has become incapacitated for further service in India on account of unfitness caused by duty may be granted an Invalid Pension on the following scale:—

	Per annum.
After 16 years' pension service	£272
,, 15 ,, ,, ,, ...	252
,, 14 ,, ,, ,, ...	232
,, 13 ,, ,, ,, ...	212
,, 12 ,, ,, ,, ...	192

WOUND PENSIONS.

Officers are entitled to the same allowances on account of wounds received in action and injuries sustained through the performance of military duty as are granted to combatant officers of His Majesty's Indian Military Forces holding the corresponding military rank.

FAMILY PENSIONS.

The claims to pension of widows and families of officers are treated under the provisions of such Royal Warrant regulating the grant of pensions to the widows and families of British officers as may be in force at the time being.

The widows and families of officers are also entitled to pensions under the Indian Service Family Pension Regulations, for the benefits of which all officers must, as a condition of their appointment, subscribe from the date of their arrival in India, except in the case of natives of India, for whom it is optional.

HONOURS AND REWARDS.

Officers of the Indian Medical Service are eligible for the military distinction of the Order of the Bath and for other Orders, British and Indian, and for good service pensions. Six of the most meritorious officers are named Honorary Physicians and six are named Honorary Surgeons to His Majesty.

PROSPECTS IN THE TWO MILITARY SERVICES.

The Royal Army Medical Corps is at the present time, we believe, on the whole, a thoroughly contented service, although for some time back there has been a feeling of uneasiness and uncertainty, more especially in the senior ranks, as to their future prospects by the adoption of a system of promotion by so-called selection. It is felt that the spirit of the Royal Warrant for promotion has been departed from, thereby causing a block in promotion affecting all ranks. The limitation of the tenure of the colonel's appointments to four years has caused heartburnings in this grade, as after this period, unless promoted, men are now placed on half-pay. Again, the reduction of the cadre establishment of lieutenant-colonels has adversely affected a large number of majors who are well worthy of promotion to the next rank; and it is felt that the rules recently introduced allowing of accelerated promotion from the rank of captain to major have not worked as fairly as it was intended they should have.

The improvements that were introduced by Sir Alfred Keogh, K.C.B., when Director-General, have, however, been so substantial, both as regards emolument and as affecting the professional and military status of medical officers, that it would be ungracious to refrain from acknowledging the generous spirit that has actuated the War Department authorities in their attitude to the medical service. We feel sure that the good results of this are being, and will continue to be, manifested in an improvement in the health and efficiency of the army at large.

In the Indian Medical Service the recent introduction of the increased pension (£600 per annum) after 27½ years' service has been an important concession; there is still, however, a block in promotion; administrative rank, which used to come after 26 or 27 years', being now generally deferred until over 30 years' service. Limitation of the period of service in administrative rank, as recently adopted in the Royal Army Medical Corps in the case of the colonel's grade, would probably be an improvement. The neglect of the rule that the office of principal medical officer to His Majesty's forces in India may be held by an officer of the Indian Medical Service is still felt to be a grievance. A commission, under the chairmanship of Lord Nicholson, has been inquiring into the military branch of the service, but no report, as far as we know, has been made public up to the present. In the sanitary department the appointments of deputy sanitary commissioner are now not confined to officers of the Indian Medical Service, who are *pro tanto* losers by the change. There are also difficulties in the way of obtaining leave home, though in theory the leave rules are liberal enough. There is at the present time considerable discontent and a feeling of unrest throughout the medical service of the Indian Government. This has been largely due, we believe, to the (in our opinion) most unfortunate dispatch of Lord Morley in 1908, in which it was stated that "the time had arrived when no further increase in the civil side [of the I.M.S.] could be allowed, and a strong effort should be made to reduce it by gradually extending the employment of civil medical practitioners recruited in India." As a consequence many appointments formerly held by the Indian Medical Service are now held by medical practitioners outside that service. It is an undoubted fact that competition for the Indian Medical Service has within the last few years become less and less keen. The proportionate number of European candidates has decreased, and the number of native Indian gentlemen appointed to commissions increased. The service is certainly not so popular with the medical schools of this country as was formerly the case. On the whole it can certainly be said that the Indian Service at the present time does not offer the advantages over the Royal Army Medical Corps, either professional or pecuniary, that it formerly possessed, while changes are foreshadowed that make it inevitable that the status, prospects, and influence of the Indian Medical Service may be affected injuriously. The difficulties met with in attempting to carry the proposed reforms into practice appear to have been much more considerable than was expected by the highest authorities, though neither unknown to, nor ignored by, those having local experience.

PUBLIC HEALTH DIPLOMAS.

INSTRUCTION FOR DIPLOMAS IN SANITARY SCIENCE, PUBLIC HEALTH, STATE MEDICINE, AND TROPICAL MEDICINE.

RESOLUTIONS, designed with a view of ensuring "the possession of a distinctively high proficiency, scientific and practical, in all the branches of study which concern the public health," have been adopted at various times by the General Medical Council from 1902 to 1911.

Rules of the General Medical Council.—The rules require that:

1. The curriculum for a Diploma in Sanitary Science, Public Health, or State Medicine shall extend over a period of not less than nine calendar months.

2. Every candidate shall produce evidence that after obtaining a registrable qualification, which should be registered before admission to examination for the Diploma, he has received practical instruction in a laboratory or laboratories, British or foreign, approved by the licensing body granting the diploma, in which chemistry, bacteriology, and the pathology of diseases of animals transmissible to man are taught. (The laboratory instruction shall cover a period of not less than four calendar months, and the candidate shall produce evidence that he has worked in the laboratory for at least 240 hours, of which not more than one-half shall be devoted to Practical Chemistry. The laboratory course should be so arranged as to lay special stress on work which bears most directly on the duties of a medical officer of health.)

3. Every candidate shall produce evidence *either* (1) that, after obtaining a registrable qualification, he has during six months been diligently engaged in acquiring a practical knowledge of the duties, routine and special, of Public Health administration under the supervision of: (*a*) in England and Wales, the medical officer of health of a county or of a single or combined sanitary district having a population of not less than 50,000, or a medical officer of health devoting his whole time to Public Health work; or (*b*) in Scotland, a medical officer of health of a county or counties, or of one or more districts having a population of not less than 30,000; or (*c*) in Ireland, a medical superintendent officer of health of a district or districts having a population of not less than 30,000; or (*d*) in the British Dominions outside the United Kingdom, a medical officer of health of a sanitary district having a population of not less than 30,000, who himself holds a registrable Diploma in Public Health; or (*e*) a medical officer of health who is also a teacher in the Department of Public Health of a recognised Medical School; or (*f*) a sanitary staff officer of the Royal Army Medical Corps having charge of an Army Corps, District, Command, or Division, recognised for this purpose by the General Medical Council; or (*g*) an assistant medical officer of health of a county or of a single sanitary district having a population of not less than 50,000, provided the medical officer of health of the county or district in question permits the assistant officer to give the necessary instruction and to issue certificates; *or* (2) that he has himself held for a period of not less than three years an appointment as medical officer of health of a sanitary district within the British Dominions, and having a population of not less than 15,000.

The certificate for the purpose of Rule 3 (1) must include testimony that the candidate has attended under the supervision of the person certifying on not less than 60 working days. Provided that if the candidate has (i.) produced satisfactory evidence that he has attended a course or courses of instruction in sanitary law, vital statistics, epidemiology, school hygiene, and other subjects bearing on public health administration, given by a teacher or teachers in the department of public health of a recognised medical school; or (ii.) produced evidence that he has been a resident medical officer in a hospital for infectious diseases containing not less than 100 beds during a period of three months,—the period during which he has been engaged in acquiring practical knowledge of his duties under this rule may be reduced to three months, to include an attendance on at least 30 working days.

4. Every candidate shall produce evidence that after having obtained a registrable qualification he has during three months attended at least twice weekly the practice of a hospital for infectious diseases at which he has received instruction in the methods of administration. (Methods of administration shall include the methods of dealing with patients at their admission and discharge, as well as in the wards, and the medical superintendence of the hospital generally. In the case of a medical officer of the Royal Army Medical Corps a certificate from a principal medical officer under whom he has served, stating that he has during a period of at least three months been diligently engaged in acquiring a practical knowledge of hospital administration in relation to infectious diseases, may be accepted as evidence under Rule 4.)

5. The examination shall be conducted by examiners specially qualified; it shall have extended over not less than four days, one of which shall have been devoted to practical work in a laboratory, and one to practical examination in, and reporting on, subjects which fall within the duties of a medical officer of health, including those of a school medical officer.

The regulations in question as to study may be procured at the office of the General Medical Council in London.

University of Oxford.—An examination, conducted partly in writing, partly *vivâ voce*, and in each subject partly practical, is held in Michaelmas and Easter Terms in the following subjects:—General Hygiene, General Pathology (with special relation to Infectious Diseases), the Laws relating to Public Health, Sanitary Engineering, Vital Statistics. The examination is in two parts, which may be taken together or separately; but Part I. must be passed either before or at the same examination as Part II. The fee for admission to the examination is £5 for each part. Successful candidates are entitled to receive the Diploma in Public Health. Any person whose name is on the Medical Register is admissible as a candidate for this examination provided (1) a period of not less than twelve months shall have elapsed between the attainment of registrable qualification and the time when he presents himself for either part of the examination; (2) he produce evidence of having, after obtaining a registrable qualification, attended during three months the practice of a hospital for infectious diseases at which opportunities are afforded for the study of methods of administration; (3) he produce evidence of having, after obtaining a registrable qualification, attended during a period of six months on one or more courses, approved by the Syndicate, of practical laboratory instruction in Chemistry, Bacteriology, and the Pathology of those diseases of animals that are transmissible to man; and (4) he produce evidence of having, after obtaining a registrable qualification, for six months (of which at least three months shall be distinct and separate from the period of laboratory instruction) been associated day by day in the duty, routine and special, of public health administration under the supervision of: (*a*) in England and Wales either the medical officer of health of a county or of a single sanitary district having a population of not less than 50,000 or a medical officer of health devoting his whole time to public health work; or (*b*) in Scotland or Ireland the medical officer of health of a county or of one or more sanitary districts having a population of not less than 30,000; or (*c*) a medical officer of health who is a teacher in the department of public health of a recognised medical school; or (*d*) a sanitary staff officer of the Royal Army Medical Corps having charge of an army corps or district; or (*e*) in the British dominions outside the United Kingdom a medical officer of health of a sanitary district having a population of not less than 30,000 who himself holds a registrable diploma in public health. A certificate of an assistant officer of health of a county or a large sanitary district may be accepted, provided the medical officer of health of a county or district consents to the assistant officer giving such instruction. Any candidate who shall produce evidence that he has himself held an appointment as medical officer of health under conditions not requiring the possession of a special sanitary diploma shall be exempt from this regulation. A candidate who produces evidence that he has himself held, for a period of not less than three years, an appointment as medical officer of health of a sanitary district within the British dominions and having a population of not less than 15,000 shall be exempt from the provision of paragraph (4). The provisions as to previous study shall not apply to medical practitioners registered, or entitled to be registered, on or before Jan. 1st, 1890.

The First Part of the examination will comprise (*a*) a written paper of three hours in Chemistry and Physics; (*b*) a three hours' practical and *vivâ voce* examination in Chemistry and Physics. The Written Examination: the subjects will be: Air (Examination, Recognition and Determination of Impurities); Water (Rainfall, Sources and Characters of Waters, Purification and Softening, Methods of Analysis, Distribution and Supply); Soils; Ventilation and Warming; Removal and Disposal of Sewage, House Refuse, Trade Refuse; Offensive Trades in their Chemical and Physical Aspects; Disinfectants; and the Examination of Foods by Chemical and Microscopical Methods. The Practical Examination: Candidates will be expected to exhibit a practical acquaintance with the ordinary methods of analysis and examination used in investigations concerning the subjects of the Written Examination.

The Second Part of the examination will consist of the following parts:—(*a*) Two written papers, each of three hours, dealing with General Hygiene (including Sanitary Engineering, Vital Statistics, and the Laws relating to Public Health); (*b*) a practical and *vivâ voce* examination in General Hygiene; (*c*) a written paper of three hours in Pathology and Bacteriology; and (*d*) a three hours' practical and *vivâ voce* examination in Pathology and Bacteriology. The subjects of these examinations will be as follows:—General Hygiene.—The Written Examination: The construction, drainage, heating, and ventilation of dwellings, schools, hospitals, and other similar buildings; the general sanitation of villages and towns; influences which exercise or threaten to exercise an injurious effect on health and physical development; the etiology, symptoms, and methods of prevention of infectious and other preventable disease; the effects of food, season, soil, and climate upon health and disease; dangerous and offensive trades; the inspection of food; the principles and methods of Vital Statistics; the laws, statutes, memoranda, &c., relating to Public Health. The Practical and *vivâ voce* Examination: Candidates will be required to show a practical knowledge of outdoor sanitary work. Pathology.—The Written Examination: The general pathology of infection by any organism (including a general knowledge of parasitology and helminthology), immunity, the principles of prophylactic and curative inoculations, serum therapeutics; the special pathological characters of the common human infections; the pathology of the diseases of animals transmissible to man; the conditions affecting the existence of infective agents outside the animal body; the pathology of diseases dependent on occupation. The Practical *vivâ voce* Examination: Candidates will be expected (*a*) to be able to demonstrate the existence of infective agents in pathological material; (*b*) to recognise cultures of the ordinary pathogenetic bacteria; (*c*) to exhibit a knowledge of the ordinary methods of bacteriological investigation, and of the special methods applicable to the examination of air, water, food, soil, and sewage; (*d*) to be familiar with the appearances presented by food which for bacteriological reasons is considered unfit for consumption.

Candidates in Part I. of the examination will be required to produce a certificate (1) of Laboratory Work in Chemistry as applied to Hygiene.

Candidates in Part II. will produce the following further certificates: (2) of a Practical Knowledge of the Duties, Routine and Special, of Public Health Administration; (3) of having had Practical Instruction in Bacteriology, and the Pathology of the Diseases of Animals transmissible to Man; and (4) of having attended the practice of a Hospital for Infectious Diseases at which opportunities are afforded for the study of the Methods of Administration. The courses of instruction in Chemistry applied to Hygiene and in Pathology and Bacteriology may be taken in the laboratories of any University in the United Kingdom, of any school of the University of London, of the Royal Army Medical College, of University College, Bristol, of any extramural school in Edinburgh, of Anderson's College, Glasgow, The Royal Institute of Public Health, and in any such other laboratory as may, in the case of any particular candidate, be approved of by the Regius Professor of Medicine. In the cases of certificates (2) and (4), the certificates shall be given in such form as shall satisfy the secretary to the

Boards of Faculties that the candidate has conformed to the rules of the General Medical Council. The names of candidates must be sent to the Assistant Registrar of the University, Clarendon Building, Oxford, to whom applications for any further information should be addressed.

University of Cambridge.—Two examinations in so much of *State Medicine* as is comprised in the functions of medical officers of health are held during the year. Any person possessing a registrable qualification in medicine, surgery, and midwifery may be a candidate for this examination, provided (1) that after obtaining a registrable qualification he has received practical instruction in a laboratory or laboratories,[1] British or foreign, approved by the State Medicine Syndicate, in which chemistry, bacteriology, and the pathology of the diseases of animals transmissible to man are taught; that (2) before admission to Part II. his course for the diploma has extended over a period of not less than nine calendar months, and he produce satisfactory evidence—(i.) *either* (1) that after obtaining a registrable qualification he has during six months[2] been diligently engaged in acquiring a practical knowledge of the duties, routine and special, of public health administration under the personal supervision of: (*a*) in England and Wales, the medical officer of health of a county or of a single or combined sanitary district having a population of not less than 50,000, or a medical officer of health devoting his whole time to public health work; or (*b*) in Scotland, a medical officer of health of a county or counties, or of one or more districts having a population of not less than 30,000; or (*c*) in Ireland, a medical superintendent officer of health of a district or districts having a population of not less than 30,000; or (*d*) in the British dominions outside the United Kingdom, a medical officer of health of a sanitary district having a population of not less than 30,000, who himself holds a registrable diploma in public health; or (*e*) a medical officer of health who is also a teacher in the department of public health of a recognised medical school; or (*f*) a sanitary staff officer of the Royal Army Medical Corps having charge of an army corps, district, command, or division recognised for this purpose by the General Medical Council[3]; or (*g*) an assistant medical officer of health of a county or of a single sanitary district having a population of not less than 50,000, provided the medical officer of health of the county or district in question permits the assistant officer to give the necessary instruction and issue certificates; or (2) that he has himself held for a period of not less than three years an appointment as medical officer of health of a sanitary district within the British dominions and having a population of not less than 15,000; and (ii.) that, after obtaining a registrable qualification, he has during three months attended at least twice weekly the practice of a hospital for infectious diseases, at which he has received instruction in the methods of administration.[4] The certificate of an assistant officer of health of a county or of a single sanitary district having a population of not less than 50,000 may be accepted as evidence under paragraph (ii.), provided the medical officer of health of the county or district in question permits the assistant officer to give the necessary instruction and to issue certificates. Note.—The provisions as to previous study (paragraphs 1 and 2) do not apply to medical practitioners registered, or entitled to be registered, on or before Jan. 1st, 1890. A candidate, who previous to January, 1902, was admitted or was qualified for admission to the examination, or who had already entered on the course of study prescribed by the regulations in force before that date, will continue to be admissible on presenting the certificates required under the old regulations.

The first part of the examination will have reference to the general principles of sanitary science and will comprise the following subjects. The elements of chemistry and physics: methods of chemical analysis and in particular the analysis of foods, air, water, and sewage. The laws of heat and the elements of pneumatics, hydrostatics, and hydraulics in their application to warming, ventilation, water-supply, and drainage. The geological and other conditions determining the healthiness of sites for dwellings. Sources, storage, and purification of water-supply. The elements of meteorology in relation to health. The general principles and chemistry of sewage disposal. Disinfectants, their chemistry and use. The microscopical examination of foods and the detection of the commoner forms of contamination. Effects on health of overcrowding, vitiated air, impure water, polluted soils, and bad or insufficient food. The methods of bacteriological investigation and analysis. The bacteriology of air, water, food, and soil. The general pathology of infection and of the diseases of animals that are transmissible to man. The second part of the examination will have reference to State Medicine and to the applications of Pathology and Sanitary Science, and will comprise the following subjects. Laws and Statutes relating to Public Health.[5] The model by-laws of the Local Government Board. Sanitation of dwellings, schools, factories, and workshops, and of villages and towns. Inspection of slaughter-houses, cowsheds, &c. Inspection of meat and other articles of food. Principles of building construction in their application to dwellings, hospitals, and schools. The general principles and practice of sanitary engineering. General epidemiology, with special reference to the origin, pathology, symptoms, propagation, geographical distribution, and prevention of the epidemic, endemic, and other infective diseases both of temperate and of tropical climates. The methods applicable to the medical investigation of epidemics. Unwholesome trades and occupations and the diseases to which they give rise. Nuisances injurious or dangerous to health. The principles and methods of vital statistics in relation to public health. (N.B.—The foregoing schedule is not to be understood as limiting the scope of the examination, which will include every branch of sanitary science. No candidate will be approved by the examiners who does not show a high proficiency in all the branches of study, scientific and practical, which bear upon the duties of medical officers of health.) The examinations in both parts will be oral and practical, as well as in writing. Candidates may present themselves for either part separately or for both together at their option; but the result of the examination in the case of any candidate will not be published until he has passed to the satisfaction of the examiners in both parts. Marks of distinction will be placed against the names of candidates who have specially distinguished themselves in either (1) general principles of hygiene; (2) bacteriology; (3) chemistry in Part I. of the examination; or (4) the second part of the examination. Every candidate will be required to pay a fee of £6 6*s.* before admission or readmission to *either part* of the examination, but candidates who have presented themselves before the year 1896 will be readmitted to either part on payment of a fee of £5 5*s.* Every candidate who has passed both parts of the examination to the satisfaction of the examiners will receive a diploma testifying to his competent knowledge of what is required for the duties of a medical officer of health. All applications for information respecting this examination and the courses of study should be addressed to J. E. Purvis, M.A., Secretary to the State Medicine Syndicate, the Chemical Laboratory, Pembroke-street, Cambridge. Candidates who desire to present themselves for the examination must send in their applications on forms supplied for the purpose and transmit them with the fees to Dr. J. N. Keynes, Registrary, University of Cambridge, for the April examination on or before March 24th[6] and for the October examination on or before Sept. 22nd.[6] The prescribed certificate must be sent to the Registrary so as to reach him not later than 10 A.M. on March 30th and Oct. 1st respectively. Cheques should be crossed "Barclay and Co., Ltd." The fee for either part of the examination cannot be returned to any candidate who fails to present himself; but he will be entitled, without an additional fee, to be a candidate on one subsequent occasion. Candidates must before admission to either part of the examination produce evidence of having satisfied provisions (1), (2), and (3), and before admission to Part II. having satisfied provision (4), above mentioned. The following is a list of colleges and schools of medicine at which the courses of laboratory instruction have, for the purposes of this examination, been already approved by the State Medicine Syndicate: The University Laboratories, Cambridge; London Hospital Medical College; St. Bartholomew's Hospital Medical College; King's College, London; University College, London; the Royal Army Medical College, London; the Victoria University of Manchester; the University of Durham Medical School, Newcastle-on-Tyne; University of Birmingham; University of Liverpool; St. Mary's Hospital Medical College; Charing Cross Hospital College; Westminster Hospital Medical School; University College, Bristol; the University of Leeds; Guy's Hospital Medical School; St. Mungo's College, Glasgow; Edinburgh University; Middlesex Hospital Medical School; Royal Southern Hospital, Liverpool; Royal Colleges, Edinburgh; Surgeons' Hall, Edinburgh; Trinity College, Dublin; Queen's College, Belfast; St. Thomas's Hospital Medical School; University College, Cardiff; University of Sheffield; Medical School, Catholic University, Dublin; St. George's Hospital Medical School; University of Glasgow; University of Aberdeen; Anderson's College, Glasgow; the Royal Institute of Public Health; the Royal College of Surgeons in Ireland; the Government Bacteriological Laboratory, Hong-Kong; North-East London Post-Graduate College; and the Government Bacteriological Laboratory, Cairo.

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[1] The laboratory instruction shall cover a period of not less than four calendar months, and the candidate shall produce evidence that he has worked in the laboratory for at least 240 hours, of which not more than one-half shall be devoted to Practical Chemistry. The laboratory course should be so arranged as to lay special stress on work which bears most directly on the duties of a Medical Officer of Health.

[2] The certificate for the purpose of Rule II. (i.) (1) must include testimony that the candidate has attended under the supervision of the person certifying on not less than 60 working days. Provided that if the candidate has (i.) produced satisfactory evidence that he has attended a course or courses of instruction in sanitary law, vital statistics, epidemiology, school hygiene, and other subjects bearing on Public Health Administration, given by a teacher or teachers in the Department of Public Health of a recognised Medical School; or (ii.) produced evidence that he has been a resident Medical Officer in a Hospital for Infectious Diseases containing not less than 100 beds, during a period of three months, the period during which he has been engaged in acquiring practical knowledge of his duties under this rule may be reduced to three months, to include an attendance on at least 30 working days.

[3] Districts recognised by the General Medical Council:—Aldershot, Salisbury Plain, Southern and South-Eastern, Western, Dublin and Belfast, Cork, Chatham and Woolwich, Home, Eastern, North-Eastern and North-Western, Scottish, Gibraltar Command. The following Indian Divisions: 1st (Peshawar), 2nd (Rawalpindi), 3rd (Lahore), 4th (Quetta), 5th (Mbow), 6th (Poona), 7th (Meerut), 8th (Lucknow), 9th (Secunderabad), Burma.

[4] 1. Methods of administration shall include the methods of dealing with patients at their admission and discharge, as well as in the wards, and the medical superintendence of the hospital generally. 2. In the case of a Medical Officer of the Royal Army Medical Corps, a certificate from a Principal Medical Officer under whom he has served, stating that he has during a period of at least three months been diligently engaged in acquiring a practical knowledge of hospital administration in relation to infectious diseases, may be accepted as evidence under Rule II. (ii.).

[5] All candidates will be examined in the provisions of the English Statutes relating to public health, but any candidate will be given an opportunity of showing a special knowledge of other sanitary laws in operation within the British Empire, provided that, *when applying for admission to the examination, he give notice* of his desire and indicate the special law he proposes to offer.

Examinations in Tropical Medicine and Hygiene.—Two Examinations in Tropical Medicine and Hygiene are conducted yearly by the State Medicine Syndicate of the University of Cambridge. The examinations are held in Cambridge early in January and in the middle of August. Each examination will extend over four days.

Any person whose name is on the Medical Register is admissible as a candidate to the examination provided (I.) that a period of not less than 12 months have elapsed between his attainment of a registrable qualification and his admission to the examination; (II.) that he produce evidence, satisfactory to the Syndicate, that he has diligently studied Pathology (including parasitology and bacteriology) in relation to Tropical Diseases, Clinical Medicine, and Surgery at a Hospital for Tropical Diseases, and Hygiene and Methods of Sanitation applicable to Tropical Climates. As evidence of study and attainments a candidate may present to the Syndicate (1) any dissertation, memoir, or other record of work carried out by himself on a subject connected with Tropical Medicine or Hygiene; (2) any Certificate or Diploma in Public Health or Sanitary Science he may have obtained from a recognised Examining Body. Such evidence will be considered by the Syndicate in determining whether he is qualified for admission to the examination and by the examiners in determining whether, if admitted, he shall be included in the list of successful candidates.

The examination will be partly oral and partly practical, and will have reference to the nature, incidence, prevention, and treatment of the epidemic and other diseases prevalent in tropical countries. It will comprise the following subjects: 1. The methods of pathological and bacteriological investigation. The examination of the blood. The characters, diagnosis, and life-history of animal and vegetable parasites. The examination, chemical and microscopic, of poisonous or contaminated foods and waters. 2. The origin, pathology, propagation, distribution, prevention, symptoms, diagnosis, and treatment of the epidemic, endemic, and other diseases of tropical climates, including—malaria; blackwater fever; trypanosomiasis; relapsing fever; dengue; yellow fever; plague; tetanus; beri-beri; dysentery and hepatic abscess, cholera, enteric fever, Malta fever, and specific diarrhœal affections of the tropics; diseases due to cestode and other worms; filariasis; bilharzial disease; specific boils, sores, and other cutaneous affections; mycetoma; ophthalmic affections of the tropics; affections caused by poisonous plants and animals, and by poisoned weapons; sunstroke. 3. The general effects on health in the tropics of seasons and climate, soil, water, and food. Personal hygiene, acclimatisation. Principles of general hygiene, with special reference to food- and water-supplies, sites, dwellings, drainage, and the disposal of refuse. The sanitation of native quarters, camps, plantations, factories, hospitals, asylums, jails, pilgrim, and coolie ships. Principles and methods of disinfection.

Every candidate who passes the examination to the satisfaction of the examiners will receive from the University a diploma testifying to his knowlege and skill in tropical medicine and hygiene.

The fee for the examination is £9 9*s.*, and all applications for information should be addressed to Dr. Graham Smith, Pathological Laboratory, Cambridge.

University of London.—State Medicine is one of the subjects which candidates for the M.D. degree may offer (Branch V.). Certificates must be produced showing that a course of practical instruction has been attended for the prescribed period, and that the course has included such chemical, microscopical, and meteorological work and exercises as more especially relate to sanitation. The attendance includes six months' practical instruction in a laboratory and six months' instruction in public health administration under the supervision of a medical officer of health, and three months' attendance on the practice of a hospital for infectious diseases. The examination consists of papers in State Medicine, including hygiene, school hygiene, and forensic medicine; a paper in medicine; an essay; and a two days' practical examination. Candidates must satisfy the examiners both in the papers and in the practical tests. A *vivâ voce* examination may be held at the discretion of the examiners. In connexion with this degree the various metropolitan medical schools hold regular classes under teachers of Public Health and Sanitary Science, such instruction being also used to obtain the various diplomas of other Universities and of those Royal Corporations which grant them.

University of Durham.—Sanitary Science is the special object of the degrees in Hygiene. Candidates for the degree of Bachelor of Hygiene (B.Hy.) must be at least twenty-two years of age, registered, and a graduate in Medicine of a recognised university, and at least twelve months shall have elapsed after the date when the candidates obtained their first registrable qualification in Medicine, Surgery, and Midwifery before presenting themselves for examination. They shall spend six months at Newcastle-upon-Tyne studying Comparative Pathology, Practical Bacteriology, Sanitary Chemistry, and Physics. They have to pass an examination in Sanitary Chemistry, Physics, Comparative Pathology, Sanitary Legislation, Vital Statistics, Nosology, Climatology, Meteorology, Distribution of Health and Disease, Sanitary Medicine and Practical Hygiene. The fee for the examination for the degree of B.Hy. is 10 guineas and for the degree £6 6*s.* The examination is divided into two parts, and candidates may present themselves for either part or both together at their option. Candidates for the degree of Doctor of Hygiene (D.Hy.) must have acquired the degree of Bachelor of Hygiene, must for two years subsequently have been engaged in Public Health administration, or in research work relating to Public Health. The degree shall be conferred on a report of an investigation of the claims of the candidate by two examiners specially appointed for this purpose who shall report to the Board of the Faculty of Medicine on the qualifications of the candidate, basing

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[6] These dates vary slightly from year to year.

University of Aberdeen.—The Diploma in Public Health (D P.H.) is conferred only on graduates in Medicine of a University in the United Kingdom; and a period of not less than twelve months must elapse between medical graduation and entrance to the examination for the diploma. Every candidate must produce evidence of having attended, after graduation in Medicine, during a period of six months, practical instruction in Hygiene and Bacteriology in laboratories approved of by the University, together with having during six months (whereof three months must be distinct from the period of laboratory instruction) been diligently engaged in acquiring a practical knowledge of the duties, routine and special, of Public Health administration under the medical officer of health of a county or large urban district. He must have regularly attended for three months the practice of a hospital for infectious diseases at which opportunities are afforded for the study of methods of administration. He must also have obtained practical instruction in the drawing and interpretation of plans. Every candidate who is not a graduate in Medicine of this University must have attended a course of instruction in the University in one or more of the subjects embraced in the examination for the diploma. The diploma is conferred after an examination in Public Health held in March and July of each year. Candidates must send in their names, with the necessary fee, to the Secretary of the Medical Faculty a fortnight before the examination. The fee is £5 5*s* The examination is conducted by specially qualified examiners appointed by the University. Candidates may enter for the whole examination at one period or they may enter for Part I. at one period and for Part II. at another and subsequent period.

University of Dublin (*Trinity College*).—The Diploma in Public Health is conferred, after examination, on the following conditions. The candidate must be a registered medical practitioner and have obtained a registrable qualification at least nine months before the examination. The candidate must have completed, subsequently to obtaining a registrable qualification, four months' practical instruction in a chemical and bacteriological laboratory or laboratories approved by the University, must have studied practically outdoor sanitary work for six months under an approved officer of health, and must have spent three months in a fever hospital where opportunities are afforded for the study of methods of administration. The subjects of examination are:—Part I. Chemistry, Bacteriology, Hygiene, Pathology, Physics, and Meteorology. Part II. Hygiene and Epidemiology, Vital Statistics, Public Health Law, and Sanitary Engineering and Reports. A special prospectus and a list of recognised laboratories may be obtained by application to the Registrar of the School of Physic, Trinity College, Dublin.

**National University of Ireland.*—At this University there is a Diploma in Public Health and a B.Sc. in Public Health. The Diploma may be granted to matriculated students of the University who shall have completed approved courses of study and shall have passed the prescribed examinations, provided that it shall not be granted except to a registered medical practitioner.

Candidates may present themselves for the examination after an interval of not less than 12 months from the time of obtaining a registrable qualification in Medicine, Midwifery, and Surgery. The curriculum extends over a period of not less than nine calendar months. Every candidate when entering for the examination must produce a certificate that, after obtaining a registrable qualification, he has attended practical instruction in a laboratory, approved by the University, in the subjects of Chemistry, Bacteriology, and the Pathology of the diseases of animals transmissible to man. Every candidate must also produce evidence that, after obtaining a registrable qualification, he has during six months been diligently engaged in acquiring a practical knowledge of the duties, routine and special, of Public Health Administration, under the supervision of:—(*a*) In England and Wales, the medical officer of health of a county or of a single sanitary district having a population of not less than 50,000, or a medical officer of health devoting his whole time to public work; or (*b*) in Scotland, a medical officer of a county or counties, or of one or more districts having a population of not less than 30,000; or (*c*) in Ireland, a medical superintendent officer of health of a district or districts having a population of not less than 30,000; or (*d*) in the British Dominions outside the United Kingdom a medical officer of health of a sanitary district having a population of not less than 30,000, who himself holds a registrable Diploma in Public Health; or (*e*) a medical officer of health who is also a teacher in the department of public health of a recognised medical school; or (*f*) a sanitary staff officer of the Royal Army Medical Corps having charge of an army corps, district, or command, recognised for this purpose by the General Medical Council; (*g*) an assistant medical officer of health of a county, or of a single sanitary district having a population of not less than 50,000, provided the medical officer of health of the county or district in question permits the assistant officer to give the necessary instruction and issue certificates; or that he has himself held for a period of not less than three years an appointment as medical officer of health of a sanitary district within the British Dominions, and having a population of not less than 15,000. Every candidate must produce evidence that, after obtaining a registrable qualification, he has attended during three months the practice of a Hospital for Infectious Diseases at which opportunities are afforded for the study of methods of administration.

The examination extends over not less than four days, one of which is devoted to practical work in a laboratory, and one to practical examination in, and reporting on, subjects which fall within the special outdoor duties of a medical officer of health, including a school medical officer. Candidates must answer questions in the following subjects: (1) Chemistry; (2) Meteorology and Climatology; (3) Sanitary Engineering and Architecture; (4) Bacteriology; and (5) Hygiene, Sanitary Law, and Vital Statistics. In connexion with this part of the examination candidates will be required to draw up a sanitary report upon the condition of dwelling-houses or other buildings selected for the purpose, and read plans, scales, sections, &c.

The examination consists of two parts, which may be passed separately or together. Part I. comprises the following subjects: Chemistry, Meteorology and Climatology, and Sanitary Engineering and Architecture. Part II. comprises the following subjects: Bacteriology, Hygiene, Sanitary Law, and Vital Statistics. The examination in each part will be oral and practical as well as written.

For the B.Sc. in Public Health a candidate shall not be admitted unless he (*a*) shall have received the degrees of M.B., B.Ch., and B.A.O. at least one year previously; (*b*) shall have pursued an approved course of study in the Faculty of Medicine; and (*c*) shall have passed the prescribed examination. In addition to D.P.H. course the candidate will be required to take up (1) a Special Course of Pathology; (2) Bacteriology; and (3) Advanced Course in Hygiene. Each of these courses lasts three months.

University of Belfast.—A Diploma in Public Health is given by examination to every candidate, who must produce evidence that, after obtaining a registrable qualification, he has during six months received practical instruction in a laboratory or laboratories, British or foreign, approved by the Licensing Body granting the diplomas, in which Chemistry, Bacteriology, and the Pathology of the diseases of animals transmissible to man are taught.[7] He must also produce evidence that, after obtaining a registrable qualification, he has during six months (of which at least three months shall be distinct and separate from the period of laboratory instruction mentioned above) been diligently engaged in acquiring a practical knowledge of the duties, routine and special, of Public Health Administration, under the supervision of:—(*a*) In England and Wales, the medical officer of health of a county or of a single sanitary district having a population of not less than 50,000, or a medical officer of health devoting his whole time to public health work; or (*b*) in Scotland, a medical officer of a county or counties, or of one or more sanitary districts having a population of not less than 30,000; or (*c*) in Ireland, a medical superintendent officer of health of a district or districts having a population of not less than 30,000; or (*d*) in the British dominions outside the United Kingdom, a medical officer of health of a sanitary district having a population of not less than 30,000, who himself holds a registrable Diploma in Public Health; or (*e*) a medical officer of health who is also a teacher in the department of public health of a recognised medical school; or (*f*) a sanitary staff officer of the Royal Army Medical Corps having charge of an army corps, district, or command, recognised for this purpose by the General Medical Council.[8]

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* No returns.

[7] Provided that the period of six months may be reduced to a period of three months (which shall be distinct and separate from the period of laboratory instruction) in the case of any candidate who produces evidence that, after obtaining a registrable qualification, he has during three months attended a course or courses of instruction in sanitary law, sanitary engineering, vital statistics, and other subjects bearing on public health administration, given by a teacher or teachers in the department of public health of a recognised medical school.

After obtaining a registrable qualification every candidate must produce evidence that he has attended during three months the practice of a hospital for infectious diseases at which opportunities are afforded for the study of methods of administration.[9] The examination must have extended over not less than four days, one of which shall have been devoted to practical work in a laboratory, and one to practical examination in, and reporting on, subjects which fall within the special outdoor duties of a medical officer of health.

Examinations.—One examination will be held yearly and will consist of two parts. Candidates may present themselves for either part separately, or for both parts together at their option. The first part of the examination will have reference to the general principles of sanitary science, and will comprise the following subjects: Principles and methods of volumetric and gravimetric chemical analyses and their application to the analysis of air, water, milk, butter, beverages (alcoholic), foods, &c., ventilation, warming, water-supply, and drainage. Conditions determining the healthiness of sites for dwellings. Sources, storage, and purification of drinking water. Elements of meteorology and climatology. Building construction in relation more particularly to dwellings, hospitals, and schools. The disposal and purification of sewage and the disposal of refuse. The general principles of sanitary engineering. Disinfectants. Methods of bacteriological investigation and analysis. Pathology of infection and of the diseases of animals transmissible to man. The second part of the examination will have reference to State Medicine and to the applications of Pathology and Sanitary Science, and will comprise generally the following subjects:—Laws and statutes relating to public health. Model By-laws of the Local Government Board. Sanitation of dwellings, schools, factories and workshops; and of villages and towns. Inspection of slaughter-houses, cow-sheds, &c. Inspection of meat and other articles of food. General epidemiology, with special reference to the origin, pathology, symptoms, propagation, geographical distribution, and prevention of the epidemic, endemic, and other infective diseases, both of temperate and tropical climates The methods applicable to the medical investigation of epidemics. Effects of overcrowding on health, also those of vitiated air, impure water, polluted soils, and of bad or insufficient food. Unwholesome trades and occupations and the resulting diseases. Nuisances injurious or dangerous to health. Relations of season and climate to health. The principles and methods of vital statistics in relation to public health. All candidates will be examined in the provisions of the statutes relating to public health in Ireland, but any candidate will be given an opportunity of showing a special knowledge of other sanitary laws in operation within the British Empire, provided that, when applying for admission to the examination, he give notice of his desire and indicate the special law he proposes to offer.

The examination in 1915 will begin about March 15th and June 21st. Candidates must lodge their names and pay the prescribed fees at the secretary's office on or before June 14th. The certificates of study required by the regulations must be produced before admission to the examination. The fee prescribed for each part of the examination is 1 guinea.

Royal College of Physicians of London and the Royal College of Surgeons of England.—The following are the regulations for obtaining the Diploma in Public Health: The examination consists of two parts. The first part of the examination takes place in January, April, and July, and the second part in January and July. The fee for each part is £10 10*s.*, except for those who are diplomates of the Royal Colleges, who pay £6 6*s.* for each part. A candidate intending to present himself must give 14 days' written notice to the Secretary, at the Examination Hall, Queen's-square, Bloomsbury, W.C. A candidate registered under the Medical Act on or before Jan. 1st, 1890, will be admissible to Part I. of the examination on producing evidence of being at least 23 years of age, and to Part II. on producing evidence of being at least 24 years of age. A candidate registered under the Medical Act after Jan. 1st, 1890, will be admissible to examination in Part I. on producing evidence (1) of having been in possession of a registrable qualification in Medicine, Surgery, and Midwifery for at least 12 months; (2) of having attended, after obtaining such registrable qualification, practical instruction in a laboratory recognised by the Examining Board in England for at least 240 hours during a period of six months; and (3) of being at least 23 years of age. A candidate will be admitted to Part II. of the examination on producing evidence (1) of having been diligently engaged in acquiring a practical knowledge in the duties, routine and special, of Public Health administration on not less than 60 working days during six months under the supervision of a medical officer of health who fulfils certain conditions which can be ascertained on application to the secretary[10]; (2) of having attended twice weekly during three months the clinical practice of a hospital for infectious diseases recognised by the Examining Board in England at which he has received instruction in the methods of administration, after obtaining his registrable qualification in Medicine, Surgery, and Midwifery; and (3) of being at least 24 years of age.

The Examination for the Diploma in the Diseases and Hygiene of the Tropics is held in the months of April and July, and comprises (*a*) Written Questions; (*b*) Oral Questions; (*c*) Practical Laboratory Work; (*d*) Clinical Work. The fee for each admission to the examination is £9 9*s.* Candidates must give 14 days' notice in writing to the Secretary at the Examination Hall and produce at the same time the necessary certificates of study. Candidates must produce evidence of being in possession of a registrable qualification in Medicine, Surgery, and Midwifery, and of having attended, subsequently to obtaining such registrable qualification: (1) practical instruction in Bacteriology, Parasitology, Medical Zoology, and Hæmatology in a Laboratory recognised for this purpose during not less than six months; (2) Instruction in Hygiene applicable to Tropical Countries; (3) the Clinical Practice of a Hospital recognised for the study of Tropical Diseases during not less than six months. Graduates in Medicine or Surgery of Indian, Colonial, and Foreign Universities recognised by the Examining Board in England, but whose degrees are not registrable in this country, may enter for the examination for the Diploma in the Diseases and Hygiene of the Tropics on fulfilling the same conditions in regard to study. In such cases it must be understood that the diploma, if obtained, will not be registrable under the Medical Acts. The above conditions of study may be modified at the discretion of the committee of management in the cases of a candidate (*a*) who has been employed in Foreign or Colonial Medical Service; (*b*) who has been engaged in public

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[8] The certificate of an assistant medical officer of health of a county or of a single sanitary district having a population of not less than 50,000 may be accepted as evidence, provided the medical officer of health of the county or district in question permits the assistant officer to give the necessary instructions and to issue certificates. A candidate who shall have produced evidence that he has himself held for a period of not less than three years an appointment as medical officer of health of a sanitary district within the British dominions, and having a population of not less than 15,000, may be exempted from the requirements of these regulations.

[9] Methods of administration shall include the methods of dealing with patients at their admission and discharge, as well as in the wards, and the medical superintendence of the hospital generally. In the case of a medical officer of the Royal Army Medical Corps a certificate from a principal medical officer under whom he has served, stating that he has during a period of at least three months been diligently engaged in acquiring a practical knowledge of hospital administration in relation to infectious diseases, may be accepted as evidence. These regulations as to study do not apply to medical practitioners registered or entitled to be registered on or before Jan. 1st, 1890.

[10] Provided that the period of six months may be reduced to a period of three months in the case of any candidate who produces evidence that after obtaining a registrable qualification, he has during three months attended a course or courses of instruction in sanitary law, vital statistics, epidemiology, school hygiene, and other subjects bearing on public health administration given by a teacher or teachers in the department of public health of a recognised medical school, or in the case of a candidate who produces evidence of having been resident medical officer in a Hospital for Infectious Diseases of not less than 100 beds for a period of 12 months.

University of Aberdeen.—The Diploma in Public Health (D.P.H.) is conferred only on graduates in Medicine of a University in the United Kingdom; and a period of not less than twelve months must elapse between medical graduation and entrance to the examination for the diploma. Every candidate must produce evidence of having attended, after graduation in Medicine, during a period of six months, practical instruction in Hygiene and Bacteriology in laboratories approved of by the University, together with having during six months (whereof three months must be distinct from the period of laboratory instruction) been diligently engaged in acquiring a practical knowledge of the duties, routine and special, of Public Health administration under the medical officer of health of a county or large urban district. He must have regularly attended for three months the practice of a hospital for infectious diseases at which opportunities are afforded for the study of methods of administration. He must also have obtained practical instruction in the drawing and interpretation of plans. Every candidate who is not a graduate in Medicine of this University must have attended a course of instruction in the University in one or more of the subjects embraced in the examination for the diploma. The diploma is conferred after an examination in Public Health held in March and July of each year. Candidates must send in their names, with the necessary fee, to the Secretary of the Medical Faculty a fortnight before the examination. The fee is £5 5*s.* The examination is conducted by specially qualified examiners appointed by the University. Candidates may enter for the whole examination at one period or they may enter for Part I. at one period and for Part II. at another and subsequent period.

University of Dublin (Trinity College).—The Diploma in Public Health is conferred, after examination, on the following conditions. The candidate must be a registered medical practitioner and have obtained a registrable qualification at least nine months before the examination. The candidate must have completed, subsequently to obtaining a registrable qualification, four months' practical instruction in a chemical and bacteriological laboratory or laboratories approved by the University, must have studied practically outdoor sanitary work for six months under an approved officer of health, and must have spent three months in a fever hospital where opportunities are afforded for the study of methods of administration. The subjects of examination are:—Part I. Chemistry, Bacteriology, Hygiene, Pathology, Physics, and Meteorology. Part II. Hygiene and Epidemiology, Vital Statistics, Public Health Law, and Sanitary Engineering and Reports. A special prospectus and a list of recognised laboratories may be obtained by application to the Registrar of the School of Physic, Trinity College, Dublin.

**National University of Ireland.*—At this University there is a Diploma in Public Health and a B.Sc. in Public Health. The Diploma may be granted to matriculated students of the University who shall have completed approved courses of study and shall have passed the prescribed examinations, provided that it shall not be granted except to a registered medical practitioner.

Candidates may present themselves for the examination after an interval of not less than 12 months from the time of obtaining a registrable qualification in Medicine, Midwifery, and Surgery. The curriculum extends over a period of not less than nine calendar months. Every candidate when entering for the examination must produce a certificate that, after obtaining a registrable qualification, he has attended practical instruction in a laboratory, approved by the University, in the subjects of Chemistry, Bacteriology, and the Pathology of the diseases of animals transmissible to man. Every candidate must also produce evidence that, after obtaining a registrable qualification, he has during six months been diligently engaged in acquiring a practical knowledge of the duties, routine and special, of Public Health Administration, under the supervision of:—(*a*) In England and Wales, the medical officer of health of a county or of a single sanitary district having a population of not less than 50,000, or a medical officer of health devoting his whole time to public work; or (*b*) in Scotland, a medical officer of a county or counties, or of one or more districts having a population of not less than 30,000; or (*c*) in Ireland, a medical superintendent officer of health of a district or districts having a population of not less than 30,000; or (*d*) in the British Dominions outside the United Kingdom a medical officer of health of a sanitary district having a population of not less than 30,000, who himself holds a registrable Diploma in Public Health; or (*e*) a medical officer of health who is also a teacher in the department of public health of a recognised medical school; or (*f*) a sanitary staff officer of the Royal Army Medical Corps having charge of an army corps, district, or command, recognised for this purpose by the General Medical Council; (*g*) an assistant medical officer of health of a county, or of a single sanitary district having a population of not less than 50,000, provided the medical officer of health of the county or district in question permits the assistant officer to give the necessary instruction and issue certificates; or that he has himself held for a period of not less than three years an appointment as medical officer of health of a sanitary district within the British Dominions, and having a population of not less than 15,000. Every candidate must produce evidence that, after obtaining a registrable qualification, he has attended during three months the practice of a Hospital for Infectious Diseases at which opportunities are afforded for the study of methods of administration.

The examination extends over not less than four days, one of which is devoted to practical work in a laboratory, and one to practical examination in, and reporting on, subjects which fall within the special outdoor duties of a medical officer of health, including a school medical officer. Candidates must answer questions in the following subjects: (1) Chemistry; (2) Meteorology and Climatology; (3) Sanitary Engineering and Architecture; (4) Bacteriology; and (5) Hygiene, Sanitary Law, and Vital Statistics. In connexion with this part of the examination candidates will be required to draw up a sanitary report upon the condition of dwelling-houses or other buildings selected for the purpose, and read plans, scales, sections, &c.

The examination consists of two parts, which may be passed separately or together. Part I. comprises the following subjects: Chemistry, Meteorology and Climatology, and Sanitary Engineering and Architecture. Part II. comprises the following subjects: Bacteriology, Hygiene, Sanitary Law, and Vital Statistics. The examination in each part will be oral and practical as well as written.

For the B.Sc. in Public Health a candidate shall not be admitted unless he (*a*) shall have received the degrees of M.B., B.Ch., and B.A.O. at least one year previously; (*b*) shall have pursued an approved course of study in the Faculty of Medicine; and (*c*) shall have passed the prescribed examination. In addition to D.P.H. course the candidate will be required to take up (1) a Special Course of Pathology; (2) Bacteriology; and (3) Advanced Course in Hygiene. Each of these courses lasts three months.

University of Belfast.—A Diploma in Public Health is given by examination to every candidate, who must produce evidence that, after obtaining a registrable qualification, he has during six months received practical instruction in a laboratory or laboratories, British or foreign, approved by the Licensing Body granting the diplomas, in which Chemistry, Bacteriology, and the Pathology of the diseases of animals transmissible to man are taught.[7] He must also produce evidence that, after obtaining a registrable qualification, he has during six months (of which at least three months shall be distinct and separate from the period of laboratory instruction mentioned above) been diligently engaged in acquiring a practical knowledge of the duties, routine and special, of Public Health Administration, under the supervision of:—(*a*) In England and Wales, the medical officer of health of a county or of a single sanitary district having a population of not less than 50,000, or a medical officer of health devoting his whole time to public health work; or (*b*) in Scotland, a medical officer of a county or counties, or of one or more sanitary districts having a population of not less than 30,000; or (*c*) in Ireland, a medical superintendent officer of health of a district or districts having a population of not less than 30,000; or (*d*) in the British dominions outside the United Kingdom, a medical officer of health of a sanitary district having a population of not less than 30,000, who himself holds a registrable Diploma in Public Health; or (*e*) a medical officer of health who is also a teacher in the department of public health of a recognised medical school; or (*f*) a sanitary staff officer of the Royal Army Medical Corps having charge of an army corps, district, or command, recognised for this purpose by the General Medical Council.[8]

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* No returns.

[7] Provided that the period of six months may be reduced to a period of three months (which shall be distinct and separate from the period of laboratory instruction) in the case of any candidate who produces evidence that, after obtaining a registrable qualification, he has during three months attended a course or courses of instruction in sanitary law, sanitary engineering, vital statistics, and other subjects bearing on public health administration, given by a teacher or teachers in the department of public health of a recognised medical school.

After obtaining a registrable qualification every candidate must produce evidence that he has attended during three months the practice of a hospital for infectious diseases at which opportunities are afforded for the study of methods of administration.[9] The examination must have extended over not less than four days, one of which shall have been devoted to practical work in a laboratory, and one to practical examination in, and reporting on, subjects which fall within the special outdoor duties of a medical officer of health.

Examinations.—One examination will be held yearly and will consist of two parts. Candidates may present themselves for either part separately, or for both parts together at their option. The first part of the examination will have reference to the general principles of sanitary science, and will comprise the following subjects: Principles and methods of volumetric and gravimetric chemical analyses and their application to the analysis of air, water, milk, butter, beverages (alcoholic), foods, &c., ventilation, warming, water-supply, and drainage. Conditions determining the healthiness of sites for dwellings. Sources, storage, and purification of drinking water. Elements of meteorology and climatology. Building construction in relation more particularly to dwellings, hospitals, and schools. The disposal and purification of sewage and the disposal of refuse. The general principles of sanitary engineering. Disinfectants. Methods of bacteriological investigation and analysis. Pathology of infection and of the diseases of animals transmissible to man. The second part of the examination will have reference to State Medicine and to the applications of Pathology and Sanitary Science, and will comprise generally the following subjects:—Laws and statutes relating to public health. Model By-laws of the Local Government Board. Sanitation of dwellings, schools, factories and workshops; and of villages and towns. Inspection of slaughter-houses, cowsheds, &c. Inspection of meat and other articles of food. General epidemiology, with special reference to the origin, pathology, symptoms, propagation, geographical distribution, and prevention of the epidemic, endemic, and other infective diseases, both of temperate and tropical climates The methods applicable to the medical investigation of epidemics. Effects of overcrowding on health, also those of vitiated air, impure water, polluted soils, and of bad or insufficient food. Unwholesome trades and occupations and the resulting diseases. Nuisances injurious or dangerous to health. Relations of season and climate to health. The principles and methods of vital statistics in relation to public health. All candidates will be examined in the provisions of the statutes relating to public health in Ireland, but any candidate will be given an opportunity of showing a special knowledge of other sanitary laws in operation within the British Empire, provided that, when applying for admission to the examination, he give notice of his desire and indicate the special law he proposes to offer.

The examination in 1915 will begin about March 15th and June 21st. Candidates must lodge their names and pay the prescribed fees at the secretary's office on or before June 14th. The certificates of study required by the regulations must be produced before admission to the examination. The fee prescribed for each part of the examination is 1 guinea.

Royal College of Physicians of London and the Royal College of Surgeons of England.—The following are the regulations for obtaining the Diploma in Public Health: The examination consists of two parts. The first part of the examination takes place in January, April, and July, and the second part in January and July. The fee for each part is £10 10*s.*, except for those who are diplomates of the Royal Colleges, who pay £6 6*s.* for each part. A candidate intending to present himself must give 14 days' written notice to the Secretary, at the Examination Hall, Queen's-square, Bloomsbury, W.C. A candidate registered under the Medical Act on or before Jan. 1st, 1890, will be admissible to Part I. of the examination on producing evidence of being at least 23 years of age, and to Part II. on producing evidence of being at least 24 years of age. A candidate registered under the Medical Act after Jan. 1st, 1890, will be admissible to examination in Part I. on producing evidence (1) of having been in possession of a registrable qualification in Medicine, Surgery, and Midwifery for at least 12 months; (2) of having attended, after obtaining such registrable qualification, practical instruction in a laboratory recognised by the Examining Board in England for at least 240 hours during a period of six months; and (3) of being at least 23 years of age. A candidate will be admitted to Part II. of the examination on producing evidence (1) of having been diligently engaged in acquiring a practical knowledge in the duties, routine and special, of Public Health administration on not less than 60 working days during six months under the supervision of a medical officer of health who fulfils certain conditions which can be ascertained on application to the secretary[10]; (2) of having attended twice weekly during three months the clinical practice of a hospital for infectious diseases recognised by the Examining Board in England at which he has received instruction in the methods of administration, after obtaining his registrable qualification in Medicine, Surgery, and Midwifery; and (3) of being at least 24 years of age.

The Examination for the Diploma in the Diseases and Hygiene of the Tropics is held in the months of April and July, and comprises (*a*) Written Questions; (*b*) Oral Questions; (*c*) Practical Laboratory Work; (*d*) Clinical Work. The fee for each admission to the examination is £9 9*s.* Candidates must give 14 days' notice in writing to the Secretary at the Examination Hall and produce at the same time the necessary certificates of study. Candidates must produce evidence of being in possession of a registrable qualification in Medicine, Surgery, and Midwifery, and of having attended, subsequently to obtaining such registrable qualification: (1) practical instruction in Bacteriology, Parasitology, Medical Zoology, and Hæmatology in a Laboratory recognised for this purpose during not less than six months; (2) Instruction in Hygiene applicable to Tropical Countries; (3) the Clinical Practice of a Hospital recognised for the study of Tropical Diseases during not less than six months. Graduates in Medicine or Surgery of Indian, Colonial, and Foreign Universities recognised by the Examining Board in England, but whose degrees are not registrable in this country, may enter for the examination for the Diploma in the Diseases and Hygiene of the Tropics on fulfilling the same conditions in regard to study. In such cases it must be understood that the diploma, if obtained, will not be registrable under the Medical Acts. The above conditions of study may be modified at the discretion of the committee of management in the cases of a candidate (*a*) who has been employed in Foreign or Colonial Medical Service; (*b*) who has been engaged in public professional or teaching work in tropical countries; (*c*) who has been engaged in original investigation in tropical countries. The subjects of the examination are as follows: 1. The methods of investigation of organs, tissues, blood, fæces, urine, bacteria, helminths, and protozoa. The characters and life-history of bacteria, helminths, protozoa, fungi, arthropoda, and other disease carriers. 2. The etiology, pathology, distribution, symptoms, diagnosis, prevention and treatment of diseases of tropical countries, including (*a*) diseases due to bacteria, protozoa, helminths, and mycotic parasites; (*b*) diseases of uncertain etiology; (*c*) diseases due to food and those due to ticks, insects, scorpions, poisonous snakes, and fish; (*d*) ophthalmic diseases, (*e*) skin diseases; and (*f*) native poisons and poisoned wounds. 3 Surgery in relation to Tropical Disease. 4. Hygiene of the Tropics: Personal, domestic, municipal, port and ship hygiene. Climates. Acclimatisation. Water-supply and its protection. Purification of water and simple tests for potability. Food and clothing in relation to health and disease. Removal and disposal of waste matter and excreta. Sewage and drainage. Disposal of the dead. Soil and its drainage. Reclamation of swamps and low-lying lands. Prevention and abolition of insect-breeding places. Hygiene in relation to dwellings, buildings, towns, villages, transport, and public gatherings. General construction and sanitation of markets, slaughter-houses, stables, cowsheds, hospitals, asylums, and gaols. Sanitation of plantations. Disinfection. Prevention and control of disease. Vaccination and preventive inoculation.

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[8] The certificate of an assistant medical officer of health of a county or of a single sanitary district having a population of not less than 50,000 may be accepted as evidence, provided the medical officer of health of the county or district in question permits the assistant officer to give the necessary instructions and to issue certificates. A candidate who shall have produced evidence that he has himself held for a period of not less than three years an appointment as medical officer of health of a sanitary district within the British dominions, and having a population of not less than 15,000, may be exempted from the requirements of these regulations

[9] Methods of administration shall include the methods of dealing with patients at their admission and discharge, as well as in the wards, and the medical superintendence of the hospital generally. In the case of a medical officer of the Royal Army Medical Corps a certificate from a principal medical officer under whom he has served, stating that he has during a period of at least three months been diligently engaged in acquiring a practical knowledge of hospital administration in relation to infectious diseases, may be accepted as evidence. These regulations as to study do not apply to medical practitioners registered or entitled to be registered on or before Jan. 1st, 1890.

[10] Provided that the period of six months may be reduced to a period of three months in the case of any candidate who produces evidence that after obtaining a registrable qualification, he has during three months attended a course or courses of instruction in sanitary law, vital statistics, epidemiology, school hygiene, and other subjects bearing on public health administration given by a teacher or teachers in the department of public health of a recognised medical school, or in the case of a candidate who produces evidence of having been resident medical officer in a Hospital for Infectious Diseases of not less than 100 beds for a period of 12 months.

The Royal College of Physicians of Edinburgh, the Royal College of Surgeons of Edinburgh, the Royal Faculty of Physicians and Surgeons of Glasgow.—All candidates for the Diploma in Public Health must have a qualification which has been registered under the Medical Acts. Those qualified before 1890 do not require to produce evidence of attendance on any special courses. All other candidates must have attended, after qualifying, not less than four calendar months for at least 240 hours' practical instruction in Chemistry and Bacteriology in a recognised laboratory or laboratories, must have studied for six months the duties of outdoor sanitary work under the medical officer of health of a county or large urban district or a medical officer of health who is also a teacher of Sanitary Science in a Medical School, or a sanitary staff officer of the Royal Army Medical Corps having charge of an Army Corps District or command, and evidence of attendances for three months, at least twice weekly, the practice of a Hospital for Infectious Diseases, at which he has received instruction in the methods of administration. The examination consists of two parts, and candidates may enter for both at one period or for either separately. The First Part includes (*a*) Laboratory Work (Chemistry and Bacteriology), (*b*) Physics and Meteorology; and the Second Examination embraces (*a*) Report on Premises visited, (*b*) Examination at Fever Hospital, (*c*) Examination at Public Abattoir, (*d*) Written and Oral Examinations on Epidemiology and Endemiology, (*e*) Vital Statistics and Sanitary Law, and (*f*) Practical Sanitation. The fee is 12 guineas for both examinations, or 6 guineas for either of them. A fee of 3 guineas is payable by rejected candidates for either examination. The examination is held twice yearly, in May and October. The published regulations provide detailed synopses of the subjects of examination. The Registrar for Edinburgh is Mr. D. L. Eadie, 50, George-square, and for Glasgow Mr. Walter Hurst, 242, St. Vincent-street.

Royal College of Physicians of Ireland and Royal College of Surgeons in Ireland.—Stated examinations for the Diploma in Public Health are held in the months of February, May, July, and November. A special examination for the diploma may, at the discretion of the Committee of Management (except during the months of August and September), be obtained on payment of £15 15*s.*, in addition to the ordinary fees mentioned below, and on giving notice at least one fortnight before the date of the proposed examination. Every candidate for the Diploma in Public Health must be a registered medical practitioner. (Candidates registered or entitled to be registered prior to January, 1890, are exempt from the rules as to study.) He must subsequently to qualification (1) receive six months' laboratory instruction in Chemistry, Bacteriology, and the Diseases of Animals transmissible to man; and (2) during six months practically study outdoor sanitary work under a medical officer of health and shall as an additional requirement attend a hospital for infectious diseases. Candidates are examined on four days, commencing on the first Monday of February, May, and November. Each candidate must return his name to the secretary of the Committee of Management under the Conjoint Scheme two weeks before the examination, and lodge with him a testimonial of character from a Fellow of either of the Colleges, or of the Royal Colleges of Physicians or Surgeons of London or Edinburgh. The fee for the examination is £10 10*s.* The examination for the Diploma in Public Health comprises the following subjects:—Hygiene, Chemistry, Meteorology and Climatology, Engineering, Vital Statistics, Sanitary Law, and Bacteriology. For further particulars apply to Alfred Miller, Secretary, Committee of Management; Office, Royal College of Surgeons, Dublin.

DENTAL SURGERY.

ANYONE who is on the Medical Register is entitled to practise as a dentist, although he cannot register as such without the special licence; but it is of eminent advantage to take the L.D.S., otherwise few dental appointments at general or special hospitals or dispensaries are available. And, what is still more important, the manual dexterity requisite for the successful practice of dentistry can only be gained by long and careful training; this having been attained, it is but little trouble to pass the special examinations. The subjects beyond those included in the general qualification are—Dental Anatomy and Physiology (Human and Comparative), one course; a separate course of Dental Histology, including the preparation of microscopical sections; Dental Surgery, one course; a separate course of Practical Dental Surgery; a course of not less than five lectures on the Surgery of the Mouth; Dental Mechanics, one course; a course of Practical Dental Mechanics, including the manufacture and adjustment of six dentures and six crowns; Dental Metallurgy, one course; a course of Practical Dental Metallurgy; Practice of Dental Surgery at a recognised school, two years, and a certificate of having been engaged during a period of not less than two years in acquiring a knowledge of Dental Mechanics (this may be obtained by apprenticeship to a duly qualified dental practitioner or in the mechanical department of a recognised dental hospital). The Dental Schools in London are the Royal Dental Hospital of London, the National Dental Hospital, Guy's Hospital Dental School, and the London Hospital Dental School. Most of the large provincial towns, where there are medical schools, have now dental hospitals. A convenient arrangement by which the M.R.C.S., L.R.C.P., and L.D.S. can be taken is as follows:—The Preliminary Examination in General Education having been passed the student should commence his mechanical training at a dental school or with a qualified dentist and register as a dental and medical student. (This instruction, however, may be taken prior to the date of registration as a dental student.) During the mechanical tuition the student should receive instruction in Chemistry and Physics, together with Biology, and should pass the First Professional Examination for the Conjoint Diploma during his first year. He should then obtain instruction in Pharmacy and pass the examination. On the completion of the mechanical training the student should join the general and dental hospitals, pass the First Professional Dental Examination in six months' time, and at the expiration of 18 months at the general hospital should pass the Second Examination for the Conjoint Diploma. The Final Examination for the L.D.S. can be taken at the end of two years from joining the hospital. The student during these two years will have been attending simultaneously both the general and dental hospitals. During the remainder of his time he should devote himself to Surgery, Medicine, Midwifery, &c., in which subjects he may be examined at the expiration of the required time from the passing of the Second Examination. When time is not a great object, a better course is to join only the general hospital at the completion of the mechanical tuition, and complete the Second Examination for the Conjoint Diploma and also his "Dressing" and "Clerking" appointments before commencing his surgical training at the Dental Hospital. The best course, however, is entirely to finish the curriculum for the M.R.C.S. and L.R.C.P. and then take the special dental work. The regulations for the Dental Licence of the Royal Colleges of Ireland and Edinburgh and of the Faculty of Physicians and Surgeons of Glasgow are very similar to those of the English College. The L.D.S. can also be obtained alone.

The Registration of Dental Students is carried on at the Medical Council Office in London in the same manner as the existing registration of medical students, and subject to the same regulations as regards Preliminary Examinations. Candidates for a diploma in Dental Surgery must produce certificates of having been engaged during four years in professional studies, including two years' instruction in mechanical dentistry. The two years of instruction in mechanical dentistry, or any part of them, may be taken by the dental student either before or after his registration as a student, but no portion of such mechanical instruction will be counted as one of the four years of professional study unless taken after registration.

It is necessary for anyone practising Dental Surgery in this country to be on the Register, and no foreign qualifications are admitted.

The Royal College of Surgeons of England grants a diploma in Dental Surgery under the following regulations, which apply to all candidates who have registered as dental students after Jan. 1st, 1897. Candidates are required to pass three examinations: the Preliminary Science Examination, the First Professional Examination, and the Second Professional Examination. I. Preliminary Science Examination.—Before admission to this examination the candidate must produce a certificate of having received instruction (which may be taken prior to the date of registration as a dental student) at a recognised institution in Chemistry, Physics, and Practical Chemistry. The examination consists of these subjects and is identical with Part I. of the First Examination of the Examining Board in England. Candidates who commenced professional study on or after Oct. 1st, 1913, must pass the Preliminary Science Examination before commencing the courses required for the Second Professional Examination. II. The First Professional Examination.—The candidate must produce the following certificates: 1. Of having been engaged during a period of not less than two years in acquiring a practical familiarity with the details of mechanical dentistry, under the instruction (which may be taken prior to registration as a dental student) of a competent practitioner or under the direction of the superintendent of the mechanical department of a recognised dental hospital. 2. Of registration as a dental student by the General Medical Council. 3. Of having attended at a recognised Dental Hospital and School (*a*) a course of Lectures on Dental Metallurgy; (*b*) a course of Practical Dental Metallurgy; (*c*) a course of Lectures on Dental Mechanics; and (*d*) a course of Practical Dental Mechanics, including the manufacture and adjustment of six dentures and six crowns. Candidates may present themselves for the First Professional Examination on production of the required certificates. The Examination consists of Part I. (Mechanical Dentistry) and Part II. (Dental Metallurgy), the examination in Dental Metallurgy being by written paper. The parts may be taken together or separately. III. The Second Professional Examination.—The candidate must produce the following certificates: 1. Of having been engaged during four years in the acquirement of professional knowledge subsequently to the date of registration as a dental student. 2. Of having attended at a recognised dental hospital and school (*a*) a course of Dental Anatomy and Physiology; (*b*) a separate course of Dental Histology, including the preparation of microscopical sections; (*c*) a course of Dental Surgery; (*d*) a separate course of Practical Dental Surgery; (*e*) a course of not less than five lectures on the Surgery of the mouth, which lectures may be given at a dental hospital or at a recognised medical school; in the latter case they may form part of the course of lectures on Surgery; (*f*) a course of Dental Materia Medica; and (*g*) a course of Dental Bacteriology; (*h*) a course of practical instruction in the administration of such Anæsthetics as are in common use in Dental Surgery. 3. Of having attended at a recognised dental hospital or in the dental department of a recognised general hospital the practice of Dental Surgery during two years. 4. Of having attended at a recognised medical school (*a*) a course of lectures on Anatomy, (*b*) a course of lectures on Physiology, (*c*) a separate Practical Course of Physiology, (*d*) a course of lectures on Surgery, and (*e*) a course of lectures on Medicine. The lectures on Surgery and Medicine must be attended after the completion of the courses of lectures on Anatomy and Physiology. 5. Of having performed Dissections at a recognised medical school during not less than 12 months. 6. Of having attended at a recognised hospital the practice of Surgery and Clinical Lectures on Surgery for 12 months during the ordinary sessions. 7. Of being 21 years of age. The certificates of professional study will be required to show that students have attended the courses of professional study to the satisfaction of their teachers. Candidates may present themselves for the Second Professional Examination after the completion of four years' professional study from the date of registration as a dental student and after the lapse of not less than six months from the date of passing the First Professional Examination. The Second Professional Examination consists of: Part I., General Anatomy and Physiology, General Surgery and Pathology; Part II., Dental Anatomy and Physiology, Dental Pathology and Surgery, and Practical Dental Surgery. The written examination in Part I. comprises General Anatomy and Physiology, General Pathology and Surgery, and in Part II., Dental Anatomy and Physiology, and Dental Pathology and Surgery. At the Practical Examination candidates may be examined (*a*) on the treatment of Dental Caries, and may be required to prepare and treat teeth by filling with gold or other material, by inlaying or by crowning, or to do any other operation in Dental Surgery (candidates must provide their own instruments); (*b*) on the Mechanical and Surgical treatment of the various irregularities of Children's Teeth. There is also an Oral Examination. Candidates may take the two parts of the examination together or separately. Candidates must pass Part I. before proceeding to Part II. If they fail in Part I. they are not allowed to proceed with Part II. Exemption from the Preliminary Science Examination is granted to candidates who have passed an Examination in Chemistry and Physics for a degree in Medicine at a University in the United Kingdom, in India, or in a British colony. Exemption from Examination in Anatomy and Physiology is granted to candidates who have passed the Second Examination of the Examining Board in England or the corresponding Examination for any degree or qualification in Medicine or Surgery registrable under the Medical Act of 1886. Exemption from Examination in General Surgery and Pathology is granted to candidates who have passed the Examination in Surgery of the Examining Board in England or the corresponding Examinations of the Colleges and University above mentioned. The fee for the diploma is 20 guineas, and is payable as follows:—Preliminary Science Examination, 3 guineas; First Professional Examination, 2 guineas; Second Professional Examination, 5 guineas; the balance to be paid on the completion of the Examinations. The Preliminary Science Examination is held in January, March, or April, July, and September in each year. The First and Second Professional Examinations are held in May and November in each year. Candidates must give 21 clear days' notice of their intention to present themselves for examination. Synopses of examinations and all further information can be obtained from the Secretary, Examination Hall, Queen-square, Bloomsbury.

Royal College of Surgeons, Edinburgh.—For the Licence in Dental Surgery all candidates must pass a Preliminary Examination in General Knowledge and have their names inscribed in the Register of Dental Students of the General Medical Council. A copy of regulations giving a list of Preliminary Examinations recognised for obtaining this Licence, as well as of the subjects of the Professional Examinations, may be obtained from Mr. D. L. Eadie, Clerk to the Royal College of Surgeons, at 50, George-square, Edinburgh. Candidates must produce certificates of having, subsequently to the date of registration, been engaged for four years in professional studies and of three years' instruction in Mechanical Dentistry from a registered dental practitioner, except in the case of previously registered medical practitioners, when two years will be considered sufficient. Candidates must have attended the following curriculum: Anatomy, one course of six months; Practical Anatomy, twelve months; Chemistry, with Laboratory Instruction, one course of six months; Physics, with Laboratory Instruction, three months; Physiology, with Laboratory Instruction, one course of six months; Surgery, including Surgical Pathology, one course of six months; Medicine, including Medical Pathology, one course of six months; and attendance on the practice of a recognised general hospital, with Clinical Instruction on Surgery and Medicine, twelve months. These courses must have been attended at a University or in an established school of medicine or in a provincial school specially recognised by the College as qualifying for the Diploma in Surgery. In addition to these courses candidates will be required to have attended in a recognised dental hospital, or with teachers recognised by the College, the following special courses of lectures and instruction: Dental Anatomy and Physiology (Human and Comparative) (not less than 24 lectures), with Practical Dental Histology, three months; Dental Surgery and Pathology (not less than 20 lectures), with the Materia Medica and Therapeutics applicable to Dental Surgery, three months; Dental Mechanics (not less than 12 lectures), Theoretical and Practical, with Dental Metallurgy, three months—one course each; two years' attendance at a dental hospital or the dental department of a general hospital recognised by the College. Practical instruction in Mechanical Dentistry from a registered Dentist, or in the Mechanical Department of a recognised Dental Hospital and School, as apprentices or otherwise, either before or after registration, for *three* years. Certificates of attendance on such of these courses as may be respectively required will entitle candidates to appear either for the First Dental Examination or for the First and Second Examinations for the Triple Qualification, as they may select, and subject to the existing regulations for each qualification. Candidates who have passed the First and Second Examinations for the Triple Qualification will be exempt from the First Dental Examination, and will have the advantage of being admissible either to the Final Dental Examination or to the subsequent Examination for the Triple Qualification, or to both. But the First Dental Examination will not be held as equivalent to the First and Second Triple Examinations, and will admit to the Final Dental Examination only. Candidates who are Licentiates of this College or who may be registered medical practitioners will be required to produce certificates of attendance on the special subjects only and will be examined in these only for the dental diploma. First Professional Examination: The candidate must have attended the required courses. The examination embraces (1) Chemistry and Physics; and (2) Anatomy and Physiology. The fee is £5 5*s.* for the complete examination, and £3 3*s.* is payable for each division. In all cases of rejected candidates the fee for re-entry is £3 3*s.* Second Examination: The candidate must have attended the remaining courses of the curriculum, must produce certificates showing that he is 21 years of age, and must pay a fee of £10 10*s.*, for re-entry £5 5*s.* The examination embraces (1) Surgery and Medicine; and (2) the special subjects of Dental Anatomy and Physiology, Dental Surgery and Pathology, Dental Materia Medica, Dental Mechanics and Dental Metallurgy, with a practical as well as the written and oral examinations in the subjects of Dental and Oral Surgery, Pathology, and Mechanics. The candidate will be tested in the Treatment of Dental Diseases, in Operative Dentistry, the Administration of Anæsthetics, Orthodontics, and in Prosthetic and Mechanical Dentistry. Candidates who claim exemption from the First Dental Examination on the ground of having passed the First and Second Triple Qualification Examinations or other recognised examinations will, before being admitted to the Second Dental Examination, be required to pay the total fee of £15 15*s.* payable for the dental diploma. Fees and schedules must be lodged not later than one week before the examination with Mr. D. L. Eadie, 50, George-square, Edinburgh, Clerk to the College.

Royal Faculty of Physicians and Surgeons of Glasgow.—The regulations as to certificates, curriculum, number, and subjects of examinations, fees, &c., are in effect similar to those of the Royal College of Surgeons of Edinburgh, but embrace Dental Bacteriology. Candidates can enter for the First Examination in three divisions, the first embracing Physics and Chemistry, the second Dental Metallurgy and Dental Mechanics, and the third Anatomy and Physiology. The examination in Dental Mechanics is practical; and there is at the Final Examination an examination in Practical Dentistry conducted in a dental hospital.

Royal College of Surgeons in Ireland.—Candidates for the Licence in Dental Surgery are required to pass two professional examinations, and to produce the following certificates before admission to the several examinations:—

First Dental Examination.—(A) Of having attended courses of instruction in the following subjects at an institution recognised for the purpose: (*a*) Theoretical Chemistry (six months); (*b*) Practical Chemistry, including Metallurgy (three months); (*c*) Physics (six months). The courses for these certificates need not be completed within one year, nor need they run concurrently; and they may be commenced or attended before the candidate registers as a medical or dental student. (B) 1. Of having passed a recognised Preliminary Examination in general education, and of having been registered as a medical or dental student by the General Medical Council. 2. Of having, subsequently to registration as a dental or medical student, attended courses of instruction in the following subjects at a recognised school of medicine: (*a*) Anatomy Lectures. (*b*) Dissections with Demonstrations (the candidates must dissect the head and neck three times) (12 months). (*c*) Physiology, including Dental Physiology. Lectures (six months). (*d*) Practical Physiology and Histology, including Dental Physiology and Histology, Human and Comparative (three months).

Final Dental Examination.—1. Of having been engaged during a period of two years in acquiring a practical familiarity with the details of Mechanical Dentistry under the instruction of a registered dentist, or under the direction of the superintendent of the Mechanical Department of a recognised Dental Hospital where the arrangements for teaching Mechanical Dentistry are satisfactory to the Council of the College. This instruction may be commenced or attended before the candidate registers as a medical or dental student. 2. Of having passed the First Dental Examination. 3. Of having attended, at institutions recognised by the College for the purpose, the following courses of instruction: (*a*) Dental Surgery and Pathology, Orthodontia, and the Materia Medica and Therapeutics applicable to Dental Surgery. Lectures. Two courses. (*b*) Dental Mechanics. Lectures. Two courses. (*c*) Dental Anatomy. Lectures. One course. (*d*) The practice of a Dental Hospital, or of the Dental Department of a General Hospital. Two years. 4. Of having attended Clinical instructions at a recognised General Hospital during the ordinary teaching sessions (nine months). 5. Of having been engaged during four years in the acquirement of professional knowledge subsequently to the date of registration as a medical or dental student. One year's *bonâ fide* apprenticeship with a registered dental practitioner, after being registered as a medical or dental student, may be counted as one of the four years of professional study. 6. Of being 21 years of age. All certificates of instruction and evidences of age and registration shall be submitted at least seven days before the commencement of the examination to the Registrar of the College.

In the First Dental Examination candidates will be examined in (A) Physics and Chemistry, including Practical Chemistry and Metallurgy. (B) Anatomy, Physiology, and Histology—General and Dental. All the subjects may be passed at the same time, or they may be passed in two groups, (A) and (B). Before presenting themselves for examination in either group, candidates must have attended the required courses of instruction in the subjects of the group for which they present themselves. The examination is partly written, partly *vivâ voce*, and partly practical.

In the Final Dental Examination candidates will be examined in General Pathology, Medicine, and Surgery; Dental Surgery, and Dental Pathology, with the Materia Medica and Therapeutics applicable to Dental Surgery; Dental Mechanics and Metallurgy; Orthodontia. Candidates must pass in all the subjects at one examination. The examination is partly written, partly *vivâ voce*, and partly practical, and includes the examination of patients and the performance of dental operations. Candidates are required to provide their own instruments and gold for filling. The

First Dental Examination will commence on the first Mondays in the months of February, May, and November. The Final Dental Examination will commence on the second Mondays in the months of February, May, and November. The fee for the Diploma in Dental Surgery is 20 guineas, and is payable in the following manner—viz., First Dental Examination, Part (*a*), each admission, £3 3*s.*; Part (*b*) each admission, £4 4*s.*; Final, each admission, £5 5*s.*; amount payable before grant of Diploma, £8 8*s.*; total, £21. Fees for re-examination will not be allowed to count as part of the fee of £21 payable for the Diploma. Fees will not be refunded under any circumstances. Candidates must pay the fees for examinations from which they are exempted, unless when such exemptions have been granted in virtue of examinations passed before the Conjoint Board in Ireland.

University of Birmingham.—The teaching of Dentistry is undertaken by the University acting in association with the Birmingham Dental Hospital and the Birmingham Clinical Board. The instruction at the Dental Hospital is carried out under the direction of the University Dental Clinical Board, so that students may fully qualify themselves for the Dental Diploma (L.D.S.) of this and other universities and licensing bodies. There is a special and well-equipped Dental Museum and Laboratory. An Entrance Exhibition, value £37 10*s.* is awarded annually at the commencement of the winter session. The following are the regulations for Degrees in Dentistry:—1. The degrees conferred by the University are those of Bachelor and Master of Dental Surgery (B.D.S. and M.D.S.). 2. All candidates for these degrees must pass the same Matriculation Examination as that required from candidates for Medical Degrees. 3. The degree of Bachelor of Dental Surgery is not conferred upon any candidate who has not obtained a Licence in Dental Surgery. The candidate is not eligible for the degree until a period of 12 months has elapsed from the passing of his examination for the Licence in Dental Surgery. Of this period at least six months must be spent in the dental department of a general hospital approved by the University. 4. *A.* In addition to the Licence in Dental Surgery the candidate must produce evidence that he has attended the courses required by medical students of the University in the following subjects and passed the Examinations held in the same for Medical and Surgical Degrees: (*a*) Chemistry and Practical Chemistry, (*b*) Physics and Practical Physics, (*c*) Elementary Biology, (*d*) Anatomy and Practical Anatomy, and (*e*) Physiology and Practical Physiology. *B.* That he has attended the following courses and passed the class examinations in each of these subjects: (*f*) One Special Course of Lectures on Medicine, (*g*) One Special Course of Lectures on Surgery, and (*h*) Pathology and Bacteriology. *C.* That he has attended courses and passed the class examinations in: (*k*) Dental Histology and Patho-Histology, (*l*) Comparative Dental Anatomy, and (*m*) Dental Surgery and Prosthetic Dentistry. *D.* That he has received instruction in the Clinical Examination of living cases at the dental department of a general hospital for a period of not less than six months. 5. The Final Examination will deal with the subjects in Classes *C* and *D.* 6. On the expiration of 12 months from the date of passing the Examination for the Degree of Bachelor of Dental Surgery, the candidate will be eligible for that of Master of Dental Surgery. 7. For this degree candidates will be required to submit a thesis containing original work and investigations in some subject connected with Dentistry, which thesis shall be submitted to examiners to be nominated by the Dental Advisory Board. The degree will be awarded or withheld according to the report of these examiners.

University of Bristol.—Candidates for the degree of Bachelor of Dental Surgery must be not less than 21 years of age and shall have pursued the courses prescribed by University regulations during not less than five years, of which three shall have been passed in the University, and shall have been registered as dental students by the General Medical Council. All candidates for the degree of B.D.S. are required to satisfy the examiners in the several subjects of four examinations: the First Examination, the Second Examination, the Third Examination, and the Final Examination. The First Examination: The subjects are Chemistry, Physics, and Zoology, and the curriculum extends over one year. The Second Examination: The subjects are Dental Mechanics, Dental Metallurgy, and Dental Materia Medica, and the candidate shall produce evidence of having served for two years an approved pupilage in Dental Mechanics. The Third Examination: The subjects are Anatomy, Physiology, and Histology, Dental Anatomy, and Dental Histology. The Final Examination: The subjects are Medicine and Surgery, Dental Surgery (including Prosthetics), Operative Dental Surgery, and Dental Bacteriology. Degree of Master of Dental Surgery: Candidates shall be Bachelors of the University, shall present a Dissertation on some subject of Dental Surgery to be approved by the Examiners, and pass an examination in Dental Surgery. Diploma in Dental Surgery: Candidates need not be undergraduates, but shall be registered dental students before being admitted to any professional examination; the curriculum extends over four years. A two years' pupilage in Mechanical Dentistry is required, and four examinations must be passed the subjects of which differ only from those of the B.D.S. in that Zoology is not required for the First Examination, and Medicine is not required for the Final Examination. Candidates who are already registered medical practitioners shall be further exempted from study and examination in Physics and Chemistry, Anatomy, Physiology and Histology, Medicine, and General Surgery.

University of Durham.—A Licence in Dental Surgery is granted. The conditions are as follows:—Every candidate for the Licence must be registered as a dental student by the General Medical Council. There are four Examinations—viz., First, Second, Third, and Final. The subjects of the Examinations are:—*First:* (*a*) Chemistry; and (*b*) Physics. *Second:* (*a*) Dental Mechanics, Theoretical and Practical; (*b*) Dental Metallurgy. *Third:* (*a*) Anatomy; (*b*) Physiology and Histology; (*c*) Dental Anatomy and Dental Histology; and (*d*) Dental Materia Medica. *Final:* (*a*) Surgery; (*b*) Dental Surgery, including Prosthetics and Orthodontia; (*c*) Operative Dental Surgery, Practical Examination; and (*d*) Dental Pathology and Bacteriology. A candidate before presenting himself for examination is required to furnish certificates of instruction in the following subjects, attended after registration as a dental student at recognised Colleges or Schools:—*First Examination:* Chemistry, lectures and practical work (three terms); Physics, lectures and practical work (three terms). *Second Examination:* Dental Mechanics (not less than 20 lectures); Dental Metallurgy (not less than 12 lectures and 30 hours' practical work). *Third Examination:* Anatomy (two terms); Dissections (four terms); Physiology (two terms); Histology (one term); Dental Anatomy and Physiology (not less than 20 lectures); and Dental Histology (not less than 12 lectures); Dental Materia Medica (not less than 12 lectures). *Final Examination:* Dental Hospital Practice (two years); General Hospital Practice (nine months); Medicine Lectures (two terms); Surgery Lectures (two terms); Dental Surgery and Pathology (a course of not less than 20 lectures); Dental Bacteriology (not less than 12 lectures); Operative Dental Surgery (not less than 12 lectures); and Anæsthetics (a course of not less than one month).

Before admission to the Final Examination each candidate must furnish evidence (1) of having attained the age of 21 years; (2) of having undergone a three years' pupilage in Mechanical Dentistry with a registered dentist; and (3) of having been engaged in professional study for at least four years subsequent to registration as a dental student. He must also sign such declaration as the University may determine, binding himself not to advertise for professional purposes. The examinations will be held concurrently with the medical examinations, and the fees payable by candidates are as follows: First Examination, £2 10*s.*; Second Examination, £2 10*s.*; Third Examination, £3 10*s.*; Final Examination, £3 10*s.*; fee for Licence, £3; total, £15. For re-examination: First Examination, £1 10*s.*; Second Examination, £2; Third Examination, £2 (in one part only, £1); Fourth Examination, £2. The practical examinations in dentistry will be conducted at the Newcastle Dental Hospital.

Lectures given at the University of Durham College of Medicine and Armstrong College of Science for the Dental Course: Medicine, Professor Sir G. H. Philipson, Professor Sir Thomas Oliver, and Professor David Drummond; Surgery, Professor J. R. Morison, Professor H. B. Angus, and Mr. G. Grey Turner; Anatomy, Professor R. Howden; Physiology, Professor F. A. Bainbridge; Practical Histology, Professor

F. A. Bainbridge and Dr. J. A. Menzies; Dental Bacteriology, Professor H. J. Hutchens; Chemistry (Theoretical and Practical), Professor P. P. Bedson; and Physics (Theoretical and Practical), Professor H. Stroud.

University of Leeds.—The degrees in Dental Surgery are Bachelor of Dental Surgery (B.Ch.D.) and Master of Dental Surgery (M.Ch.D.). All candidates for the degree of Bachelor of Dental Surgery shall be required to have passed the Matriculation Examination, to have pursued thereafter approved courses of study for not less than five academic years, two of such years at least having been passed in the University subsequently to the date of passing Parts I. and II. of the First examination, and to have completed such period of pupilage or hospital attendance, or both, as may be prescribed by the regulations of the University. No candidate will be admitted to the degree who has not attained the age of 21 years on the day of graduation. All candidates are required to have passed the following examinations: the First Examination, the Second Examination, and the Final Examination. Each examination will include practical work in the subjects offered. All candidates shall be required, before presenting themselves for examination, to furnish certificates testifying that they have attended the prescribed courses of instruction in accordance with the regulations of the University in each of the subjects which they offer, and that they have fulfilled the other requirements of the ordinance and regulations in respect of such examination. Candidates for the Diploma in Dental Surgery (L.D.S.) are required to present certificates showing that they have attained the age of 21 years, that they have attended courses of instruction approved by the University, extending over not less than four years, and that they have completed a pupilage of three years, two of such years at least having been taken before the First Professional Examination. Candidates are required to satisfy the examiners in the several subjects of the following examinations: A preliminary examination in Arts; a preliminary examination in Science; the First Professional Examination; and the Final Examination The classes in the Department of Dentistry will begin on Oct. 1st. The instruction in the Preliminary subjects of Chemistry, Physics, and Biology will be given at the University in College-road. The classes in the other subjects and the systematic courses in Dental subjects will be held in the School of Medicine of the University in Thoresby-place. The systematic instruction in the School of Dentistry will be given by the following: Anatomy: Professor J. K. Jamieson. Physiology: Professor de B. Birch. Pathology: Professor A. S. Grünbaum. Medicine: Professor T. W. Griffith. Surgery: Professor R. L. Knaggs. Dental Surgery: Mr. A. G. G. Plumley. Operative Dental Surgery: Mr. S. D. Hey. Dental Anatomy and Physiology: Mr. A. Alan Forty. Dental Mechanics: Mr. C. Rippon. Dental Metallurgy: Mr. W. Lowson. Dental Materia Medica: Mr. J. H. Gough. The clinical instruction will be given in the Dental Department of the Leeds Public Dispensary, which is recognised by the University and by the Royal College of Surgeons. Applications for the prospectus should be made to the Dean of the Faculty of Medicine.

University of Liverpool (*Liverpool Dental Hospital and School of Dental Surgery*).—The University grants a diploma in Dental Surgery (L.D.S.) and degrees in Dental Surgery (B.D.S. and M.D.S.). The courses of systematic instruction are given in the University buildings, five minutes' walk from the Dental Hospital. The two institutions are now closely associated, and the management of the curriculum is in the hands of the Board of Dental Studies. This school offers advantages to students which are not excelled anywhere for their practical nature. The Dental Hospital, covering a site of 672 square yards, was opened in March, 1910, equipped in each department with every modern accessory. The ground floor contains a large waiting-hall, examination room, extraction and anæsthetic rooms, with special waiting and recovery rooms for each, staff room, and special room for nurses. A large lecture hall with library and museum, prosthetic room adjoining a lofty and well-lighted laboratory divided into special rooms to accommodate over 30 pupils, and smaller laboratory for advanced students, plaster and smelting rooms, are situated on the first floor. The whole of the top floor (470 square yards) is devoted to conservation work, and lighted entirely from the north, and contains 50 pump operating chairs, each provided with water-flushed spittoons, brackets, and electric light. Provision is also made for the use of electric motors. Portions are reserved for porcelain inlay work, orthodontia, and the use of the demonstrator. The students' room, with cloak room and lavatories, is placed in the mezzanine immediately below the conservation (filling) room, and provision is made in the basement for cycles. The whole of the building is heated by hot-water pipes and radiators, and specially ventilated and lighted throughout by electricity. The laboratory is in charge of a skilled dental mechanic under the supervision of the Warden, and students are able to undertake at the hospital the whole of their training in Mechanical Dentistry. The times of the lectures at the University are arranged to meet the convenience of students, thus allowing the maximum time for attendance upon Dental Hospital practice. The staff of the hospital includes 12 honorary Dental Surgeons, a Demonstrator, six Anæsthetists, two House Surgeons, and a Curator. Fees: The composition fees are as follows: Diploma course (L.D.S.): Composition fee £58 10*s.*, for diploma course of other licensing bodies £61 10*s.*, payable in two equal instalments, the first on entry, the second 12 months later. Two years' instruction in Mechanical Dentistry (pupilage) and two years' Dental Hospital Practice (combined), £100. Degree course (B.D.S.): £67 10*s.* for all lectures (including Chemistry, Physics, and Zoology) in three instalments. Two years' dental hospital, £21; general hospital practice, £10 10*s.*; three years' mechanical instruction (pupilage), £105. Further information may be had from the Warden, Mr. W. H. Gilmour.

University of Manchester.—In the University of Manchester the Dental Department forms an integral part of the Faculty of Medicine. This contains a series of laboratories, lecture rooms, and museums which will bear comparison with those of any other school in the kingdom, and the fullest opportunities for study are offered to students preparing for any of the professional examinations. Instruction adapted to the requirements of students preparing for the B.D.S. Degree and the Dental Diplomas of the University, the Royal College of Surgeons of England, and of other licensing bodies is given during the Winter and Summer Sessions both at the University and at the Dental Hospital of Manchester in Oxford-street. The required general hospital practice is taken at the Manchester Royal Infirmary. Women students are admitted to the classes in the Dental Department, and for them common rooms are provided. The composition fee for candidates for the University degree of Bachelor of Dental Surgery is 60 guineas, payable in two equal instalments at the beginning of the first and third years of studentship. The composition fee for candidates for the University Diploma in Dentistry is 55 guineas, payable in two equal instalments at the beginning of the first and third years of studentship. The composition fee for candidates for the L.D.S. of England is 60 guineas, payable in two equal instalments at the beginning of the first and third years of studentship. Students who have already served their apprenticeship with a private practitioner, and who propose to complete the final portion of their attendance at the University and at an approved dental hospital, will be required to pay the composition fee in two equal instalments at the commencement of the first and second years of studentship. The composition fee does not include the hospital fees, the examination fees, the fee for the conferment of the degree or the diploma, the registration fee, nor the fees for chemicals and chemical apparatus.

**National University of Ireland.*—This University grants the degrees of Bachelor of Dental Surgery and a degree of Master of Dental Surgery. A student may not be admitted to the Degree of Bachelor of Dental Surgery unless a period of not less than four years shall have elapsed from the date of his matriculation, during which period he must have pursued an approved course of study of not less than nine terms. For the degree of Bachelor of Dental Surgery candidates must pass four examinations, the first two being the same as those for the first and second examination in Medicine. The subjects of the third examination are Dental and Practical Pathology, Dental Surgery and Dental Medicine, the subjects of the fourth being Dental Surgery and Pathology, Dental Mechanics, Operative Dentistry, Orthodontia, and Dental Materia Medica. A candidate for the degree of B.D.S. must produce evidence of apprenticeship to a registered dentist for a period of two years. A portion of or the entire period may be served before commencing study for the degree of B.D.S., but no portion so taken prior to commencement of study shall count as part of the four years of Dental Study. The degree of Master of Dental Surgery will not be granted until three years after the B.D.S. has been obtained.

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* No returns.

TEACHING INSTITUTIONS IN DENTISTRY.

See also under Universities of Birmingham, Leeds, Liverpool, and Manchester above.

LONDON.

Royal Dental Hospital of London, School of Dental Surgery, Leicester-square.—A school of the University of London.—The school provides the special dental education required by the Royal College of Surgeons for the Licence in Dental Surgery. The general part of the curriculum may be taken at any general hospital. The hospital is open from 9 A.M. to 5 P.M., there being one staff for the morning and another for the afternoon of each day. Pupils are received for the training in dental mechanics recognised by the curriculum. The demonstrators at the commencement of each session give a course of lectures on Operative Dental Surgery. The six house surgeoncies are held for six months each and are open to all qualified students. The lecturers, in addition to their lectures, give special demonstrations on the Microscopy of Dental Anatomy and Dental Surgery. The lecturer on Dental Mechanics also gives practical demonstrations in the laboratory. There are two Entrance Scholarships in Chemistry and Physics of the value of £50 and £25 respectively. One Entrance Scholarship in Dental Mechanics and Metallurgy value £25, open to pupils of the Hospital only. One Entrance Scholarship of £25 in Dental Mechanics, open to pupils of private practitioners. The Saunders Scholarship of £20 awarded to second year students. The Storer Bennett Research Scholarship for Scientific Research in any branch of Dental Surgery, value £50, is awarded triennially. The Alfred Woodhouse Scholarship of £35 and the Robert Woodhouse Prize of £10 for Practical Dental Surgery. Prizes and certificates are awarded by the lecturers for the best examinations in the subjects of their respective courses, at the end of the summer and winter sessions. Consulting Physician: Sir Richard Douglas Powell, Bart. Consulting Surgeon: Sir Frederick Treves, Bart. Consulting Dental Surgeons: Mr. Morton Smale and Mr. C. S. Tomes, F.R.S. Dental Surgeons: Mr. J. F. Colyer, Mr. W. H. Dolamore, Mr. J. G. Turner, Mr. N. G. Bennett, Mr. D. P. Gabell, and Mr. H. Austen. Assistant Dental Surgeons: Mr. R. McKay, Mr. W. W. James, Mr. F. Coleman, Mr. Landon Whitehouse, and Mr. F. St. J. Steadman. Anæsthetists: Dr. Dudley Buxton and Mr. H. Hilliard. Assistant Anæsthetists: Mr. F. Trewby and Mr. C. Loosely. Demonstrators: Mr. A. T. Pitts, Mr. H. Stobie, Mr. R. M. Fickling, Mr. J. F. Gow, Mr. B. Grellier, and Mr. E. L. Fickling. Lecturers:—Dental Anatomy and Physiology (Human and Comparative): Dr. Marett Tims. Dental Surgery and Pathology: Mr. J. G. Turner. Operative Dental Surgery: Mr. W. W. James. Dental Mechanics: Mr. D. P. Gabell. Metallurgy in its application to Dental Purposes: Mr. P. A. Ellis Richards. Dental Bacteriology: Dr. W. J. Penfold. Dental Materia Medica: Mr. F. Coleman. Chemistry: Mr. P. A. Ellis Richards. Physics: Mr. John A. Carpenter. Anæsthetics: Dr. Dudley Buxton. During the sessions the surgeons of the day will give demonstrations at stated hours. The house surgeons attend daily while the hospital is open. Fee for two years' hospital practice required by the curriculum, including lectures, £53 3*s*. in one payment, or £55 13*s*. in two yearly instalments. The curriculum requires two years to be passed at a General Hospital; the fee for this is about £60. Both hospitals can be attended simultaneously. For the lectures in Chemistry and Physics for the Preliminary Science Examination £10 10*s*. The fee for the instruction in Dental Mechanics and the two years' hospital practice required by the curriculum is £150 if paid in one instalment, or 150 guineas if paid in three equal instalments. The fee for tuition in Dental Mechanics is 50 guineas per annum; for one year's hospital practice £21. The Dean attends at the hospital every Thursday morning from 9.45 to 11 o'clock, or he can be seen at other times by appointment. Letters to be addressed—The Dean, 32, Leicester-square. The Winter Session opens on Oct. 1st.

National Dental Hospital and College: The Dental Department of University College Hospital.—Corner of Great Portland and Devonshire-streets, W.—Students are entered as students of University College Hospital and, as such, attend the classes of Chemistry, Physics, Anatomy, and Physiology in University College, which is a few minutes' walk from the Dental Department in Great Portland-street, hitherto known as the National Dental Hospital. Consulting Dental Surgeon: Mr. Sidney Spokes. Dental Surgeons: Mr. K. W. Goadby, Mr. H. R. Pring, Mr. A. E. Relph, Mr. H. Creemer Cooper, and Mr. F. R. Smyth. Assistant Dental Surgeons: Mr. Arthur E. Ironside and Mr. F. E. Sprawson. Anæsthetists: Mr. C. J. Ogle, Dr. J. Maughan, Mr. P. H. Parsons, Mr. R. E. Delbruck, and Mr. H. M. Pinto-Leite. Lecturers:—Dental Anatomy and Physiology: Dr. J. W. Pare, Tuesdays and Thursdays, 5 P.M., in October, November, and December. Dental Metallurgy: Tuesdays, 5 P.M., in January, February, and March, and May, June, and July. Dental Mechanics: Mr. S. Holloway Olver, Wednesdays, 5.30 P.M., in May, June, and July, and October, November, and December. Operative Dental Surgery: Mr. A. E. Relph, Thursdays in January, February, and March. Dental Materia Medica: Mr. F. R. Smyth, Tuesdays, 6 P.M., October, November, and December. Dental Surgery and Pathology: Mr. H. J. Relph, Thursdays, 5 P.M., during January, February, and March. Bacteriology of the Mouth: Mr. K. W. Goadby, Tuesdays, 4 P.M., during May, June, and July. Practical courses to comply with the R.C.S. curriculum are also held. The hospital is lighted throughout by electricity and warmed and ventilated by approved methods. Clinical Lectures and Demonstrations are given, and each student on entering passes through a preliminary course under a demonstrator. The stopping rooms have accommodation for 50 chairs. Dresserships in the extraction and stopping rooms are re-arranged every three months. Two Entrance Exhibitions, of the value of £40 and £20, are open for competition. Prizes are open for competition at the end of each course of lectures. Certificates of honour are also open in each class. The Rymer Medal for General Proficiency, value £5, is awarded annually to the most meritorious student; and the Ash Prize, value £3 3*s*., for a Thesis on a subject in Dental Surgery. Total fee for the Lectures and Hospital Practice required is £40 for medical men. A composition fee covering the two years' mechanical pupilage and the two years' dental hospital practice and lectures required by the Royal College of Surgeons, £120. Single Courses: Dental Anatomy and Physiology, Dental Surgery and Pathology, Dental Mechanics, Dental Metallurgy, Bacteriology of the Mouth, Dental Materia Medica, Demonstration of Dental Mechanics, £5 5*s*. each. Hospital Practice to registered practitioners by special permission of Committee, 12 months, £15 15*s*. Information respecting the Hospital Practice and the College may be obtained from the Dean, Mr. Sidney Spokes, who attends at the Hospital, Great Portland-street, on Tuesday mornings.

Guy's Hospital.—The work of the Dental Department begins daily at 9 A.M. both in the extraction rooms and in the conservation room. The Extraction Rooms: A new Dental Out-patient Department has been provided. There is ample accommodation for ordinary extractions and anæsthetic extractions, together with waiting- and retiring-rooms. Patients are admitted between 8.45 and 9.30 A.M., and are seen by the dental surgeon for the day, the dental house surgeon, the assistant dental house surgeon, and the dressers. Such patients as are suitable for conservative treatment are transferred to the conservation room. The Conservation Room: This room is open from 9 A.M. till 5 P.M. It has recently been entirely remodelled and greatly enlarged, giving a floor space of over 6000 square feet. It affords accommodation for about 100 dental chairs, with the necessary equipment of the most modern type, for the use of the Dressers, who, under the supervision of the Staff, perform the various operations of Dental Surgery. The members of the staff attend every morning and afternoon to give demonstrations and otherwise assist students in their work in the Conservation Room and Mechanical Laboratory. The Probationers' Laboratory is supervised by two of the staff demonstrators, and instruction is given in operative dentistry on a "mannikin" to students during their first three months of study. Pupils in Dental Mechanics are received, and a graded, systematic, and full course of instruction, extending over two years, is carried out. The control and supervision of the Pupils' Laboratory is in the hands of the following staff: The Demonstrator of Dental Mechanics, Two Staff Demonstrators of Prosthetic Dentistry, Three Skilled Mechanics and their Assistants. Dental students have the opportunity of attending at this hospital the whole course of instruction required by the examining board for the L.D.S. Eng.—viz., two years' pupilage in dental mechanics, the special lectures and practice of the Dental Department, and the general lectures and practice of the Medical School. The fees for these two courses may be paid separately or together, or they may be combined with the fees required to be paid for the course for a medical diploma. Students who enter for a medical as well as a dental diploma are allowed to pursue their study of Dentistry during any period of their medical course most convenient to themselves without further charge. Four Entrance Scholarships in Dental Mechanics of the value of £20 each are offered for competition annually, two in September and two in April, and prizes of the aggregate value of £47 are awarded for general proficiency and for skill in Practical Dentistry. A Dental Travelling Scholarship of the value of £100 is awarded every second year. Dental students are eligible for admission to the Residential College and enjoy the privileges of students in the Medical School. Staff.—Consulting Dental Surgeons: Mr. F. Newland-Pedley and Mr. W. A. Maggs. Dental Surgeons: Mr. Wynne Rouw, Mr. H. L. Pillin, Mr. M. F. Hopson, and Mr. J. B. Parfitt. Assistant Dental Surgeons: Mr. J. Lewin Payne, Mr. E. B. Dowsett, Mr. F. J. Pearce, and Mr. H. C. Malleson. Demonstrators of Practical Dentistry: Mr. F. N. Doubleday, Mr. G. B. Pritchard, Mr. W. S. Stranach, and Mr. L. Price Harris. Demonstrator of Orthodontic Dentistry: Mr. F. Bocquet Bull. Demonstrators of Prosthetic Dentistry: Mr. W. K. Fry and Mr. H. L. Messenger. Anæsthetists: Mr. C. J. Ogle, Dr. F. E. Shipway, Mr. H. M. Page, H. T. Depree, M.B., B.C., R. C. Ozanne, M.B., B.Ch., and G. T. Mullally, M.B., B.S. Lecturers:—Dental Anatomy and Physiology: Mr. Hopson. Dental Surgery and Pathology: Mr. Wynne Rouw, Operative Dental Surgery: Mr. Parfitt. Dental Mechanics: Mr. Payne. Practical Dental Mechanics: Mr. Pillin. Dental Bacteriology: Dr. Eyre. Dental Microscopy: Mr. Dowsett and G. Marshall, M.B. B.S. Metallurgy: Dr. J. M. Lowry. Practical Dental Metallurgy: Mr. Pearce. Resident Dental Officer: Mr. F. Bocquet Bull. Curator of Dental Museum: Mr. Dowsett. For Lectures on the general subjects of Dental Curriculum *vide* Guy's Medical School. Dean: Dr. Cameron.

London Hospital.—This school is a part of the London Hospital and Medical College, and is fully equipped on the most modern lines and with the latest appliances. It provides a complete curriculum in all subjects for the L.D.S. Diploma, and is admirably adapted for the purpose of teaching. The Conservation Room is well lighted and ventilated and fitted with pump chairs of the latest pattern; the fountain spittoon at every chair has been specially designed and has attached to it a saliva ejector, hot and cold water, compressed air, gas and electric current, also a swing bracket to carry the students' cabinet. Electric sterilisers are supplied in each department and motor engines where required. The School possesses in addition to the Theatres, Laboratories and Museums in the College, a special Museum of Dental Anatomy and Surgery, Operative Dentistry, Prosthetic and Extraction Rooms, and Laboratories for Practical Dental Metallurgy and Dental Prosthesis. A systematic course of instruction in Dental Prosthesis is arranged for pupils. The up-to-date Laboratory contains every modern apparatus and is in charge of a skilled curator and his assistants. Connected with the Medical College and Dental School are a Library, Athenæum, Clubs' Union, Dining Hall with moderate tariff, Students' Hostel, and an Athletic Ground. Lecturers:—Chemistry and Dental Metallurgy: Hugh Candy, B.A., B.Sc. Physics: A. H. Fison, D Sc. Human Anatomy: Professor William Wright, M.B., D.Sc., F.R.C.S. Physiology: Professor Leonard Hill, M.B., F.R.S. Dental Surgery and Pathology: F. M. Farmer, L.D.S. Operative Dental Surgery: George Northcroft, L.D.S., D.D.S. Mich. Dental Prosthesis: Wilton Thew, L.D.S. Operative Dental Prosthesis: G. Paton Pollitt, L.D.S., D.D.S. Penn. Odonto-phosopic Orthopædics: Harold Chapman, L.D.S., D.D.S. Penn. Dental Anatomy: Professor William Wright, M.B., D.Sc., F.R.C.S. Dental Microscopy: Evelyn Sprawson, M.R.C.S., L.R.C.P., L.D.S. Dental Bacteriology: Professor William Bulloch, M.D., C.M., F.R.S. Dental Materia Medica: Otto Grünbaum, M.D., D.Sc., F.R.C.P., and F. A. Hocking, B.Sc. Lond. Dental Anæsthetics: R. J. Probyn-Williams, M.D. For full particulars as to fees and course of study advised apply to the Dean (Professor William Wright, M.B., D.Sc., F.R.C.S.), who will be glad to make arrangements for anyone wishing to see the Dental School and Medical College.

London (Royal Free Hospital) School of Medicine for Women.—Full courses are arranged for women students for the study of dentistry, and in preparation for the Licence in Dental Surgery of the Royal College of Surgeons of England, at the London (Royal Free Hospital) School of Medicine for Women, and the National Dental Hospital, Great Portland-street, W. The course is arranged as follows: First and second years: Chemistry, Physics, and Mechanical Dentistry. Third, fourth, and fifth years: Anatomy, Physiology, and Special Dental Courses, Courses in Medicine and Surgery, General Hospital Course, Dental Hospital Course. The combined fees at the London School of Medicine for Women and the National Dental Hospital are £180 if paid in one sum on beginning the course, or £191 if paid in three annual instalments. Bursary: The Council of the School will award annually (until further notice) an "Agnes Guthrie" Bursary of the value of £60 to a student fulfilling the required conditions, who enters for the full dental course. The first award will be made at the end of September for the course beginning in October. Candidates for the Bursary are required to send in applications on or before Sept. 15th, to the secretary and warden, from whom a prospectus of the School and all particulars can be obtained.

PROVINCIAL.

Birmingham Dental Hospital.—The Dental Hospital was founded in 1858, and was recognised by the Royal College of Surgeons in 1880 for the teaching of Dental Students. Having an annual attendance of about 16,000 patients, it affords every advantage for students about to enter the profession to acquire a thorough practical knowledge, as required by the Medical Council. The present Hospital was opened on July 6th, 1905. It has accommodation for 50 students. The equipment is in accordance with the most modern requirements for the efficient teaching and practice of Dental Surgery. The operations performed annually average nearly 35,000, including 5000 gold and other fillings, and many cases of crowns, bridges, porcelain inlays, and regulations. By arrangements with the Birmingham University and with the General and Queen's Hospitals the entire course of Lectures, Hospital Practice, &c., may be completed for an inclusive fee of £96 15*s.*, or including Mechanical Pupilage, £186. The instruments and materials necessary for Hospital Practice cost about £28. The Composition Fee for the courses required for the L.D.S. of the University, or any of the Corporations alone, is £60, payable in two annual instalments at the commencement of the first and second years; that for the courses required for the L.D.S. and the Degree in Dentistry of the University is £75; that for the L.D.S. in combination with the M.R.C.S. and L.R.C.P. is £85; and that for the M.B., Ch.B., and B.D.S. is £95. All of these composition fees are payable in two annual instalments at the commencement of the first and second years. Each of these fees covers the cost of the courses given at the University for the qualifications indicated, but does not include fees for Hospital teaching. For two years' dental hospital practice the fee is 20 guineas, payable in two instalments of 10 guineas each at the commencement of the first and second (hospital) years respectively. For two years' mechanical pupilage, 85 guineas, which may be paid in two annual instalments of 50 and 35 guineas respectively; mechanical pupils may join for a probationary period of one month, fee 5 guineas, which is deducted upon payment of the full amount. For general surgical hospital practice, lectures, and demonstrations: Surgery, two winters, £10 10*s.* One Entrance Scholarship is offered annually of the value of £37 10*s.* It is awarded to the student who, entering for the Dental Degree of the University in October, or having entered not earlier than the previous April, shall pass the best examination in the subjects studied during his apprenticeship. Candidates must be under the age of 21 years. Application for admission, together with a certificate of birth, must be sent to the Dean of the Medical Faculty on or before Oct. 15th. Staff:—Dean: Mr. W. Thompson Madin. Consulting Physician: Sir Robert Simon. Consulting Surgeon: Mr. Haslam. Consulting Dental Surgeon: Mr. Frank E. Huxley. Dental Surgeons: Mr. F. W. Richards, Mr. F. H. Goffe, Mr. A. E. Donagan, Mr. J. Mountford, Mr. W. T. Madin, Mr. J. E. Parrott, Mr. W. M. Knott, and Mr. G. F. Cale-Matthews. Assistant Dental Surgeons: Mr. A. H. Parrott, Mr. C. H. Howkins, Mr. S. H. Roe, Mr. A. W. Wellings, Mr. W. Bowater, and Mr. Harold Round. Orthodontics Officer: Mr. G. F. Cale-Matthews. Anæsthetists: Dr. S. W. Haynes, Dr. W. J. McCardie, Mr. R. H. Rollinson Whitaker, Dr. R. W. Taylor Haddow, Mr. L. Kirkby Thomas, Mr. H. Ewan Waller, and Mr. G. W. Craig. Demonstrators: Dr. Humphrey F. Humphreys, Mr. N. A. Austin, and Dr. R. A. Broderick. Stipendiary Dental Surgeon: Mr. C. W. Randall. House Surgeon: Mr. R. L. Booth. Prosthetic Department: Mr. W. M. Knott and Mr. S. H. Roe. Demonstrator in Orthodontics: (vacant).

Leeds Public Dispensary.—The Dental Department of the Leeds Public Dispensary is fully equipped to provide dental treatment for the necessitous poor and training for Dental Students, and affords every opportunity for the student to prepare for any of the Dental Degrees or Diplomas. The department contains a suite of large, well-lighted rooms, in which every modern appliance has been called into requisition in its equipment. The Demonstrator of Operative Dental Surgery instructs students during their probationary course. At the completion of this training students have patients allotted to them by the Demonstrator, and have every opportunity of acquiring knowledge from the members of the Staff, two of whom are in attendance each day. The following prizes are awarded:—First-year Students, value 2 guineas. The examination is partly written, practical and oral—the practical part involving the treatment of teeth by filling and extraction. Operative Dental Surgery Prize, value 5 guineas. The examination includes the treatment of a mouth by crowns, inlays, and fillings. Two prizes in Prosthetic Dentistry: (*a*) a prize, value 2 guineas, for first-year pupils; (*b*) a prize, value 5 guineas, open for competition to both Students and second year pupils. A prize, value 2 guineas, is offered to first and second years' Students for proficiency in the extraction of teeth. A prize in Orthodontics, value 5 guineas, is open to all students. Dental Staff:—Consulting Dental Surgeon: Mr. Frederick Sherburn. Dental Surgeons: Mr. Percival T. Leigh, Mr. Walter Marston, Mr. A. G. G. Plumley, Mr. Stephen D. Hey. Mr. David Saville, and Mr. J. Newsome Taylor. Assistant Dental Surgeons: Mr. James W. Mawer, Mr. Geoffrey A. Phillips, Mr. J. K. Crawford, Mr. W. S. Thorburn, Mr. Harold R. Bentley, and Mr. Sidney H. Hole. Anæsthetists: Dr. F. Whalley and Mr. E. Wrigley Braithwaite. Demonstrator and Tutor: Mr. C. H. Oliver. Curator of Dental Museum: Dr. A. G. G. Plumley. House Surgeon: Mr. C. H. Child. Instructor of Dental Mechanics: Mr. C. E. Foster. Assistant Instructor: Mr. T. G. Green.

Dental Hospital of Manchester.—This Hospital is in association for teaching purposes with the University of Manchester and the Royal Infirmary, and is in the centre of a very large population. Courses of study are provided to meet the requirements of the various examining bodies, including those of the University of Manchester for the qualifications L.D.S. and B.D.S., and the L.D.S. of the Royal College of Surgeons of England. Clinical instruction is given by the members of the staff and by the house surgeons and demonstrators, and also by the honorary anæsthetists in the administration of nitrous oxide gas; a special class in anæsthetics is conducted by the clinical tutor in that subject. A class for instruction in porcelain and gold inlay work is conducted by the demonstrator specially appointed for that work.

A Travelling Scholarship, value £100, will be awarded from time to time

Prizes.—The following prizes are awarded annually. The Fletcher Prizes consist of a first prize, value £8, for second year's men, and a second prize, value £2, for first year's men. The operating prize, value £3 3*s*. A prize, value £2 2*s*., is given by Messrs. Ash and Sons, Limited, for the best essay on some subject in general surgery in connexion with the teeth. Two prizes, value £1 1*s*. and £2 2*s*. are offered respectively to first and second years' men for proficiency in the extraction of teeth. A prize, value £2 2*s*., is also given for the best series of orthodontic cases treated during the year. A prize, value £2 2*s*., for conservative dentistry. Two prizes, value £3 3*s*. and £2 2*s*. are open to pupils in the Prosthetic Department.

Fees.—For the whole course of hospital instruction for the L.D.S. (including two years' mechanical training) is £100, or if paid in instalments, £105. For the two years' Operative Course only, £21, or if paid in two instalments, 21 guineas. For the whole course of hospital instruction for the B.D.S. degree (including mechanical training), £130, or if paid in instalments, 130 guineas. Additional practice in Dental Mechanics may be taken by pupils who have already received their mechanical training elsewhere, at a fee of £20 for six months.

Women students are admitted to the practice of the hospital.

Staff.—Consulting Physician: Dr. J. J. Cox. Consulting Surgeon: Mr. J. Howson Ray. Consulting Dental Surgeons: Mr. I. Renshaw, Mr. Thomas Tanner, and Mr. W. Dykes. Dental Surgeons: Mr. G. G. Campion, Mr. J. W. Dunkerley, Mr. J. W. Gibbons, Mr. W. A. Hooton, Mr. D. Headridge, Mr. P. A. Linnell, Mr. J. Hilditch Mathews, Mr. H. W. Norman, Dr. C. H. Preston, Mr. T. E. Sherratt, Mr. William Simms, Mr. J. Stephenson, Mr. J. Theakston, and Mr. G. O. Whittaker. Assistant Dental Surgeons: Mr. S. S. Doran, Mr. T. Dykes, Mr. R. Howard, Mr. Felix Rawsthorne, and Dr. H. Simms. Anæsthetists: Mr. A. Wilson, Mr. W. B. Pritchard, Mr. S. R. Wilson, and Mr. E. Moir. Prosthetic Dental Surgeons: Mr. Wm. Simms and Mr. J. Stephenson. Clinical Tutor in Anæsthetics: Mr. S. R. Wilson. Demonstrators in Operative Dental Surgery: Mr. A. C. W. Hutchinson, Miss Kate Latarche, Mr. H. V. Brown, and Mr. H. Walker. Demonstrator in Orthodontics: Mr. O. R. Allison. Demonstrator in Dental Prosthetics: Mr. F. B. Preston. Instructor in Dental Mechanics: Mr. H. W. Fillan. Assistant Instructor: Mr. S. H. Manihon. Tutor: Dr. C. H. Preston. Curator of Museum: Dr. C. H. Preston.

Copies of the Prospectus will be forwarded on application to Mr. J. Hilditch Mathews, Dean.

Newcastle-upon-Tyne Dental Hospital and School.—This Hospital is centrally situated (within five minutes of the various colleges, infirmary, and railway station); the rooms are well lighted and thoroughly equipped for carrying on the work. Dental surgeons and an anæsthetist attend each morning and give demonstrations on the various methods of treatment, &c. A tutorial dental surgeon is also in attendance. The Composition Fee for the special Dental Lectures, Demonstrations, and Dental Hospital Practice is £43 1*s*. if paid in one sum, or £44 2*s*. if paid in two instalments of £22 1*s*. The Composition Fee for the Lectures at the Colleges of Medicine and Science is 40 guineas; in addition to this there is a library and an athletic fee. Particulars of the fee for General Hospital Practice may be obtained from the Senior House Physician, Royal Victoria Infirmary, Newcastle-upon-Tyne. Medals and Certificates of Merit are granted to students showing certain standards of proficiency in the various classes at the Dental School. Lecturers:—Dental Anatomy and Physiology: Mr. E. Y. Richardson. Dental Surgery and Pathology: Mr. J. Coltman. Operative Dental Surgery: Mr. T. R. D. Walkinshaw. Dental Histology: Mr. C. L. Routledge. Dental Mechanics: Mr. J. W. Daniels. Dental Materia Medica: Mr. J. Bolam. Dental Metallurgy: Mr. C. Lotinga. Orthodontia: Mr. L. M. Markham. Dental Anæsthetics: Dr. W. E. Alderson. The prospectus of the Dental Hospital and School, containing full information, may be obtained from either Mr. J. T. Jameson, 12, Windsor-crescent, Newcastle-upon-Tyne, Dean, or Mr. James Coltman, 13, Ellison-place, Newcastle-upon-Tyne, Vice-Dean.

University of Sheffield.—Specially and beautifully fitted rooms have been provided for the Dental Lectures in the medical block. Dental students are able to take full advantage of the teaching of the various departments of the University concerned in their special teaching. A course of Practical Demonstrations in Dental Histology and Pathology has been added. Composition Fee for the Lectures, £30.

The Dental School forms part of the University of Sheffield. Professors and Lecturers:—Dental Metallurgy: Mr. F. K. Knowles and Mr. F. Ibbotson. Dental Mechanics: Mr. H. James Morris. Dental Anatomy and Physiology: Mr. W. J. Law. Dental Surgery and Pathology: Mr. F. G. Mordaunt. Dental Histology: Mr. W. J. Law. Dental Bacteriology: Professor H. R. Dean and Dr. H. G. M. Henry. Dental Materia Medica: Mr. P. S. Stokes.

Sheffield Royal Hospital.—The Dental Hospital forming part of the General Hospital is a great advantage to students in many ways, and affords the student unusual facilities for acquiring proficiency in his work. The department has a fully equipped Mechanical Laboratory, with an Instructor in daily attendance, where pupils receive the two years' instruction in Mechanical Dentistry required by the curriculum. Two additional Dental Anæsthetists have been appointed, and the whole department has been reorganised and fitted with electric motors, &c. Fee for Dental Hospital practice, £21. Honorary Dental Surgeons: Mr. F. G. Mordaunt, Mr. H. James Morris, Mr. Percy S. Stokes, Mr. W. J. Law, and Mr. H. J. Stoner. Honorary Assistant Dental Surgeons: Mr. R. C. Webster, Mr. J. H. Skerritt, Mr. W. Skerritt, and Mr. F. W. Goodwin. Further particulars with regard to the Dental, Medical, and Surgical studies may be obtained from the Calendar of the University, or from the Dean of the Medical Faculty, or from W. J. Law, Hon. Secretary to the Committee of Clinical (Dental) Studies.

Devon and Exeter Dental Hospital, 24, Southernhay, West, Exeter.—Established 1880.—The hospital is open daily (Sundays excepted), and patients are admitted between the hours of 9 and 11 A.M. Students attending the practice of the hospital must consider themselves strictly under the control of the medical officers and must not undertake any operation without the consent of the dental surgeon for the day. Hon. treasurer, Mr. J. M. Ackland; secretary, Mr. W. Alfred Hooker, A.L.A.A.

SCOTLAND.

The Incorporated Edinburgh Dental Hospital and School.—The Edinburgh Dental Hospital and School is located in a spacious and well-equipped building at 31, Chambers-street and offers special advantages to dental students. The General Courses required for the Dental Diploma may be taken in the Medical School of the Royal Colleges of Physicians and Surgeons or in the University schools. The hospital attendance and clinical instruction are taken at the Royal Infirmary. The University, Medical Schools, and Royal Infirmary are within three minutes' walk of the Dental Hospital. The special courses are taken in the hospital. The Dental Hospital practice, extending over two years, affords a student ample opportunity for a full acquaintance with every branch of dentistry. The hospital admits a limited number of indentured pupils. They receive their instruction in Mechanical Dentistry concurrently with the general and special courses. A premium of 60 guineas is payable with each such pupil. The practice and lectures of the hospital are recognised by, and qualify for, all the Licensing Boards. For the special classes, both theoretical and practical, required by dental students the directors have the services of an efficient staff of dental officers and lecturers. There is a course of demonstrations in Mechanical Dentistry. Students receive instruction in Practical Dental Mechanics under the mechanician. The cost of the hospital outfit of instruments is included in the Dental Hospital fee of £31 10*s.* The minimum cost of classes and Diploma for the whole course of dental instruction amounts to £90 7*s.* Those students who desire to take a Medical and Surgical Diploma in addition to the L.D.S. have in this school admirable facilities for so doing. The triple qualification of the Royal College of Physicians and Surgeons of Edinburgh and the Royal Faculty of Physicians and Surgeons of Glasgow is recommended. The minimum cost of Professional Education, the Triple Qualification, and the Licence in Dental Surgery amounts to £169 7*s.* The mechanical department is large and airy and furnished with all modern tools and appliances. The Museum is open to students for study. Further particulars can be obtained from the Dean, Mr. W. Guy.

Incorporated Glasgow Dental Hospital and School, 158, Renfrew-street, and 15, Dalhousie-street, Garnethill, Glasgow.—The winter session will begin in October, and the lectures will be delivered as follows. In Dental Mechanics on Tuesday and Thursday at 7 P.M., by Dr. Hugh McKay, and in Dental Metallurgy on Monday and Wednesday at 7, by Mr. W. Bruce Hepburn, L.D.S. Fee for each of the above courses of lectures, £3 3*s.* Lectures will also be delivered on the following subjects: Dental Surgery, by Mr. J. Mason Noble; Dental Anatomy and Physiology, by Dr. W. Wallace; Dental Pathology and Bacteriology, by Mr. J. F. Webster; Anæsthetics, by Dr. R. Home Henderson; Operative Technique, by Mr. Adam Cubie. The lectures and instruction at the Glasgow Dental Hospital and School are recognised by all the licensing bodies in the United Kingdom. The fees for two years' hospital practice are £15 15*s.* Intending students before commencing to attend the lectures or hospital practice must produce evidence of having passed the preliminary examination prescribed by the regulations of the General Medical Council for registration of dental students. The hospital is opened daily from 5 to 7 P.M. (Saturdays excepted). Students may only enrol during the months of April or October. Summer session begins in April. Winter session begins in October.

Glasgow Royal Infirmary (Dental Department).—Mr. W. Taylor attends at the Royal Infirmary at 3.30 P.M. on Mondays, Wednesdays, and Fridays, and gives a course of instruction in Dental Surgery on these days. The following course in the curriculum can be taken at St. Mungo's College: Anatomy, six months; Practical Anatomy, nine months; Physiology, six months; Chemistry, six months; Practical Chemistry with Metallurgy, three months; Surgery, six months; Medicine, six months; Materia Medica, three months; Clinical Surgery, six months; Dental Surgery, six months, and attendance for two years on the dental department of the hospital. The attendance on the Dental Clinic is free to students of the hospital.

IRELAND.

Incorporated Dental Hospital of Ireland, Lincoln-place, Dublin.—All Dental Students who have passed their First Dental Examination in the Royal College of Surgeons in Ireland (or an equivalent examination or examinations) are admissible to the Clinical Instruction of the Hospital, after paying fees and subscribing to the conditions prescribed by the staff. In addition to Clinical Instruction and Special Demonstrations in making crowns and inlays, gold filling, &c., courses of lectures are given at the hospital on Dental Surgery and Pathology, Mechanical Dentistry, the Administration of Anæsthetics, Orthodontia, Dental Anatomy, and Dental Materia Medica. Practical instruction is also given in Anæsthetics. In addition to the longer courses of hospital attendance, courses of three months' duration will be given to surgeons about to join the Army and Navy, or to practise in the Colonies or remote country districts, also to medical students who have passed their "half."

Fees (all of which are payable in full and in advance):—Dental Hospital Practice (each year), £12 12*s.*; six months, £5 5*s.*; three months, £3 3*s.*; Lectures, £6 6*s.*; Composition Fee, £15 15*s.* per annum. In addition to the above courses registered dentists who are members of the British Dental Association will usually be permitted to take out a three months' course for a fee of 6 guineas. The course in practical Dental Mechanics can be taken in the Hospital Laboratory. Further particulars can be obtained from the Dean, Mr. George Sheppard, F.R.C.S.I., L.D.S. Eng.

ANCILLARY SCIENTIFIC INSTITUTIONS.

IMPERIAL COLLEGE OF SCIENCE AND TECHNOLOGY, London (including as integral parts the ROYAL COLLEGE OF SCIENCES, the ROYAL SCHOOL OF MINES, and the CITY AND GUILDS (ENGINEERING) COLLEGE.)—Mechanics and Mathematics: Professor A. R. Forsyth, F.R.S.; Professor of Applied Mathematics, A. N. Whitehead, F.R.S.; Assistant Professors: A. R. Richardson, B.Sc., and H. Klugh, B.A. Biology, Zoology, Professor E. W. MacBride, F.R.S.; Entomology, Professor H. Maxwell Lefroy, M.A., F.L.S.; Botany; Professor J. B. Farmer, F.R.S.; Plant Physiology and Pathology, Professor V. H. Blackman, F.R.S.; Technology of Woods and Fibres, Professor Percy Groom, M.A., D.Sc. Chemistry: Professor H. Brereton Baker, F.R.S.; Professor of Organic Chemistry, J. F. Thorpe, F.R.S.; Professor of Physical Chemistry, J. C.

Philip, M.A., Ph.D., D.Sc., Assistant Professor, B. M. Jones, M.A. Chemical Technology (Fuel and Refractory Materials): Professor W. A. Bone, F.R.S. Physics: Professors H. L. Callendar, F.R.S., and the Honourable R. J. Strutt, F.R.S.; Assistant Professors: W. Watson, F.R.S., A. Fowler, F.R.S., and Dr. S. W. J. Smith, F.R.S. Geology: Professor W. W. Watts, F.R.S.; Professor of Economic Mineralogy: Dr. Cullis. Metallurgy: Professor H. C. H. Carpenter, M.A., Ph.D.; Assistant Professor: W. H. Merrett, A.R.S.M., F.I.C., M.I.M.M. Mining: Professor W. Frecheville, A.R.S.M., M.I.M.M.; Assistant Professors: L. H. Cooke, A.R.S.M., M.I.M.M., and S. J. Truscott, A.R.S.M., M.I.M.M. Civil Engineering: Professor S. M. Dixon, M.A., M.Inst.C.E.; Assistant Professor: J. Purser, B.A.I., M.Sc. Mechanical Engineering and Motive Power: Professor W. E. Dalby, M.A., F.R.S.; Assistant Professors: W. Hewson, A.R.C.S., B.Sc., A.M.Inst.C.E., A. Cruickshank, and E. F. D. Mitchell, A.C.G.I., B.Sc. Electrical Engineering: Professor T. Mather, F.R.S.; Assistant Professor: G. W. O. Howe, Wh.Sc., M.Sc. The College re-opens on Tuesday, Oct. 6th, 1914. Communications should be addressed to the Secretary, Imperial College, South Kensington, S.W.

FARADAY HOUSE ELECTRICAL ENGINEERING COLLEGE, Faraday House, 62–70, Southampton-row, W.C.—Principal, Alexander Russell, M.A. Cantab., D.Sc. Glasg., M.I.E.E. Instructor in Electrical Machine Design: F. T. Chapman, B.Sc., A.M.Inst.C.E. Instructor in Chemistry: J. Thomas, B.Sc. Lond. Instructors in Mechanical Engineering: Walter H. Bell, A.M.Inst.C.E., and A. Regnauld, B.Sc., A.M.I.E.E. This Institution provides a complete education in mechanical and electrical engineering, including a practical training in works and factories associated with the College for the purpose. The full diploma course occupies four years, but special courses can be arranged. There are two Entrance Scholarships offered annually—viz., one of 150 guineas for two years at College and one year in Works, and one of 100 guineas for one year in College and one year in Works. Particulars may be obtained on application to the Secretary, Faraday House, Southampton-row, W.C. Session begins Sept. 21st.

SCHOOL OF THE PHARMACEUTICAL SOCIETY OF GREAT BRITAIN.—In order to qualify as a pharmacist in Great Britain it is necessary to be 21 years of age, to have passed an approved preliminary examination, to have been for three years practically engaged in the translation and dispensing of prescriptions, and to have passed the Minor examination of the Pharmaceutical Society. The subjects which must be included in the approved preliminary examination are English, arithmetic, algebra, geometry, and two optional subjects. No certificate can be accepted unless it has been granted for the whole of these subjects. To become eligible to enter for the Minor examination the candidate must be registered as an "apprentice or student," and such registration may be secured through the Registrar of the Pharmaceutical Society, to whom a certificate of the preliminary examination must be sent. The subjects of the Minor examinations are botany, chemistry and physics, practical chemistry, materia medica, pharmacy, practical pharmacy and dispensing, and prescription reading. The fee for the examination is 10 guineas, but a candidate who has attended and failed to pass may re-enter for the examination on payment of a reduced fee of 3 guineas. Persons who pass this examination are registered as chemists and druggists. The advanced or Major examination entitles those who pass it to registration as "pharmaceutical chemists." The subjects of the examination are botany, chemistry and physics, practical chemistry, and materia medica, and the entrance fee is 3 guineas. Lecturers.—Chemistry and Physics: Professor Arthur W. Crossley, F.R.S. Botany: Mr. C. H. Warner, B.Sc. Pharmaceutics: Professor Greenish. The session commences on Wednesday, Sept. 30th, on which day the inaugural address will be delivered. Medical students, or pupils intending to enter the medical profession, are admitted to the lectures and laboratory work in any or all the courses. Certificates of instruction in this school are received by the Conjoint Board of the Royal Colleges. Application for admission to the school, or for further information, may be made to the Dean, Professor Greenish, 17, Bloomsbury-square, London, W.C.

ROYAL SANITARY INSTITUTE (WITH WHICH IS INCORPORATED THE PARKES MUSEUM), 90, Buckingham Palace-road, S.W.—The objects of the Royal Sanitary Institute are to promote the advancement of sanitary science in all or any of its branches and to diffuse knowledge relating thereto. It was founded in 1876 and incorporated in 1888. Sessional meetings are held in London and in various provincial centres from time to time for the reading of papers and for discussions upon subjects connected with sanitary science, and lectures and demonstrations are arranged for sanitary officers; for army officers and professional men on food and meat inspection; for meat inspectors; for women health visitors and school nurses; and for school teachers. Examinations are held in London, and in provincial and colonial centres, and certificates of competency in sanitary knowledge are granted. The Parkes Museum, which is maintained by the institute, contains a great variety of the most approved forms of apparatus and appliances relating to health and domestic comfort. Professors and teachers of hygiene are allowed the use of the museum for demonstrations to their students on application to the committee. The museum is open daily free of charge from 9.30 A.M. to 5.30 P.M. and on Mondays to 8 P.M. There are also a large library of sanitary literature, which contains, in addition to standard works on sanitary science, a collection of reports of medical officers of health over the whole country, and a reading room supplied with the principal sanitary periodicals, both home and foreign. The Institute is under the patronage of the King, and the officers are: President, the Earl of Plymouth; chairman of council, Sir Henry Tanner, C.B., I.S.O., F.R.I.B.A.; deputy chairman, Mr. H. Percy Boulnois, M.Inst.C.E.; treasurer, Colonel J. Lane Notter, R.A.M.C., M.A., M.D.; registrar, Mr. A. Wynter Blyth, M.R.C.S.; and secretary and director, Mr. E. White Wallis, F.S.S. The lecturers are Dr. C. Porter, Dr. A. Wellesley Harris, Dr. A. Greenwood, Professor H. R. Kenwood, M.B., Mr. J. Osborne Smith, F.R.I.B.A., Mr. Alan E. Munby, A.R.I.B.A., Mr. W. C. Tyndale, M.Inst.C.E., Mr. A. Saxon Snell, A.R.I.B.A., Mr. Edward Willis, A.M.Inst.C.E., Mr. A. J. Martin, M.Inst.C.E., Mr. T. Dunlop Young, M.R.C.V.S., Mr. J. Hayhurst, M.R.C.V.S., Dr. A. R. Littlejohn, Dr. F. C. Shrubsall, Dr. A. Beresford Kingsford, Dr. James Kerr, Colonel J. Lane Notter, R.A.M.C., Dr. E. H. T. Nash, and Miss Constance Barker. For members the annual subscription is £2 2*s.* and for associates £1 1*s.*, but members and associates holding certain qualifications only pay half the ordinary rate of subscription.

There are Branches or Examination Boards established in nearly all the British Dominions, and the members and associates of the Institute number over 4500

THE ROYAL INSTITUTE OF PUBLIC HEALTH.—The Royal Institute of Public Health, 37, Russell-square, W.C., was founded in the year 1886 with the object of obtaining the registration of public health diplomas and the further statutory requirement that all medical officers of health should possess such a qualification. In 1905 the Fellows and members of the Institute, now numbering 2000, decided to create a central public health institution in London and have erected bacteriological, serological, and chemical laboratories in which researches of a public health character are undertaken for municipal and other authorities and for private medical practitioners, and the necessary training for obtaining public health diplomas is provided, together with a library, museum, lecture room, and common room. The Royal Institute of Public Health is recognised by the University of London as a public educational institution, and its course of instruction for the diploma by the universities and other examining bodies of the United Kingdom. The council appointed four medical practitioners yearly who possess a Diploma in Public Health as Assistant Demonstrators, and who are desirous of obtaining a more extended knowledge of laboratory work in connexion with the duties of a medical officer of health. The Royal Institute of Public Health is a recognised place of research in connexion with the Beit Memorial Fellowships for Medical Research. The Institute is under the patronage of His Majesty the King. The teaching staff consists of—the Principal, Professor William R. Smith, M.D., F.R.S.Ed.; Sir Thomas Oliver, M.D., F.R.C.P.; Thos. H. C. Stevenson, M.D.; W. J. Howarth, M.D.; A. Greenwood, M.D.; and A. Corbett-Smith, M.A. Director of the Laboratories: Michael Wassermann, M.D. Demonstrator in Chemistry: Alan W. Stewart.

PATENT REMEDIES.

The Report of the Select Committee of the House of Commons on patent remedies was issued as we were going to press. This important document finds that the existing law offers no check to gross abuse of the public, and recommends the creation of a Government department to regulate the advertisement and sale of secret and proprietary medicines and appliances.

ANTITYPHOID INOCULATION IN WAR TIME.

To the Editor of THE LANCET.

SIR,—It is to be hoped that the widest possible attention will be drawn to the important letter of Colonel Sir W. B. Leishman in THE LANCET of August 22nd. His statement that even now in the time of war "antityphoid inoculation remains, unfortunately, on a voluntary basis in our army" is an astonishing admission. It is difficult to believe that such a state of affairs will be permitted to continue once the medical profession and the public are made clearly aware of its existence.

Sir W. B. Leishman quotes figures to show the value of antityphoid inoculation, but the matter is one which requires no discussion at the present time. The facts are indisputable, and they are plain enough to be within the comprehension of every intelligent person. There is no kind of question that inoculation properly carried out is protective against typhoid fever. There is equally no question that casualties from typhoid fever among unprotected troops may acquire an importance at least as great as that of casualties from wounds. And as Sir W. B. Leishman points out it is hardly less certain that among the troops which will be collected in large camps at home a similar danger of widespread epidemic typhoid fever will arise.

Surely, on this account alone it is high time that the Army Medical Department should be empowered to insist upon compulsory inoculation. That they should in time of war be required to proceed by "persuading officers and men" is well-nigh incomprehensible. It is also necessary to direct attention to the fact that typhoid fever is not the only epidemic disease, nor the most serious, which an army in the field has reason to fear. Cholera is more severe, and dysentery may prove more intractable. Either of these diseases may well make its appearance in the course of a war which involves the greater part of the continent of Europe, and in which troops from Russia and from the Balkans will continue to be engaged. In the case of both diseases there is evidence that a degree of protection can be conferred by means of suitable vaccines.

Without entering here into a discussion of the question of dysentery, about which it might be held by some that uncertainty remains, it may be stated with confidence that the necessary inoculations against cholera and typhoid could be carried through on each unit within about a month without occasioning on an average the loss of more than four or five separate days of military training. In the majority of cases each inoculation causes at most a day's slight indisposition, while the diseases themselves would mean in many cases the death of the man, and in very many more his loss as an effective. It is evident that any considerable loss of effectives from diseases against which protective inoculation is available must be regarded as to a great extent an avoidable and unnecessary loss. Surely, even from purely military considerations, it cannot be permitted that our relatively slender forces should be subjected to avoidable losses. Accordingly, it appears desirable that the appeal issued by Sir W. B. Leishman should be supported in the strongest possible manner by the profession, and that no effort should be spared to emphasise the necessity of rendering protective inoculation compulsory throughout the army.

The labour involved in carrying out a thorough scheme would certainly be heavy. But there are besides the Lister Institute a considerable number of university and hospital institutions in the country capable of giving assistance. These no doubt would gladly help if required in a task of such importance.—We are, Sir, yours faithfully,

G. DREYER.
E. W. AINLEY WALKER.

Department of Pathology, University of Oxford,
August 25th, 1914.

THE WAR.

THE CONDITIONS OF LIFE IN PARIS.

ONE of our Paris correspondents has sent us the following notes on existing conditions in Paris three weeks after mobilisation. The notes show how the war has affected the normal life of the city and indicate the preparations which have been made to cope with the tremendous demands made on general and civic resources.

Paris, August 24th.

During the first days after war was declared there was the inevitable fear of a shortage in the food-supply. A vivid memory of the privations of 1870 caused a rush to the provision shops and the entire stock of the larger groceries was bought up. Owing to the numbers of horses and vans requisitioned for military movements it was impossible to replace the supplies at once, and for a few days it was difficult to get sugar, salt, potatoes, and flour. A rumour that the number of mobilised men in the gas works would oblige the authorities to curtail the supply of gas caused a demand for petrol and wood alcohol. The difficulty of transport, especially from directions east of Paris, limited the supply of milk for a few days, but only in certain quarters. Families with children were supplied first by order of the Prefect of the Seine. Large quantities were refused to any one person, and the milk had to be sent for instead of being delivered, but in no case was it absolutely impossible to obtain a small supply. By August 7th the supply was again normal—in fact, the statistics show that 475,000 litres of milk were brought into Paris in one day, which was slightly in advance of the usual figure. In the department of the Eure, where there is a larger supply than demand at the moment, the farmers are giving two litres a day to every poor family in the commune. The welfare of the coming generation is always uppermost in the French mind, and notices are constantly published urging the necessity for boiling the milk for infants whose mothers are unable to feed them.

The supply of meat has been more affected by the difficulty of transport. There has been no lack of beef, but veal and mutton were scarce both for the above-mentioned reason and because the excessive heat made provincial farmers fear decomposition *en route* if they sent the meat to Paris. In consequence the wholesale price of veal increased by 4*d.* a pound till August 19th, when traffic became more normal and the prices accordingly fell. Mutton is still slightly dearer owing to the fact that the home supply has diminished for the last two or three years. The very poor have suffered from the diminution in the supply of horseflesh, for it seems that only about half the usual number of horses each day are now sent to the abattoirs as all the animals not requisitioned are being used by the country people to bring in the harvest and vintage. Fresh fish was unobtainable during the excessive heat of the first days of August, but is now plentiful and unusually cheap. As many as 33,200 kilos arrived at the Gare de Vaugirard on the 13th.

The scarcity of potatoes, caused by the frenzied buying of the housewives who failed to realise that new potatoes do not keep, was soon at an end. By August 9th the quantity brought into the city in one day reached the figure of 195,000 kilos. The tax of entry on potatoes having been remitted the price has now dropped to 1*d.* a pound, and there are enough now in the ground round Paris to supply the city for six months at the rate of 500,000 kilos a day.

To solve the problem of the bread-supply the Minister of War ordered a postponement of 45 days in the mobilisation of the men employed in bread-making. A few days later came the order that the making of all fancy bread for which the more refined flour is used was to be discontinued and only the ordinary *pain boulot*, or cleft loaf, might be sold. This evoked some grumbling until it was understood to be an instance of that fine spirit of the solidarity which has animated the French people in this time of stress. Not only was it felt by the bakers that the making of fancy bread by some of their number might harm the trade of others, but the use of the finer flour for this purpose impoverished the bread of the poor, which would be otherwise improved, and it was felt that rich and poor should share alike. It is due to the same spirit of solidarity that the price of food has not gone up, and in some cases, such as fruit, fish, and vegetables, has even dropped. A few isolated cases of merchants who wished to profit by the rush of orders have been sternly repressed by the syndicate of grocers and butchers themselves.

Perhaps the greatest change in the life of the city is seen in the traffic arrangements. For the first day of mobilisation the streets were completely cleared of cabs and taxi-autos. Horses and private motors were commandeered and the *Métropolitain* stopped running. On the second day, the autobuses were requisitioned to serve as commissariat wagons at the front. Their hideous noise has long deafened the Parisians, and the unaccustomed Belgians are said to have taken the approach of a Madeleine-Bastille autobus up the village street for the arrival of a regiment of Uhlans. The buses have not been replaced in Paris, but the majority of the tramways and the river boats are again running. Owing to the reduced staff, the *Métropolitain* only resumed work on certain lines between 7.30 A.M. and 7.30 P.M. The company is now employing the wives of the absent employees as ticket punchers, &c., and the service is continued till 9 P.M. The difficulty of getting about has caused a sudden recrudescence of the bicycle even among women. All bicyclists are obliged to have a safe-conduct from the police commissioner, and with this they can go in and out of the city gates at any hour. The regulation closing the gates of Paris between 6 P.M. and 6 A.M. has now been relaxed, except in the case of motorists, who have to produce a *laisser-passer*.

Since August 18th the number of passenger trains running over the different lines has sensibly increased. Two express trains are now running daily between Cherbourg and Paris, and there is also an express train from Paris to Dieppe, and a daily regular service is now assured between France and England *viâ* Dieppe and Folkestone. The maximum of baggage allowed to each traveller is still 30 kilos.

The arrangements made by the authorities for safeguarding the health of Paris include the posting of notices by the council of public hygiene advising every inhabitant, of no matter what age, who has not been vaccinated during the last five years to apply to one of the vaccination bureaux opened in each of the 20 arrondissements as well as a dozen of the principal Paris hospitals. The directors of the primary schools and the medical inspectors are instructed to vaccinate all the school children as soon as possible, and the Prefect of the Seine also recommends the vaccination of everyone applying for aid to the Assistance Publique. The Prefect of Police has taken advantage of the present military régime absolutely to forbid either the sale or the consumption of absinthe, and his example has been followed by the Prefect of Seine et Oise who has forbidden the sale of absinthe in his department during the war.

Among other wise precautions advised is the burning of as much rubbish as possible and the boiling of drinking water. Although all the reservoirs are carefully guarded, citizens are warned against wasting the water-supply. So far the war has had no influence on the health of Paris. There have only been 645 deaths for the first week in August, as compared with 776 in the preceding week and the average of 775. There have been 14 deaths from typhoid fever, which is above the average, but only 44 new cases are reported, against 100 of the week before. There has been no death from small-pox.

The Commission of Hygiene, under the presidency of M. Léon Bourgeois, has advised the Government to take the following measures for the protection of the public health. Each department is to be divided into sanitary districts which may comprise either the whole or part of a commune. Each district will be controlled by a medical delegate under the authority of a prefect and of a departmental delegate, who will collect all the information of a sanitary nature and supervise the execution of the measures to be taken. Every doctor, head of a household, or lodger who knows of a case of one of the following maladies—typhoid fever, "typhus exanthematique," small-pox, chicken-pox, scarlet fever, diphtheria, miliary fever, cholera, plague, yellow fever, dysentery, puerperal fever, and ophthalmia of the newly born or cerebro-spinal meningitis—is obliged to declare it at the *mairie*. This declaration is at once communicated to the delegate of the sanitary district and to the sous-prefect. When no doctor can be obtained the delegate himself has to visit the patient, and in case of necessity carry out the disinfection. The delegate must also decide if the patient should be isolated, and in that case if he should be taken to a hospital. The delegate has absolute authority to oblige the population to take the necessary prophylactic measures. Any exceptional and urgent expenses incurred in the application of this decree are borne by the State. The district and departmental delegates are appointed by order of the prefect, countersigned by the military authorities. The same Commission has just recommended the authorities to pull down as many as possible of the Paris slums and erect sanitary workmen's dwellings in their place.

In the first days following the declaration of war the hospitals were evacuated as far as possible so as to leave room for the wounded. As soon as it was realised that the beds would not be immediately required, owing to the provincial hospitals being utilised first, civilian patients were again admitted, and every attention paid to the more imminent duty of caring for the sick in Paris. At the Hospital Broca, for instance, where most of the staff have already left for the frontier, the usual routine is being carried on under the direction of Dr. Pozzi, Dr. Lejars, and Dr. Gosset. One of the many pleasant wards, whose walls have been decorated by some of Dr. Pozzi's celebrated artist friends, has been very completely fitted up as an ambulance ward, and will probably be among the first civil wards occupied by the wounded. At the time of writing there are no wounded in Paris. It is recognised that they will have a better chance of a more speedy recovery in the purer air of the provinces. The auxiliary hospitals established in the centre and west of France will be utilised first. The military hospital of the Val de Grace is now empty and ready for patients. Most of the staff have left for the base hospitals at the frontier, and their places here have been taken by a specially appointed corps of surgeons who are over the age for mobilisation.

The sudden departure from Paris of so many doctors has thrown the medical service of the city into some disorder. To obviate delay in finding a doctor for an emergency case a list of names and addresses of at least one doctor in each arrondissement have been published in the press. Since no one over the age of 48 is liable for mobilisation it is naturally the younger generation of doctors who have had the honour of being sent to the front. Among the best known surgeons who are now working with the allied armies are Dr. Proust, Dr. Ombredanne, Dr. Fernand Monod, and Dr. Cuneo. Among the most celebrated names of those remaining in Paris are Dr. Pozzi, Dr. Jalaguier, who is attached to the Val de Grace, and Dr. Tuffier. A register has been opened at the Faculty of Medicine for the names of those medical students not liable for military service who are willing to give their services for the maintenance of the public health.

The *morale* of the inhabitants is beyond all praise. Since the few sporadic instances of looting German shops on the night of August 2nd Paris has preserved her attitude of dignified, courageous calm. There is little sign of the tense anxiety caused by the lack of news. Everywhere the inhabitants feel the same conviction in the justice of the cause for which they fight and stern determination to make any sacrifice to achieve the victory. The tremendous issues at stake seem to have steadied the nerves of the nation to an extent which surprises themselves. A well-known Frenchman said to me a few days ago that even he could not help marvelling at the combination of a great enthusiasm and a deep calm. The amazing spirit of solidarity evoked has been already instanced. It is displayed by the prisoners, who offer part of what they earn for the Croix Rouge; by the shopkeepers, who run their establishments at a loss to give work to their employees; by the schoolmasters, who gave up their holidays at the call of the Minister of Instruction that the schools might be kept open; by the women of France, who went out and gathered in the harvest their men folk had left; by the sinking of differences between political parties, and between employers and employed.

Our allies are truly giving a moving picture of nations fighting for liberty and justice without fear of consequence.

THE PROVISION OF HOSPITAL ACCOMMODATION FOR SOLDIERS AND SAILORS.

The Duchess of Westminster's War Hospital is placed at the disposal of the War Office, and is recognised by the British Red Cross Society. Subscriptions and guarantees for monthly upkeep should be sent to the honorary secretaries of the hospital at 82, Harley-street, W. The orderlies for the hospital are supplied by the St. John Ambulance Brigade.

The Australian Field Hospital, being arranged by Dr. Shields, is a voluntary field hospital formed to join the British Expeditionary Force. The official Australian Field Hospital will come with the Australian troops, and will be under the control of Surgeon-Colonel Ryan, who did good service at the siege of Plevna in the Russo-Turkish war.

Queen Mary's Naval Hospital is being established in the Palace Hotel, Southend-on-Sea, which has been placed rent free by the family of the late Mr. Alfred Tolhurst at the disposal of the Duke of Portland and his committee. The Queen has graciously conferred her name on the hospital and has given £100 towards it. The hospital has been inspected and approved by the Admiralty as suited to meet all hospital requirements. It is conveniently situated on the cliff near the pier, thus facilitating the transport of the wounded at a natural point of disembarkation for hospital ships. Dr. Hale White has been appointed consulting physician and Sir Alfred Fripp consulting surgeon. Donations should be sent to the Duke of Portland at Welbeck Abbey. Gifts of linen, crockery, beds and bedding, and so forth will be welcomed. The London office is at 64, Cannon-street.

The French Ambassador has gratefully accepted, from a committee of which the Duchess of Roxburghe is president, the gift of a base hospital of 200 beds to be sent out next week, with the approval of the War Office, for the wounded of the allies, and those British wounded, the seriousness of whose condition precludes their being transported immediately to England. The hospital will be affiliated to the French Red Cross, Mr. Ernest Miles being surgeon-commandant.

Four Military General Hospitals have been established for London, each with accommodation for 520 patients. The personnel is open to some modification from headquarters:—

First London General Hospital.—During time of peace the office of this hospital is at the Duke of York's headquarters, Chelsea, S.W. The hospital is situated at St. Gabriel's College, Camberwell, S.E. The officer in command is Lieutenant-Colonel W. A. Atkinson, R.A.M.C. (T.F.). Captain R. J. W. Oswald and Quartermaster Hon. Major H. E. L. Purcell are attached. On mobilisation the following physicians and surgeons form the staff:—Lieutenant-Colonels: Sir A. A. Bowlby, C.M.G., and Sir W. P. Herringham. Majors: Mr. C. B. Lockwood, Dr. H. H. Tooth, C.M.G., Mr. D'Arcy Power, Dr. A. E. Garrod, Mr. H. J. Waring, Dr. J. Calvert, and Mr. W. McAdam Eccles. Captains: Dr. H. M. Fletcher, Mr. R. C. Bailey, Dr. J. H. Drysdale, Mr. L. Bathe Rawling, Dr. P. Horton-Smith-Hartley, C.V.O., Mr. G. E. Gask, Dr. F. W. Andrewes, and Dr. W. L. Brown. This military hospital is entirely staffed by St. Bartholomew's men.

Second London General Hospital.—During time of peace the office of this hospital is at the Duke of York's headquarters, Chelsea, S.W. The hospital is situated at St. Mark's College, Chelsea. The officer in command is Lieutenant-Colonel E. M. Callender, T.D., R.A.M.C. (T.F.), and Quartermaster Hon. Lieutenant T. J. Spratley is attached. On mobilisation the following physicians and surgeons form the staff:—Lieutenant-Colonels: Dr. F. Warner, Sir S. J. Sharkey, Mr. G. H. Makins, C.B., and Dr. W. H. White. Majors: Dr. C. W. M. Moullin, Dr. T. D. Acland, Sir F. S. Eve, Dr. G. N. Pitt, Mr. W. H. Battle, Dr. L. E. Shaw, Mr. C. J. Symonds, and Dr. H. P. Hawkins. Captains: Sir W. A. Lane, Dr. F. J. Smith, Mr. C. A. Ballance, M.V.O., Dr. W. J. Hadley, Mr. E. H. Fenwick, Dr. H. W. G. Mackenzie, Mr. L. A. Dunn, Dr. H. G. Turney, Mr. Jonathan Hutchinson, jun., Sir Bertrand Dawson, K.C.V.O., Dr. H. B. Robinson, Dr. H. Head, Dr. J. J. Perkins, Mr. F. J. Steward, Dr. W. S. Colman, Mr. C. H. Fagge, Dr. J. Fawcett, Mr. R. P. Rowlands, and Mr. H. M. Rigby. This military hospital derives its staff from St. Thomas's, Guy's, and London Hospitals.

Third London General Hospital.—During time of peace the office of this hospital is at 3, Henry-street, W.C. The hospital is situated at the Royal Victoria Patriotic Schools, Wandsworth, S.W. The officer in command is Lieutenant-Colonel H. E. Bruce Porter, R.A.M.C. (T.F.). In addition Major F. R. Miller and Quartermaster Hon. Lieutenant W. A. Fish are attached. On mobilisation the following form the staff:—Lieutenant-Colonels: Sir J. Kingston Fowler, K.C.V.O., Dr. S. P. Phillips, Dr. W. Pasteur, and Sir A. Pearce Gould, K.C.V.O. Majors: Sir J. R. Bradford, K.C.M.G., Mr. Mayo Robson, Dr. A. P. Luff, Mr. A. E. J. Barker, Dr. S. H. C. Martin, Mr. B. Pollard, and Dr. W. E. Wynter. Captains: Mr. J. E. Lane, Dr. A. F. Voelcker, Sir J. Bland-Sutton, Mr. R. Johnson, Dr. J. S. Risien Russell, Mr. J. Murray, Dr. F. J. Wethered, Dr. H. Batty Shaw, Mr. T. H. Kellock, Dr. F. J. Poynton, Mr. V. W. Low, Dr. W. Harris, Mr. W. S. Handley, Sir J. Broadbent, Sir Victor A. H. Horsley, Mr. S. M. Smith, Dr. W. H. Willcox, Dr. H. Campbell Thomson, Mr. T. G. A. Burns, Dr. F. W. Goodbody, Dr. F. H. Humphries, Mr. A. E. Dodson, Mr. S. Hastings, and Mr. R. E. Apperly. This military hospital derives its staff from Middlesex, University College, and St. Mary's Hospitals. On Friday, August 7th, all the members of the staff, with the exception of two or three who are abroad, reported themselves as ready for duty.

Fourth London General Hospital.—During time of peace the office of this hospital is at the Duke of York's headquarters, Chelsea, S.W. The hospital is situated at the new King's College Hospital, Denmark Hill, S.E. The officer in command is Lieutenant-Colonel (Hon. Surgeon-Colonel and Hon. Captain in the army) A. Thorne, V.D., and Major G. N. Biggs and Quartermaster Hon. Captain J. Boxall are attached. On mobilisation the following physicians and surgeons form the staff:—Lieutenant-Colonels: Dr. N. I. C. Tirard, Sir W. W. Cheyne, C.B., Dr. N. Dalton, and Mr. G. R. Turner. Majors: Mr. Stanley Boyd, Dr. R. G. Hebb, Mr. A. H. Tubby, Dr. F. W. Mott, Mr. W. G. Spencer, Dr. W. A. Turner, Mr. A. Carless, and Dr. J. Galloway. Captains: Mr. F. F. Burghard, Dr. A. M. Gossage, Dr. H. F. Waterhouse, Dr. C. Ogle, Dr. R. H. P. Crawfurd, Mr. C. Gibbs, Dr. A. Latham, Mr. W. Turner, Dr. W. Hunter, Mr. F. Jaffrey, Dr. W. C. Bosanquet, Mr. A. H. Evans, Dr. J. S. Collier, Mr. H. S. Pendlebury, Dr. J. P. Stewart, Dr. E. Spriggs, Mr. E. R. Carling, Mr. H. S. Clogg, and Mr. T. C. English. This military hospital derives its staff from King's, St. George's, Charing Cross, and Westminster.

Being Military General Hospitals these four institutions are arranged to accommodate 520 beds each. They have been got into working order with thoroughness and celerity, and it will be seen that the finest scientific achievement will be through their medium placed at the disposal of our forces.

The Cambridge Research Hospital has been offered to the War Office as a completely equipped hospital with full medical, surgical, and nursing staff for 20 wounded officers. This offer has been made through Mr. Otto Beit who has generously promised to provide funds for the complete equipment and maintenance of the hospital, staff, and patients during a period of one year. The Army Council have intimated that they will be glad to avail themselves of Mr. Beit's generous offer should additional hospital accommodation for officers be needed. In the meantime the research work of the hospital will be carried on notwithstanding that the necessary changes entail great sacrifice of laboratory and other accommodation.

The Bristol Royal Infirmary has agreed to hand over its establishment, including the King Edward VII. Memorial Infirmary, for the treatment of sick and wounded soldiers and sailors. The Bristol General Hospital will place 50 beds at the disposal of the infirmary for surgical patients who may have to be removed, and the Convalescent Home another 50 for medical patients, while the Eye Hospital will take care of the infirmary's ophthalmic cases. Similar patriotic offers are being made all over the country, and any number of private houses, both large and small, are being tendered, accounts of which are published in the daily press, so that it is unnecessary to attempt to record them all here.

While we heartily applaud the natural and loyal spirit which prompts the support of local institutions, we cannot refrain from calling the attention of our readers, who may probably be asked to advise in such matters, to the fact that our hospitals will have to discharge their duties, as far as possible, towards our vast civil population, and will be likely to need greatly increasing rather than lessening accommodation as the war progresses. The poor will become poorer, while many who have hitherto been in comparatively easy circumstances may be driven to swell the ranks of the poor under the coming strain. Moreover, the medical and nursing service available is limited, so that economy and efficiency of administration can be secured only by concentration of effort through central organisations. Whatever aid, therefore, may be given to local efforts should on no account be at the expense of the great central funds, which must first be liberally supported from all parts of the country. In view of this consideration the Red Cross Society very wisely urges that whatever arrangements are planned no such hospital should be actually prepared before the mobilisation order is received from the military authority, for funds thus prematurely expended may be literally wasted on localities and institutions which are for some reason unavailable. The National Relief Fund and the British Red Cross Society should first be adequately provided for. The Auxiliary Home Hospitals are being tabulated and inspected by the British Red Cross Society, Mr. G. H. Makins, associated with Dr. Edward Stewart, having since the commencement of mobilisation been in charge of affairs at Devonshire House.

THE SUPPLY OF DRUGS.

In an important communication received from the National Health Insurance Commission it is stated that the Government have for some time had under consideration the general question of the supply of drugs to the general population of the United Kingdom in the exceptional circumstances now prevailing. Steps are being taken to prevent prices being artificially inflated by speculation and to promote a return to normal conditions. The Government have been already in consultation with importers and dealers on the one hand, and on the other with an Advisory Committee representing the interests of wholesale and retail druggests. Any drug to which in the opinion of the Government a special arrangement should apply will be scheduled as from a date stated, and the fact notified in advance in order that the information may be in the hands of panel chemists prior to that date. Current prices will then be settled from time to time in consultation centrally with the representative persons and bodies indicated above, and notified for the information of the panel chemists and other persons concerned. Already the following drugs have been specially scheduled under these arrangements, the scheduling taking effect on and from August 24th: acetyl-salicylic acid, salicylic acid, salicin, sodium salicylate, sodium salicylate theobromine, dilute hydrobromic acid, ammonium bromide, liq. bismuth and ammonium citrate, potassium bromide, sodium bromide, bismuth carbonate, oxide, salicylate, subgallate, and subnitrate. Under the scheme the Commissioners are prepared to consider the question of providing for additional payments to panel chemists over and above the sums due under the current insurance contracts in the circumstances and on conditions set out. A list is to be kept (separate from other insurance prescriptions) of those prescriptions containing one or more of the scheduled drugs.

A CORPS FOR CHOLERA SERVICE.—A scheme is on foot to organise a special corps for cholera service with the Russian forces, and the Russian authorities are considering the proposal. The scheme at present contemplates the enrolment of 10 medical men and 20 nurses. It is desirable that medical volunteers for this work should have had practical experience of cholera as clinicians or bacteriologists, and that nurses should have had a full hospital training. Applications, in the first instance by letter only, may be sent to the secretary of the provisional committee, 67, Margaret-street, London, W.

SEAMEN'S HOSPITAL SOCIETY.—200 beds are at the disposal of the Admiralty in the Dreadnought Hospital at Greenwich for the reception of sick and injured from the fleet. The beds are fully equipped and adjoin the operating theatres, while patients can be removed from the vessel which brings them from the fleet direct to the beds, which can be increased as occasion may require. The staff have offered their services free to any men of the Royal Navy who may be sent to Greenwich for treatment. In addition there are 25 beds at the Albert Dock Hospital.

ASSOCIATION OF REGISTERED MEDICAL WOMEN AND THE WAR.—A subcommittee has been formed to collect information at once as to the different forms of assistance which medical women can give in the contingencies arising from the state of war, to collect data from the whole body of medical women as to possibilities of rendering service, to form a bureau to which requests for help can be sent, and to organise whatever help can be given. The subcommittee is of opinion that medical women will probably be needed for civilian work rather than for work directly connected with the army, and realises that as a result of the departure of so many medical men to the front there will be vacancies at home which medical women may usefully fill. All medical women free to offer assistance of any sort—gratuitous or paid, part-time or whole-time, in their own town or at any place where help is most needed—are asked to communicate with Miss K. Haslam, M.D., 17, Pembroke-square, W.

MARRIAGE.

SUSMANN—BROOKS.—On August 27th, at St. Mary's Church, Twyford, Berks, by the Vicar, the Rev. R. H. Acworth, assisted by the Rev. Charles Sadler, of Liddon House, Thurloe-square, W., Walter James Susmann, M.A., M.B., B.C. Cantab., M.R.C.S., L.R.C.P., of Erchfont, Henley-on-Thames, to Lena Mary, only daughter of the late Dr. Bransby and Mrs. Brooks, of Sonning-on-Thames.

OUR CURRENT NUMBER

Being almost exclusively devoted to information especially interesting to Students, we are necessarily compelled to defer the publication of communications on other important subjects.

We tender our best thanks to those gentlemen who have at considerable personal trouble kindly supplied us with the returns and prospectuses upon which the information given in this Students' Number of THE LANCET *relative to the various medical examining bodies, hospitals, and medical schools of the United Kingdom is based. We regret that in some cases, however, owing to proofs having been either not returned at all or too late, certain inaccuracies may be found.*

Communications, Letters, &c., have been received from—

A.—Messrs. Allen and Hanburys, Lond.; Mr. R. J. Albery, Lond.: Association of Registered Medical Women, Lond., Secretary of; Captain Amy, Lond.; Messrs. C. Ash, Sons, and Co., Lond.; Dr. Armly Ashkenny, Birmingham; Mr. N. S. Adler, Hove; American Association for Labour Legislation, New York, Secretary of.

B.—Mr. George Brown, Callington; Mr. Henry James Buckland, Harrogate; Board of Agriculture and Fisheries, Lond.; Baldovan Institute, Dundee; Bristol, School Medical Officer of; Sir George T. Beatson, Glasgow; Mr. L. A. Bull, Lahore; Messrs. F. P. Baker and Co., Lond.; Mr. G. W. Badgerow, Lond.; Messrs. C. Birchall, Liverpool; Messrs. E. J. Burrow and Co., Cheltenham; Messrs. Burgoyne, Burbidges, and Co., Lond.; Bristol Royal Infirmary, Secretary of; Surgeon H. Burns, R.N., Lond.; Messrs. R. and J. Beck, Lond.; Dr. J. L. Bogle, Wootton Bassett; Messrs. Butterworth and Co., Lond., Dr. Anton Breinl, Melbourne; Dr. James W. Barrett, C.M.G., Melbourne; Dr. Andrew Balfour, C.M.G., Lond.; British Red Cross Society, Lond., Secretary of; Messrs. Burroughs Wellcome and Co., Lond.

C.—Dr. Carey Coombs, Clifton; Dr. J. A. Calanton, Lond.; Cambridge Research Hospital, Secretary of; Camberwell Guardians, Clerk to the; Cancer Hospital, (Free) Lond., Secretary of; Cumberland Infirmary, Carlisle, Secretary of; Craig House, Edinburgh, Physician to; California State Board of Health, Sacramento, Director of; Messrs. E. Cook and Co., Lond.; Messrs. Condy and Mitchell, Lond.; Mr. H. A. Collins, Croydon; Mr. E. Cureton, Shrewsbury; Mr. F. W. Clarke, Chorlton-cum-Hardy; City Asylum, Nottingham, Medical Superintendent of.

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THE LANCET, SEPTEMBER 5, 1914.

The Lettsomian Lectures

ON

DYSENTERY.

Delivered before the Medical Society of London, 1914,

BY F. M. SANDWITH, M.D. DURH.,
F.R.C.P. LOND.,
RESHAM PROFESSOR OF PHYSIC; LECTURER ON TROPICAL DISEASES, ST. THOMAS'S HOSPITAL, ETC.

LECTURE I.

THE HISTORY OF DYSENTERY.

Life is short and the Art long; the opportunity is fleeting; experiment is dangerous and decision is difficult. The physician must not only be prepared to do what is right himself, but also to make the patient, the attendants, and externals coöperate.—*1st Aphorism of Hippocrates.*

GENTLEMEN,—I should like in the first place to express my full appreciation of two compliments paid to me by the President and Council of the Medical Society: the original invitation to deliver the Lettsomian lectures for this year, and the gracious courtesy which has permitted the postponement of their delivery for reasons of health which were beyond my own control.

I imagine that it is the duty of the lecturer to choose a subject about which he believes himself to be less ignorant than about others, and at the same time to select a theme which is of some practical importance to many Fellows of this society. Every year a considerable number of cases of uncured dysentery is imported into Great Britain, sometimes open and avowed, often masked and silent, but always of some potential danger to the community. Another reason for inducing me to select this topic is that I find since this lectureship was established in 1850 dysentery has only once been taken as the subject of the lectures. In 1881 Sir Joseph Fayrer, K.C.S.I., F.R.S., lectured here on Tropical Dysentery and Diarrhœa, and though his lectures did not appear in the Transactions of the Medical Society nor in the medical journals of the time, they were reproduced with some other papers in book form at the end of 1881.

It is instructive now to take stock of the knowledge gained of the diagnosis and treatment of dysentery during the 33 years which have intervened. The history of the disease shows us that, almost more than any other infectious disorder, it has had a widespread diffusion all over the inhabited world; most countries have suffered from national visitations, and it is still true that wherever man is found some form of it is liable to appear.

Although there is no evidence to show that our insufficiently clad, fruit-loving, prehistoric ancestors were plagued by dysentery, Hindu records carry us back some 3000 years, to the time when the disease was sufficiently well known to be divided into acute and chronic varieties, and therefore named differently. The Hindu surgeon Sushruta,[1] who lived three or four centuries B.C., was by no means ignorant of preventive medicine, for he wrote: "He falls an easy victim to internal and external diseases who drinks of, or bathes in, a pool of water which is full of poisonous worms, or is saturated with urine or fæcal matter, or is defiled with germs of vermin or decomposed animal organisms, or is covered over with the growth of aquatic plants, or is strewn over with withered and decomposed leaves, or which in any way is rendered poisonous and contaminated, as well as he who drinks and bathes in the freshly collected water of a pool or a reservoir during the rains."

To great Hippocrates seems to belong the credit of the name dysentery and of differentiating it from diarrhœa, though we see by his aphorisms that he was quite aware of the possible transition of one disease into the other. He knew that dysentery was more likely to be fatal to children between 5 and 10 years of age than to adults, and another aphorism says: "If, in a person ill of dysentery, substances resembling flesh be discharged from the bowel it is a mortal symptom." He pointed out the danger of such symptoms as fever, thirst, and inflammation of the liver or stomach; "the more of these symptoms there are, the greater the danger; and the fewer, the more hope is there of recovery."

Dysentery was well known to all later writers of antiquity. Celsus, for instance (Lib. IV., Sect. XV.), tells us that there are in the interior of the intestines ulcers from which blood flows, mixed with fæces or mucus; that the patient suffers continuously from tenesmus and pain near the anus, and that if the case becomes chronic it is wise to administer soothing enemata. He devotes another paragraph to "the disease called by the Greeks tenesmus," but says that it may be treated like dysentery. Dr. Budge[2] has just translated from Syriac into English a series of lectures on human anatomy, pathology, and therapeutics, which were originally written in Greek by a learned and distinguished, but unnamed, physician who had evidently studied in Alexandria when that city was the scientific centre of the world. The author was an earnest follower of Hippocrates, and his lectures were translated from Greek into Syriac about the twelfth century, but unfortunately the translator's name is also unknown, for the Syriac manuscript was mutilated, perhaps because it contained theories or statements which were not acceptable to monkish readers. We are told that "dysentery (or bloody disease of the inside) begins with evacuations of bile in large quantities which cause griping pains, and afterwards portions of the bowel come forth and then a little blood. These portions of the bowels must be carefully examined, for they indicate the place where the ulcer, which causes the dissolution of the bowel substance, is situated. When the ulcer is in the upper part it may be treated by medicines that are drunk, but when it is in the lower part astringent injections must be used. Ulceration of the bowels does not arise suddenly."

In another place the author says that the bloody diarrhœa "is like unto the water in which meat that hath just been killed hath been washed." There is a wealth of prescriptions, and one, containing 44 ingredients, is described as "a most excellent and marvellous medicine, and no other existeth which is to be compared with it." After this high praise the practitioner must have been disappointed to read: "The dose is according to what God shall show thee."

In Europe, with the exception of plague, the epidemics in early days of which we hear most are typhus, malaria, and dysentery. The last named was certainly prevalent in France in A.D. 534, in Hungary in 820, in Germany in 1083 and 1113, and in England in 1316. Wars, famine, and foul drinking water were the chief allies of the various epidemics. The camp at Bordeaux, for instance, lost 14,000 men from dysentery in the year 1411 (Walsingham). Like malaria, dysentery reached its maximum diffusion and its greatest endemic severity in the tropics, while in subtropical countries there was, and still is, a decrease in the prevalence and seriousness of its endemic and epidemic incidence. Unlike malaria, epidemics of dysentery have attained northern latitudes such as Sweden and Iceland, though the disease has apparently found difficulty in prolonging its endemic existence in cold countries. King John is said to have died at Newark-on-Trent in 1216 from dysentery, aggravated from indulging too freely in peaches and copious draughts of new cider.[3] Edward I. is also said to have suffered from dysentery shortly before his death in 1307.

The earliest entries of dysentery which Creighton can find in the parish registers of England occur in 1596, when out of 28 burials during the year at Finchley 19 persons had died from dysentery, while in the following year there were 23 deaths from this cause out of a total of 48. Both these were years of scarcity all over England, and dysentery, with or without "famine fever," became the chief sickness in succession to declining plague.[4] In Stuart times dysentery began to be constantly heard of as a malady of London, called the flux or flix, and occurred in the bills of mortality after 1657 under the name "griping of the guts." The recipe for dysentery of the Hon. Robert Boyle (1627–1691), the most celebrated natural philosopher of his time and one of the founders of the Royal Society, was: Take the bone of the thigh of a hanged man, calcine it to whiteness, and give the white powder in some red cordial. In addition to scurvy our sailors suffered severely from dysentery, and Sir Francis Drake in 1596 had to keep his cabin, complaining "of a scouring or flux," 13 days before he died off the Spanish Main.

In 1655 Cromwell's ambition to convert a Spanish island into an English colony led to many disasters. A naval and colonial force of 8000 men failed to take St. Domingo, chiefly because the troops (who had been revelling in oranges and other fruit and were therefore probably not scorbutic) "were troubled with violent fluxes, hundreds of our men having dropped down by the way, some sick, others dead." During the three weeks of this disastrous campaign on the island there were 1700 deaths, mostly due to "flux." The expeditionary force sailed on to Jamaica, where the Spaniards offered little opposition, but dysentery was almost universal among our officers and men. There was no care of the sick, no medical attention, no hospitals, no scavenging, no effort to protect the water-supply, not even energy to bury the dead. A despatch to Cromwell from his new possession stated that the army (which had meantime been reinforced) was reduced in January, 1656, to 3000 men, many of them sick and weak. "We die daily, not less than 50 every week, which is much, considering our small numbers." In this haphazard fashion did England become the owner of an island which is extolled to-day as a health resort!

The slave ships which transported negroes from Africa to North America were decimated by dysentery; the unfortunate slaves were beaten by the sailors, fed on salt beef and pork, and, to ensure cleanliness, they were forced into a tub of cold water every day, while a bucketful was poured upon their heads, in spite of their illness. Lettsom (1744–1815) practised as a young man in one of the West India Islands, where dysentery was certainly feared, and in consequence it became the custom of the residents to take their own drinking water with them when they were invited to dine on board a British ship. He seems to have regarded malaria and dysentery as twin associates and to have been certain that the latter was contagious. In 1772 he wrote: "Every writer now allows the dysentery to be so, and the nature of this disease and remittents is so analogous that they seem to proceed from the same causes, somehow disposed to attack the body in a different manner; they even admit of mutual and alternate changes one with the other, and the method of cure in both is nearly the same, if we allow for the different symptoms liable to arise from the topical affection of the intestinal canal" ("Reflections on the General Treatment and Cure of Fevers," Section II.).

RECORDS IN BRITISH ISLES.

In London, dysentery seems to have reached its chief prevalence in 1629, when the bills of mortality began to be regularly printed. In that year 449 deaths, being one-twentieth part of the mortality from all causes, were entered under the name of "bloody flux," while in succeeding years the heading was either "griping of the guts," which Creighton says also included infantile diarrhœa of the summer or autumn, or "surfeit," a term based on the erroneous theory that dysentery was caused by a surfeit of fruit. In the latter half of the seventeenth century Sydenham and Willis reported from London that there was a certain amount of dysentery every year, especially in camps and in prisons, but that it was not very contagious nor often mortal, except in the case of aged persons. But in 1689 there were two terrible outbreaks among troops at Londonderry and Dundalk. During the siege of Protestant Londonderry by the Catholic Irish army of James II., which only lasted 105 days, it was calculated that 10,000 (out of 30,000 besieged) died from fluxes, fever, and famine, "besides those who died soon after." Twenty-six days before the besiegers withdrew in consequence of the arrival of an English ship, some 500 useless persons were expelled by the garrison, and the besiegers are said to have recognised them when they met them "by the smell." A month later the released garrison carried dysentery and typhus to Schomberg's camp at Dundalk, where about 1700 died in spite of the routine treatment of casks of brandy, which were distributed among the regiments. Story, a regimental chaplain, who wrote a history of this campaign, says that he found his own men in a state of brutal callousness, objecting to part with their dead comrades because they wanted the bodies to sit or lie on, or to keep off the cold wind!

Ten years before these two calamitous outbreaks Borlase had written, "The dysentery or flux is commonly called the country disease, and well it might, for it reigns nowhere so epidemically as it doth in Ireland." Sydenham was therefore justified in writing of the endemic dysentery of Ireland. When it ceased to be indigenous it became an occasional scourge, but since 1846–47 Ireland has apparently been free from epidemic dysentery. Graves (2nd ed., 1848) does not devote much space to this disease in his clinical lectures, but impresses upon his pupils the importance of putting patients suffering from chronic dysentery upon a "full meat diet." He possibly had famine or scurvy in his mind as a likely cause. Between 1759 and 1764 Dr. Mark Akenside in London treated at St. Thomas's Hospital 130 cases of dysentery, and proved the good effects of ipecacuanha upon many of them.[4] He also pointed out that some of his autumnal cases did not abate until the following spring. But we cannot to-day accept his teaching that dysentery is "a rheumatism of the intestines."

At the end of the eighteenth century dysentery was easily transported from one country to another; for instance, transports conveying troops to Jamaica landed 400 sick with dysentery, though five months had elapsed since they left England. In much the same manner, and by what seems to have been a more usual process, imported cases infected our seaports. As an example, we read that the dock labourers of Newcastle were mortally infected in 1781 by dysenteric sailors who had returned from abroad.

Hirsch tells us that the first notice of a pandemic diffusion of dysentery over Europe dates from 1538, and that this was followed by at least six other similar pandemics, some of which lasted for three years or more. The last widespread European epidemic was in the years 1853–55, in France, Switzerland, Germany, Denmark, Sweden, and Russia. Many parts of Scotland and England were attacked in 1846–47, and even in the twentieth century the disease has been more or less endemic in European Russia, Austria, Hungary, the Balkan States, Spain, and Italy. It is, therefore, somewhat premature to label acute dysentery as a tropical disease, though, so far as the British Isles are concerned, it may now be considered an exotic, with the exception of cases still met with in lunatic asylums, to which I must refer in the final lecture. Dysentery is indigenous in many parts of Asia, such as the Hejaz, India, Ceylon, China, and Japan; in Australasia it is well known in Queensland, British New Guinea, Fiji, and many other islands. In Africa and its islands the disease is a common one in most of the inhabited districts, and this is almost true of North, Central and South America, and the West Indian Islands.

Famines.—All through history it has been known that dysentery is an early attendant on long-continued famine, though it does not now exhibit a very infectious character when refugees introduce it. Yet the effect of the Indian famine of 1897 was to increase fourfold the deaths from dysentery and diarrhœa. In 1900, which was the last famine year in India, the deaths from bowel complaints rose from 252,025 to 530,654, being an increase of more than 111 per cent. The mortality in the Punjab and elsewhere was most marked in the famine districts. The failure of the rains in 1899 had led to the use of foul, stagnant, concentrated water from pools, while the rains of 1900 carried into the water channels an unusual accumulation of impurities; the people had to fill an empty void with indigestible food, such as badly cooked or raw grain, grass seeds, leaves, bark and roots, while after the onset of the rains they gorged themselves with green, fresh vegetables.[5] My own limited experience of famine-stricken Sudanese, imported into Egypt, compels me to admire the acumen of Herodotus, who attributed the dysentery which destroyed Xerxes' army, not so much to starvation as to the men having been obliged to try and support life by subsisting on the bark and leaves of trees.

Association with Wars.

Since the Peloponnesian war there has hardly been a protracted military campaign in which dysentery has not scourged the hostile armies. To take only some modern instances: in the American Civil war the Federal troops lost 37,794 men from dysentery and diarrhœa, which was nearly 30 per cent. of the total deaths; these diseases were also frightfully prevalent among the Federal prisoners at Andersonville, where they occasioned 50 per cent. of the sickness and 58·7 per cent. of the deaths from all causes. In the Franco-German war (1870–71) there were 38,652 admissions and 2380 deaths from dysentery in the German army; the troops on their return home spread infection in many districts, some of which, after all these years, are not yet quite free from it. In the South African campaign (1899–1902) we had 38,108 cases of dysentery with 1342 deaths. There were many predisposing causes, which tended to produce chronic irritability of the intestines and made the troops susceptible to infection, such as the youth and inexperience of our men, great variations in temperature, causing chills, extremely tough meat rations, and the very bad condition of the teeth of a large number of men towards the close of the campaign.

But the greatest source of danger which we encountered in South Africa was undoubtedly the water-supply. In standing camps, during the latter part of the war, all water was boiled; in hospitals and messes Berkefeld filters were used, but to carry out boiling properly large quantities of fuel are required, an almost insurmountable difficulty in a treeless country. On the march it was found practically impossible to prevent men from drinking foul water.

> Great care was taken to select the best possible source; medical officers went on ahead of the column to select the place for filling the water carts. Sentries were posted to prevent animals and men, especially natives, from fouling the supply, and a European was placed in charge of the carts to see that they were filled at the selected spots. All this was well carried out in camp, and also when the columns arrived on the camping ground sufficiently early, but frequently it was after dark, and possibly pouring with rain, when the carts were probably filled at the nearest place. Then, as fire and lights were not allowed if the enemy were in the vicinity, it was impossible to boil water, cook food, or dig latrines.
>
> Towards the end of the summer water became scarce and the choice of camping grounds was more restricted; consequently the same ground was repeatedly occupied and the surroundings became more contaminated. Diseased and exhausted animals invariably make for water, and not having strength left to extricate themselves from the mud lie down and die, so where the banks of the stream are steep the mortality is very great. The Modder River, in particular, was full of the carcasses of animals.[6]

When Ladysmith was besieged it was a town ripe for an epidemic, with three dangerous factors present: (1) a bad water-supply from the Klip River, already polluted by drainage from the town and from the Boer lines up-river; (2) a perfectly inadequate method of dealing with sewage; and (3) a soil previously polluted and infected. Valiant efforts were made to mend matters. Engineers from H.M.S. *Powerful* and some railway men constructed a condensing plant with locomotive boilers, but as fuel became scarce the supply had to be limited; rough filters were made, and as long as fuel lasted the water was boiled, and officers noted an apparent improvement in the health of the men so long as such methods could be used, but they could only be very partially adopted. It was only in the hospital at Intombe that a continuous system of filtering the water through Berkefeld filters could be kept up. During the 120 days of the siege there were 1280 cases of enteric fever with 360 deaths, and 1841 cases of dysentery with 105 deaths. The high death-rate was greatly due to the scarcity of milk and other suitable nourishment. The rations for the troops for the last six weeks of the siege consisted only of three small biscuits and 1¼ lb. of horse or mule flesh, or its equivalent.

The 48 medical officers who were in Ladysmith made gallant efforts, as the following record shows: 5 died, 10 had severe attacks of enteric fever, and 12 others were incapacitated, which shows what a strain must have been thrown upon those who could remain at their posts. On the relief of Ladysmith there were 2000 sick and wounded in the hospitals and at least as many more who were only fit to be invalided. The relieving force, which had spent a fortnight in the horribly insanitary positions lately occupied by the Boers, at once added an enormous number of sick to the garrison. Sir Frederick Treves was among the first to enter the town with the relieving force, and this is what he says:—

> The men were piteous to see; they were thin and hollow-eyed, they had about them an air of utter lassitude and weariness. Some were greatly emaciated, nearly all were pale, nearly all were silent. They had exhausted every topic of conversation, it would seem, and were too feeble to discuss even their relief. Streets were empty of all but a few tired and listless men, stores without goods, shops without customers, a railway station without passengers, a post-office without letters, stamps, or postcards. No words, indeed, can fully describe this city of desolation, this little colony of the almost hopeless, this poor, battered, worn-out, hungry town of Ladysmith, with a bright summer sun making mockery of its dismal streets. The wretchedness of the place was not mitigated by the horrible smells which greeted one at every corner, nor by the miserable, dirty river which crawled slimily through the place.[7]

As a postscript of dysentery in South Africa I may add that an outbreak of 170 cases and 38 deaths occurred at Aldershot in 1901, apparently due to importation of the disease by returning troops.

Let us turn for a minute to Japan, where there was, during 1894, the enormous number of 155,140 cases of dysentery, of which 38,094 died.[8] From the sanitary point of view the Japanese had fared badly in their land campaign against China in that year, losing 3 from disease to every 1 wounded. But they took the lesson to heart and proceeded to mend matters, so that, when they fought and beat the Russians in 1904, instead of a proportion of 4 deaths from disease to 1 death from wounds, which Sir Thomas Longmore tells us is the average of the wars of the last 200 years, the Japanese reversed those figures, having a mortality of 1 dead from disease to 4 dead from wounds. Those British officers who were allowed to accompany the Japanese troops report that sickness was kept down by reliance upon every soldier carrying out the regulations taught to him in peace time rather than upon any expert sanitary corps. Every Japanese soldier is taught that the most disgraceful illness to which he can succumb is one induced by disobedience to orders, such as drinking dirty water or eating unwholesome food. The national habit of drinking tea, which necessitates boiling the water, was of great preventive assistance. But when the Japanese was unable to boil the water he suffered just as others do. For instance, before Port Arthur there was an advanced post of 300 men, whose only water-supply came from a surface well which they had dug. The post was close to the Russian lines, so that fires for boiling water were not permitted. The water was good enough unboiled until, one day in August, a heavy storm of rain flooded the well and doubtless contaminated it. “The men drank the water as usual, and next morning they were nearly all down with dysentery.”[9]

The mortality from dysentery among the Japanese was often as high as 25 per cent. of the cases, which can be explained by “the fact that 90 per cent. of the dysentery cases were complicated with beri-beri.” In the recent war between Italy and Turkey in Tripoli, and again in the Balkan campaign, dysentery was present among the troops, but no complete statistics have yet been published. Dr. Stiven, however, who was near Constantinople in the war of 1912–13, caused to be examined in his hospital laboratory 228 specimens of fæces, with this percentage of results: cholera, 10·9; bacillary dysentery, 35; B. coli enteritis, 54·1. All the dysentery cases examined were of the Shiga type, and no cases of amœbic dysentery were detected. Many of the B. coli cases may have been originally bacillary cases of dysentery; others were due doubtless to starvation and exposure. “A spore-bearing bacillus was often detected on examining the fæces of patients. This was supposed to be the B. enteritidis sporogenes, and was identical with a spore-bearing bacillus found on maize and other roots. The old soldiers knew that if they ate these roots raw or insufficiently cooked they would get diarrhœa, but that it would yield to treatment.”[10]

The so-called dysentery from which Sir Ernest Shackleton's party suffered in the Antarctic zone seems to have been an irritative enteritis due to too rapid a return to meat diet. The usual ration on the march in Polar expeditions consists of dried pemmican (dried beef 23 per cent., marrow and oatmeal fat 63 per cent., water 14 per cent.), biscuit, cocoa or tea, butter and sugar, and Surgeon Atkinson, R.N., a member of the late Scott expedition, tells me that upon returning to camp, in spite of a consuming desire for food, it is better to limit the diet to porridge and bread, for even they produce some diarrhœa, and to withhold all meat for at least six days.

Dysentery slowly Admitted to be Water-borne.

Even after experts had hesitatingly accepted the belief that cholera and enteric fever epidemics were often caused by the impurity of drinking-water, they were unwilling, until the very end of the nineteenth century, to admit dysentery under the heading of “water-borne diseases.” For instance, Fayrer (1881) quotes with apparent approval Fergusson, who wrote: “True dysentery is the offspring of heat and moisture, of moist cold in any shape after excessive heat, but nothing that a man could put into him would ever give him true dysentery.” Again, in 1891, Notter,[11] while eliminating scurvy and malaria as possible factors, stated that there was little doubt of the correctness of Cullen's view that dysentery and diarrhœa were produced “from the effluvia of putrefying animal substances.” It is true that he mentions that two observers in India had directed attention to impure water as an occasional cause. In 1895 Notter's late assistant published an excellent “Handbook of Hygiene,” but did not include dysentery as one of the three important diseases caused by impure water, though he states “if dysenteric stools gain access to water it is most probable that such water, if used for drinking, would spread the disease, as in enteric fever and cholera. Proof of this is not, however, forthcoming at present.”

I cannot quite remember when I first became aware that dysentery should etiologically be rouped with cholera and enteric fever, but I recall vith great distinctness an incident which occurred uring the reoccupation of the Sudan shortly after 895. An English regiment, during a forced march n hot weather near Dongola, exhausted their rinking water and, maddened by thirst, rushed to n obviously unclean pond which they came upon owards the end of the day. As a direct consequence ome 150 soldiers of this regiment developed ysentery, while three weeks later 50 men from the ame regiment were down with enteric fever. The fficers believed that this one indiscretion caused 2 deaths.

Profiting again by the analogy of enteric fever, ve now firmly hold the conviction that dysentery an also be conveyed to man by contaminated food, y flies, and by human carriers. Even now it is ot universally recognised that dysentery, under ertain circumstances, is communicable from man o man, and that isolation is as necessary in this lisease as in enteric fever. The Japanese army ncludes enteric fever and dysentery among the nfectious diseases which have to be isolated. Because malaria has so often in the past been hought to be a cause of dysentery, I should perhaps nention that, though the two diseases are frequently found to be coexisting, we do not now believe that either malady is the cause of the other, nor do we any longer think that drinking water from a marshy district can by itself produce nalaria. There is, however, in warm countries a nalarial enteritis which simulates true dysentery, and of this I am convinced, because I have twice suffered from it.

During the construction of the Panama Canal the Americans were confronted with the three local scourges—yellow fever, malaria, and dysentery. Their success in lowering the death-rate of dysentery, chiefly by improving the water-supply and by preventing flies from breeding, deserves to be mentioned here. The average dysentery mortality among canal employees during the French régime was 3·79 and under the Americans 0·60 per 1000; thus, though the number of workmen had increased sevenfold, the death-rate was more than six times less than the average of the years 1881–1903. In the city of Panama the dysentery deaths fell from 8·93 in 1884 and 11·70 in 1902 to 0·51 in 1912, and even to 0·30 in 1911 per mille. During 1913 there were no deaths from dysentery among the 11,943 white employees and only six deaths among the 45,000 others.

DIFFERENTIATION OF THE TWO TYPES.

A good epitome of the evolution of our knowledge of dysentery before the differentiation of the two chief types, amœbic and bacillary, was given last year by Sir Leonard Rogers,[12] and I may now briefly refer to the separation of clinical dysentery into the two varieties amœbic and bacillary dysentery, for which we are indebted to microscopical and bacteriological research. In 1859, at Prague, Lambl first found living amœbæ in the fæces of a case of infantile diarrhœa, and in 1873 Lösch, at St. Petersburg, again found amœbæ in a case of chronic dysentery.[13] He injected fresh fæces containing these amœbæ into the rectums of four dogs, and produced in one of them dysenteric symptoms. Three weeks later this dog was killed, when dysenteric ulcers were found in the rectum, and amœbæ were present which Lösch named amœbæ coli. After looking at his drawings you will agree that his paper was well illustrated, but we now believe that he was dealing with what is to-day called Entamœba histolytica.

Other observers found amœbæ present in the motions of healthy people, so that these protozoa were still considered to be of doubtful etiological importance until Koch, in 1883, in Alexandria, and later in India, not only discovered the cholera vibrio but also amœbæ in sections of human intestines. He was then at the height of his fame and was a most stimulating teacher. Inspired by the enthusiasm which we all felt for him at that time, Kartulis investigated all the cases in his hospital in Alexandria, and eventually found amœbæ present in 500 dysenteric patients, while they were absent in other individuals. He also found amœbæ in sections of the intestines and in the pus and walls of liver abscesses.[14] He defined two types of dysentery, that due to amœbæ, which he called "endemic," and another due to bacteria, which he suggested was "epidemic."

In 1890 Osler corroborated the discovery of Kartulis by finding amœbæ at Baltimore in a case of dysentery with abscess of the liver, which had originated in Panama. A series of similar cases in the wards of Johns Hopkins Hospital was then described by Councilman and Lafleur, who introduced the term "amœbic dysentery." In 1893 Kruse and Pasquale re-investigated the question in Egypt, and sought to solve the difficulty in the minds of many observers by suggesting that there were two species of amœbæ, one harmless and the other pathogenic. They also clinched the pathogenicity of the Egyptian amœbæ by producing dysenteric symptoms and lesions in cats by injecting into them, per rectum, amœbæ from dysenteric stools and from the pus of liver abscesses. Ten years later lingering doubts as to whether certain amœbæ were an etiological factor or not were removed by the publication of Schaudinn's paper on the life-history of human intestinal amœbæ, when he christened the harmless one Entamœba coli and the dysenteric one Entamœba histolytica.

In order to explain the etiology of the non-amœbic type of dysentery every few years since 1869 bacteriologists competed in the task of isolating a specific dysenteric bacterium from the very varied flora of the intestines. But it was not until 1898 that Shiga published his successful results of a study of epidemic dysentery in Japan. He had no lack of material at hand, for in 1897 there were 89,400 cases, with 22,300 deaths. In 36 cases which were investigated Shiga's dysentery bacillus was found either in the fæces or in the intestinal mucous membrane. He also proved that his bacillus agglutinated with the patient's blood under certain circumstances. In 1900 Flexner in Manila discovered Shiga's bacillus and also another differing slightly from it, which is now called Flexner's bacillus. Since then Kruse and many others in Europe have confirmed the existence of the two bacilli, while Strong and Musgrave had the opportunity of proving by a crucial experiment the pathogenicity of the Manila variety. A Filipino prisoner under sentence of death agreed to swallow cultures of the bacillus. Characteristic symptoms of dysentery immediately appeared, the bacilli were obtained in culture from the stools, and then the man was fortunate enough to recover. Flexner tells us that one of his assistants accidentally aspirated into his mouth a small quantity of a culture of the dysentery bacillus; in spite of thorough and immediate disinfection of the mouth a sharp attack of dysentery followed, which ended, however, in recovery.[15]

Sceptics who maintained that amœbic dysentery was unknown in India and some other warm climates have now been converted, and the broad fact is well established that most of the dysentery of the tropics is amœbic, while much of the dysentery of temperate climates is bacillary. Bacilli are not, however, always absent from amœbic cases. For the last few years attention has been chiefly directed to the life-history of the amœbæ.

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BULLET WOUNDS IN WAR.

By W. G. TOTTENHAM POSNETT, F.R.C.S. Irel.

At the present juncture, and in view of the fact that some of us are already being called upon to treat our soldiers for wounds inflicted by the enemy's bullets, I have looked up my old notebooks relating to my experiences during the Boer war and Zululand rebellion of 1906 in the hope that the knowledge gained may be of use to others who have not had the advantage of previously treating cases of rifle wounds.

During 1900–01–02 I attended to close on 1000 wounds caused by rifle bullets, and in those cases where the necessity of the case demanded performed operations of various sorts. Having had the advantage of being in charge of the surgical wards of a large general hospital during the Boer war, into whose beds many severe surgical cases were sent, I think I may fairly claim to be able to speak with some slight authority on the subject.

The wounds made by the high velocity bullet propelled by the explosion of cordite are of the most varied description, and each case requires to be treated according to the necessities of the conditions present, so that no hard-and-fast rule can be laid down, but every wound will require to be treated with the greatest circumspection. The bullets at present in use are somewhat different in shape from those used in South Africa, being more pointed, with a considerably lower trajectory, and whether this will inflict a wound of a different character to those seen during the Anglo-Boer campaign one cannot surmise. The present-day bullet is formed of a shell of hard nickel filled with lead, and in many cases of wounds this outer casing will be found to complicate matters to a considerable extent.

The distance at which the wound is received is of considerable importance. The wounds I saw varied greatly according to whether the person injured were close to or far from the rifle. It seems that the modern rifle bullet has great penetrating power at what one may call the middle distance, from 300 to 900 yards range, and that wounds, even where bones are implicated, received at this distance are of a more penetrative character than those receiv at a closer, or longer, range. The smashing pow of a bullet up to 300 yards is considerable, and gre comminution of bone is to be expected in woun received at that distance, or under it. The sa applies to wounds received at 900 yards or ov where the smashing power of the bullet is aga considerable and bone injuries of the most serio magnitude are inflicted.

The high velocity nickel-covered bullet is mo or less aseptic, and wounds of the soft parts not tend to suppurate unless a piece of clothi has been carried into the wound. Bullets goi completely through a limb or body seldom a followed by suppuration of the wound. As a rul the wounds of soft tissues are not of a serio nature, the bullet passing clean through them; t wound of entrance and that of exit, which a usually about the size of a threepenny piece, clo rapidly under simple dressings. If in its flight bullet happens to hit a hard object and ricochet the wound inflicted may be a large lacerated on A ricochet bullet frequently has its nickel coverin torn open forming a jagged mass, or the whole ma be mushroomed; wounds of soft parts made b projectiles in this condition are of a serious natur generally suppurate, and take a long time to heal.

When a bullet strikes a bone in its course throug the body or a limb, if the wound be received at th middle distance, the bullet may pass clean throug the bone without doing any serious damage. Sometimes the nickel covering is stripped off and remain in the wound, the lead core continuing its flight. I on the other hand, the wound be received at clos range or over 900 yards, bones struck are shattered as a rule, into many fragments and the wound o exit is very large, but I have seen cases where lon bones have been smashed into many fragments an yet the exit wound was only the same size as tha of entrance.

A clean wound of the abdominal viscera will i most cases heal readily and will require very littl in the way of treatment; multiple abdomina wounds may require to be operated upon, but the are best treated expectantly for a few days unti symptoms of some local trouble arise.

The following notes of specific cases are interesting and instructive.

Head Wounds.

Case 1.—The patient, aged 24, had been wounded three days before admission. Distance about 450 yards. The bullet entered the skull an inch above the left eyebrow and passed out at the vault; no symptoms of compression or brain injury. Treatment consisted of rest in bed, and the patient recovered.

Case 2.—The patient, aged 21, had been wounded 48 hours before admission, at what distance was not elicited. There was a large wound behind the left ear, and the skull was splintered. The bullet—evidently a spent one—did not penetrate: The soft structures were turned back in a flap, the bone splinters were removed, and the edges of the bone wound were trimmed. The brain was lacerated. The patient recovered with slight aphasia.

Case 3.—The patient was 27 years of age. Distance 500 yards. The bullet had entered the external table of the skull above the left ear and had ploughed a wound 2 inches long in the bone. There were no compression symptoms and complete recovery resulted. (*Note.*—The subjects of serious head wounds seldom leave the field.)

Wounds of Thorax and Abdomen.

Case 4.—The patient was a private, aged 24, who had been wounded two days before admission while lying down taking aim. Distance about 480 yards. The wound of entrance was above the left collar-bone, and that of exit inside the left knee 2 inches above the joint. No special symptoms. This bullet must have passed through many important organs, and yet there was no serious damage done. Complete recovery ensued.

CASE 5.—A patient, aged 24, who had been struck by a bullet while in a stooping position. Distance unknown. The bullet had entered 2 inches inside the right nipple, had passed backwards and downwards, and its point of exit was 7 inches lower in the back than that of entrance. Both wounds were small and clean. The patient spat blood for three days in small quantities. No bone was injured. Recovery was complete in 20 days.

CASE 6.—The patient, aged 26, had received a bullet wound at a distance of about 80 yards. The bullet had passed between the fourth and fifth ribs, 1 inch outside the nipple line, its point of exit being through the fifth rib behind. The wound of entrance was small and clean, while that of exit was of the size of a crown piece. The fifth rib was fragmented. Treatment consisted of excision of the comminuted part of the rib, and complete recovery followed.

CASE 7.—A patient aged 26. Distance about 500 yards. The bullet had entered the right shoulder, had passed through the head of the humerus and the glenoid cavity, across the upper part of the thorax, through the left shoulder-joint, passing out through the head of the left humerus. The wounds of entrance and exit were small and clean. The patient spat some blood immediately after receiving the wound and complained of great "stiffness" in the upper part of the chest and in both arms. There were no physical signs of lung injury, emphysema, or hæmothorax. Treatment included hot fomentations to both shoulders, massage, and passive movements. In three weeks the patient was transferred to the convalescent part of the hospital. Six weeks afterwards I was asked by my colonel to see a case in the enteric wards which was puzzling the medical staff, and it turned out to be the case which I have just described. The temperature had for four weeks been spikey, oscillating between 97·5° and 104° F. The respirations were 34 and shallow. No signs of enteric. The left thorax was dull and there were no sounds of respiration. Empyema was diagnosed, and the patient was removed to my surgical ward on the next day. I removed part of the ninth rib on the left side and evacuated four and a half pints of pus. Recovery was complete. I met this man five years afterwards in excellent health.

CASE 8.—A patient aged 32. Distance about 400 yards. While lying down he had been wounded in the right side of the thorax, the bullet entering between the sixth and seventh ribs in the nipple line, and passing downwards and backwards through the diaphragm, liver, right kidney, and out through the back. Blood was passed in the urine twice, and great stiffness in the right side was complained of. Complete recovery in three weeks.

CASE 9.—A patient aged 24. Distance unknown. The bullet had passed through the thorax from right to left. The wounds were small and clean. There was considerable dyspnœa, and the patient had to sit up. The heart must have been traversed by the bullet, for the pericardium was distended with blood. He was carefully watched by a special orderly, and he recovered slowly without any operation. In seven weeks recovery was complete.

Wounds of Abdomen.

CASE 10.—A patient aged 27. Distance over 500 yards. Whilst riding for cover he was shot in the back, the bullet entering below the twelfth rib on the left side and passing upwards and forwards, its point of exit being in the abdominal wall 2 inches to the left of the mid-line and 3 inches below the ensiform cartilage. The stomach must have been traversed as well as the intestine. Recovery was complete without any operation.

CASE 11.—The patient, aged 19, while galloping out of an ambush, was struck in the back at a distance of probably 300 yards. The bullet entered through the right ilium and passed out through the abdominal wall 3 inches to the right of the umbilicus. The wounds were small and clean, and recovery was complete in seven days.

CASE 12.—A patient aged 26. Distance unknown. At the battle of De Wettsdorp he had been struck in the back while carrying a message through severe rifle fire. The bullet had entered the right lumbar region 2½ inches from the vertebræ, and had passed out 1 inch to the left of the umbilicus. The shock was very severe, and the patient could not be moved for two weeks from De Wettsdorp. The entrance wound healed. Exit wound: granulation tissue; pus exuding. There was great pain round the abdominal wound on pressure. Temperature 102° F. The abdomen was opened and about half a pint of pus was evacuated from a localised septic peritonitis. The bullet wound seen in the coil of intestine was completely healed. Recovery complete.

Wounds of Limbs.

CASE 13.—The patient, aged 32, was struck behind the left knee at a distance of about 1000 yards. The wound of entrance was small and clean. No exit. There was great tenderness on pressure over the head of the tibia in front. The X rays showed the bullet to be lodged in the head of the tibia near the surface. The bone was removed to a depth of a quarter of an inch, when the bullet was exposed and removed. (*Note.*—This bullet had entered base forward, but there was no splintering of the bone.) Recovery was complete.

CASE 14.—The patient, aged 21, had been hit on the right shin at a distance of 1000 yards. The wound was over the right tibia, and was 1 inch long. No exit. The X rays revealed the position of the bullet in the tibia near the surface. At the operation the bullet was found embedded in the tibia, having entered lengthways. It was removed and complete recovery followed. (*Note.*—Evidently the bullet had been fired from a worn rifle.)

CASE 15.—The patient, aged 24, had been struck in the right elbow at a distance of about 150 yards. The entrance wound was at the inner side of the head of the ulnar, and the exit wound outside the ulnar 1 inch lower. The X rays showed the olecranon to be separated 1½ inches from the ulnar, and the head of the ulnar to be fractured into three pieces. The wound of exit, which was of the size of a shilling, was dressed daily until it healed. The fragments of the head of the ulnar were wired into place, the olecranon was brought down and wired, and passive movements were practised on the fifth day. Recovery resulted, with an excellent arm.

CASE 16.—A patient, aged 33. Distance unknown. He was struck inside the thigh 2 inches above the knee-joint. The wound of entrance was small and clean. The bullet had had its exit through the external condyle, and the wound was of the size of a two-shilling piece. An X ray photograph showed extensive comminution of the lower three inches of the femur, implicating the joint. The blood-vessels evidently were uninjured. The wounds were dressed daily until they healed. Recovery followed, with a stiff knee after a long illness. (*Note.*—The femur was smashed into about eight pieces.)

These few notes have been taken at random from my note books without any attempt at choosing the cases. It will be seen from the cases quoted that bullets may pass through the most vital tissues without doing any permanent injury. The structures injured in the course taken by some of these bullets would give food for reflection on the part of anatomists.

In the treatment of bullet wounds it must be remembered that there often is great initial shock. The soldier frequently goes into battle in a hungry condition and is more or less tired by marching, and the receipt of a severe injury while in this state is accompanied by shock to the whole system. His mental state while engaged with the enemy also probably contributes its share.

The impact of a bullet against the body is very severe. One patient (the subject of Case 11) who was struck through the right ilium told me that he felt as if he "had been hit by a crowbar wielded by a giant," and that he had been thrown three or four yards out of the saddle.

An empty stomach is frequently the salvation of a wounded soldier who has been hit in the abdomen; a wound of the stomach or intestines seems to close rapidly without any trouble, and so long as there has not been any leakage of gastric or intestinal contents the patient will probably recover in a short time, but if leakage takes place symptoms of localised peritonitis may be expected, which will require a laparotomy.

Wounds of the bladder usually require a suprapubic cystotomy, as they do not heal readily and generally leak into the surrounding tissues. A clean wound of the kidney seldom requires any interference, but I have had to remove a kidney for a wound which cut the ureter across about 2 inches below the renal pelvis.

What may be called local shock is a condition sometimes encountered in wounds of the soft parts. The great velocity of the bullet seems to shake up the tissues for some little distance round the wound, with the result that there is a feeling of considerable stiffness in the part for several days, and nerves in the immediate neighbourhood, although not touched by the bullet, may be the seat of more or less neuralgic pain for a considerable time. Tissues in this condition are not favourable for operative proceedings, as I found there was a tendency to delay in healing. It is better, if possible, to wait a few days for this local shock to pass off before proceeding to operation.

These notes, based on a personal experience, may be of use at the present juncture, and I hope will be a help to those called upon to treat bullet wounds for the first time.

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ON SOME SIGNS AND SYMPTOMS OF HYPOTHYROIDISM IN SCHOOL CHILDREN.

BY J. LAWSON DICK, M.D. EDIN., F.R.C.S. ENG.

IN the treatment of enlarged tonsils and adenoids by operation one is often struck by the marked benefit produced in certain cases fairly rapidly after operation. Within a month after operation a child who was anæmic, sluggish, dull, and incapable of application to his work will be bright-eyed, alert, and eager to learn. In all probability there is a tendency to operate too frequently and without adequate reason, but in a certain class of case, where the symptoms of obstructed breathing and defective aeration of the blood are well marked, there can hardly be any doubt as to the need for operation. In many of these cases one is frequently struck by a series of symptoms which are fairly constant along a definite line. A typical child will show a certain coarseness of feature, with loose pendulous lips and mouth somewhat open. The complexion is muddy, the general circulation is sluggish, and there is great susceptibility to cold. Such children in the winter are subject to frequent attacks of nasal and bronchial catarrh. The intellect is clouded and dull. Speech is defective, and in many there is actual lalling or stammering. The skin is dry and the hair is coarse and without lustre. In many cases the bones are soft and there is well-marked evidence of rickets. Frequently the incisors show defect in the enamel and a jagged edge of dentine is exposed, a condition which I think pathognomonic of rickets in early infancy.

Now, these children are decidedly backward, and are frequently sent by the teacher for medical examination as suitable for a special school. But they belong to a class different to what we understand when we speak of the mentally deficient child. If the general health conditions of these children are improved, the mental condition will also improve, and the child rapidly returns to the normal standard. In other words, there is no true mental deficiency, but merely delayed development. Study of the symptoms will show that they are all of the nature of defective nutrition, and readily fall into line with the signs and symptoms which we now know to be associated with defective action of the thyroid or hypothyroidism.

In a certain number of cases the children are well nourished, and the flabby, pasty appearance of the child will often suggest the possibility of lymphatism or status lymphaticus. In one such case sudden death occurred under the anæsthetic during an operation for tonsils and adenoids. The child was plump and well nourished, the parents belonged to the better class, and the conditions were presumably all favourable. In other words, we often get deficient thyroid action associated with signs of over-action of the thymus and lymphatic system generally.

Recent work on the internal secretions has been of absorbing interest, and must modify many of our views on the disorders of nutrition. Particularly will this be the case with regard to rickets. There has been, and there still is, a tendency to consider rickets an infective condition, in spite of the fact that neither a specific bacterium nor a toxin has been discovered. But recent work on the thyroid apparatus, and especially work on the parathyroids and the calcium nutrition, makes it much more probable that the ultimate cause will be found in some failure of the internal secretions. The natural result of the success of the treatment of myxœdema and cretinism by thyroid extract has brought about a tendency to prescribe thyroid in all kinds of conditions, often in overwhelming doses, and to give up treatment straight away because the results are not as marked as in the treatment of myxœdema. In the case of the thyroid in its relation to cretinism and myxœdema, we are in the fortunate position of having an internal secretion which is fairly stable and which can easily be administered by the mouth. We have to deal with a gland developed from the ventral surface of the pharyngeal tract and connected by the thyroglossal duct with the alimentary canal, a duct represented in the adult by the foramen cæcum placed behind the circumvallate papillæ of the tongue. So that at some remote period the thyroid, whatever its function then was, apparently poured its secretion directly into the alimentary canal. But in the case of most of the internal secretions the facts are not so simple, and Starling's work on hormones has shown how delicate and complex the interaction between the various glands and tissues of the body probably is, and we can understand how futile it is to hope to be able to harness each secretion as a glycerine extract and apply it to its specific purpose. Thus if we take the various glands of the body supplying an internal secretion—viz., the thymus and lymphatic system, the thyroid apparatus, the pituitary and sexual glands, and the suprarenal bodies—there is no one definite function which we can ascribe to each secretion. There is coöperation and friendly antagonism amongst the various glands, and the sum of their various activities in all probability controls and stimulates growth and nutrition.

The thymus with some reason is held to be conservative or inhibitory in its function, and may be said to be anabolic. In all probability it holds in restraint the activities of the thyroid, whose function is katabolic. The lymphatic system is at its highest development during infancy, the period when growth takes place, apparently out of proportion to the amount of food taken in. There is at this time a relatively greater number of leucocytes, and the spleen, lymph glands, and Peyer's patches are well developed. Adenoids at such a time tend to develop and the general symptoms of lymphatism are likely to appear. It is probable that in these cases, when the physiological process becomes excessive, there is an over-action of the thymus because of the loss of the katabolic influence of the thyroid secretion, and that the balance between the two glands has been lost. Clinical observation of the backward children I am speaking of certainly bears out the fact that there is increased thymus activity and diminished thyroid activity, and that the results are far reaching and pernicious, especially during the child's school years.

In speaking of the thyroid gland it has been shown that we must rather speak of the thyroid apparatus and differentiate between the thyroid and parathyroid glands, for though each is able to take on compensatory activity in the case of injury or disease of the other organ, or possibly to act vicariously in its absence, still each has special functions of its own. The parathyroid glands have been shown to be associated in quite a special way with tetany. Now, tetany is a disease frequently associated with rickets and with gastric and intestinal disturbance in young children. The work of Loeb on the calcium metabolism of the body is of great interest and importance. The Ca ions which are necessary to all forms of life act as inhibitors of muscular activity, and if it were not for the presence of Ca ions in the blood Loeb showed that all the skeletal muscles would be in a state of constant rhythmic contraction. In other words, calcium in the blood reduces neuromuscular activity. Excision of the parathyroids in animals produces tetany to a certainty, and in tetany there is a marked deficiency of calcium in the organism. Probably in man also parathyroid insufficiency is the cause of tetany, and in children tetany has been found associated with such conditions as hæmorrhages into the parathyroids. Fleischman found that the teeth of all persons he examined who had a history of infantile tetany showed deficiency of the enamel, owing to disturbance of the calcium metabolism.

Two facts bear evidence to a functional activity between the thyroid and parathyroid glands. First, that in post-operative tetany treatment by thyroid gland has been found very efficacious; and secondly, after extirpation of the thyroid gland hypertrophy of the external parathyroids is likely to occur, and similarly hypertrophy of the thyroid not infrequently follows removal of the parathyroids.

These two glandular systems, then the thymus and lymphatic system and the thyroid, including the parathyroids, are largely concerned with growth and nutrition in early childhood. The thymus has a comparatively short life-history. According to Friedenleben it shows a period of progressive development and growth during the first two years of life, after which retrogressive changes occur until adolescence, when involution is fairly complete. That the thyroid is functionally active very early we know from the fact that in cretinism symptoms constantly appear as early as the sixth month, whilst by the end of the first year and during the second year the signs of cretinism are often well marked, but the thyroid remains functionally active long after the period of actual growth is finished. There is undoubtedly a close association between the thyroid and sexual glands. The enlargement of the thyroid at puberty is so common as hardly to be considered at all abnormal, whilst temporary enlargement also tends to occur during menstruation, pregnancy, and lactation. Evidently at these times some special demand is made on the thyroid apparatus, and failure, especially during pregnancy and suckling, is not at all uncommon, as we might expect. So much is this the case that the tetany of nursing mothers was called by Trousseau nurses' contracture. In such cases there is evidently an excessive drain of calcium from the tissues and at the same time the absorption and assimilation of calcium is imperfect. This would suggest that in some disturbance of the action and interaction of the thymus, thyroid, and parathyroid glands we have probably the true explanation of the cause of rickets. Formerly it was taught that if you found that a child had been brought up on the breast you could for all practical purposes exclude rickets. This has by no means been my experience. Constantly in ordinary school work one comes across a succession of children all breast-fed, who are nevertheless all rickety. And when one looks at the depraved conditions under which the mothers live with their children, it would be a matter for surprise if such a mother could ever have a healthy child.

In one school, for instance, in North London recently, where I noted a large number of markedly rickety children, a voluntary worker in the care committee, who had gone into the social conditions of the school with commendable thoroughness, assured me that in this school of 1200 children the large majority of the parents, certainly well over 50 per cent.—her impression was about 80 per cent.—earned less than £1 a week. The families were large, and most of them lived in two or three rooms under very bad conditions. Naturally the rooms were dirty and uncared for, the paper was hanging off the walls, and fresh air and sunlight were excluded as far as possible. Intemperance, as we might expect, still further aggravated the conditions and completed the vicious circle. Prolonged lactation amongst these mothers is the rule, often with the idea of preventing fresh pregnancy and so limiting the size of the family. In these cases there is very likely to be exhaustion of the thyroid, which probably shows itself in the lack of some vital principle from the mother's milk, whilst the persistence of the depraved conditions reacts harmfully on the child and prevents the proper development of its own secretions which might remedy the defect. The poor quality of the mother's milk is not sufficient to explain the tendency to rickets. Thus no deficiency in diet or error in feeding will develop rickets in the karoo of South Africa. The hygienic conditions there are often bad, and ignorance of proper infant care is at least as prevalent as at home, but in the glorious sunshine and the pure rarefied air of the great stretches of open country rickets will never develop. During several years' residence there I can only remember one fairly definite case either amongst the native or the white population. No error in diet will produce rickets under such conditions. Generally, rickets is not common in tropical and subtropical countries. But that there is no special race immunity is shown by the fact that the negro and Italian races suffer severely in the cities of America. And the same applies in London.

Recently in examining a Roman Catholic School, in an Italian family of six, four of the children showed such marked symptoms of hypothyroidism as to suggest cretinism. They were exceedingly dull and backward, and what one often sees in these children they were moody, vicious, and uncertain in temper. In Canada, though the winter is prolonged and cold, rickets is rare owing to the healthy open-air life. In Vienna, with its double windows and air burnt up by hot stoves, rickets is excessively common. In most cases the blemish of rickets produces permanent effects on the individual, and probably accounts for a good many half failures in after life. But in many wonderful improvement takes place when the child becomes to a certain extent independent of parental authority, and is allowed to lead a more healthy and natural existence by being given the freedom of the streets and of the open air. That the child becomes much stronger at 7 is a common belief amongst mothers and probably has definite grounds in fact. There can be little doubt that sunshine and fresh air are essentials for the proper development of the thyroid and its secretions.

Bearing upon the point that hypothyroidism in the mother can affect the offspring, it is interesting to note that in rats parathyroidectomy of the mother has been known to have a distinct influence on her young. The young were found to be highly sensitive to electrical stimuli, probably due to deficiency of calcium in the blood. Again, the offspring of these rats were so susceptible to parathyroidectomy that in from 4 to 18 hours after operation they succumbed to tetany in its severest form. Achondroplasia is a condition probably allied to rickets, and Seligmann has pointed out that achondroplasic cows are peculiarly liable to produce cretinous calves. Among human beings sporadic cretinism and achondroplasia may occur in different children of the same family. Achondroplasia, obesity, rickets, and myxœdema have been found to coexist in different members of the same family.

Amongst the poor economy and convenience both suggest that the mother should bring up her child on the breast, and as a rule she does, but often with disastrous results. There is a high mortality amongst the children, and the survivors may be stunted, backward, and rickety. It seems to me probable that in these cases the mother's milk lacks some secretion normally supplied by the thyroid and parathyroid glands, and that the lack of this secretion produces disturbance of the calcium metabolism and of the general nutrition of the infant. Leonard Williams has pointed out that in cases of faulty calcium metabolism large quantities of calcium may be administered without effect, whereas small doses of thyroid extract will often produce an immediate beneficial effect on the metabolism even though no calcium beyond that taken in the food is given. In rickets we probably have to do with defective secretion of the thyroid apparatus and a tendency to over-action of the thymus and lymphatic system. In the association of lymphadenoma with osteomalacia we have an example of softening of bone with increased lymphatic activity occurring in later life. The thymus, like a sluggish gland, thrives in depressed conditions, but the thyroid, for its proper activity, requires free circulation of properly oxygenated blood, as indeed is evidenced by its extreme vascularity and the ease with which it swells when any special demand is made upon its activities. Wide streets and ample window space will do much to dispel rickets even in the face of defective feeding. Much of the improvement in the general health after the operation on tonsils and adenoids is due to the freer respiration and the better oxygenation of the blood giving a fresh start to the whole organism. Tonsils and adenoids, rickets, and the lymphatic state are exceedingly common and are frequently associated together, and in the majority of cases, though not necessarily in all, are dependent on hypothyroidism. Their secondary effects are widespread and entail much waste of energy and money in school work. They are responsible for a large proportion of the dull and backward children. The hopeful point is that these children are not true mentally deficient children, but are capable of great and immediate improvement when given suitable conditions.

Cazenove-road, N.

BRITISH MEDICAL ASSOCIATION.

EIGHTY-SECOND ANNUAL MEETING AT ABERDEEN.

THE SECTIONS.

SURGERY.

President, Mr. J. SCOTT RIDDLE, M.V.O. (Aberdeen).

WEDNESDAY, JULY 29TH.

Mr. W. G. SPENCER (London) opened a discussion on

The Etiology and Treatment of Carcinoma of the Tongue.

He said that cancer of the tongue in its earliest stages could be cured without deformity. It was preceded by an inflammatory condition which might be termed precancerous, though the term was rather too indefinite. He thought that unless absolute improvement going on to healing occurred within a fortnight after removal of the offending cause recourse should be had to surgery. Oral sepsis was a grave complication and increased the rate of growth of the cancer, but as a cause of cancer it at present remained unproven. Pre-cancerous lesions were marked by a proliferation of the epithelium followed by a small cell infiltration and later by a downgrowth of epithelium. Microscopy performed in the operating theatre was the best way of recognising an epithelioma. When the subepithelial connective tissue became invaded the whole of the area with small cell infiltration should be removed with the lymphatics in the anterior triangle down to the omohyoid; no communication should be made with the mouth. If the growth approached the middle line the lymphatics of the opposite anterior triangle should also be removed. When the muscular substance had been invaded the disease should be removed *en bloc.* This extensive operation impaired articulation and deglutition, and the disease was liable to recur. The results of operation were wholly successful if chronic lesions of the tongue were removed before epitheliomatous invasion of the submucous tissue; there was no fear of recurrence, no deformity, and no risk of life. No important deformity occurred when small cell infiltration had not extended into the muscular substance of the tongue; when this had occurred, even after a block dissection, recurrence was to be feared for several years. Inoperable cases were best treated by the continuous use of non-irritating antiseptics and the occasional use of diathermy.

Professor J. KAY JAMIESON and Mr. J. F. DOBSON (Leeds) communicated a paper on

The Lymphatics of the Tongue,

in which they said that the primary glands were the submental, submaxillary, and some members of the deep cervical chain—i.e., the jugulo-digastric gland, the members of the upper deep cervical group on the great vessels at and below the level of this gland, and some members of the lower deep cervical group, notably the jugulo-omohyoid gland, the anterior outpost of this group which lay on the central tendon or anterior belly of the omohyoid. There were three sets of vessels—marginal, central, and posterior—which ran to the primary glands without interruption. Vessels from the tip and region of the frænum might cross the middle line and reach glands of the opposite side. Some central vessels from the right side of the dorsum might cross the middle line and reach the glands of the opposite side. Some central vessels of the dorsum passed outwards to the opposite glands. The posterior vessels often bifurcated; only the lateral marginal vessels were confined to one side. The deep cervical glands received vessels from all parts of the tongue, the submaxillary from the area of the circumvallate papillæ, and the submental from the tip and frænum. In cases of cancer of the tongue complete removal of the lymphatics could only be effected by a block dissection. A bilateral operation should be performed for growths of the tip, frænum, and back part of the tongue.

Mr. CHARLES P. CHILDE (Portsmouth) thought that early removal held out the only hope in cases of carcinoma of the tongue. In a doubtful case a microscopic examination should at once be made. Before excision of the tongue the lingual artery or arteries should be ligatured. The glands should be dissected out first; half the tongue should be removed at the same time if the patient were in a fit condition. If a fortnight was allowed to elapse between the two, cancer cells might be carried from the tongue to the neck and lead to a subsequent recurrence. If the operation were performed in two sittings the glands must be removed first, as patients sometimes refused to submit to the second operation for gland dissection. If the disease was situated far back or in the mid line the tongue and glands on one side should be removed and the opposite lingual artery tied; at the second operation the glands of the opposite side should be removed. When the frænum or the floor of the mouth was infected operation might have to be performed in three stages. Reduction in the mortality of cancer was dependent on education of the public in the early signs of cancer, and he hoped that municipal authorities through their health departments would take up this important matter.

Mr. W. MCADAM ECCLES (London) said it was an interesting fact that in those cases in which there had been a pre-existing condition apparently favouring carcinoma only one patch became malignant. Similar conditions were found in the mucous lining of the bladder and in the skin after X ray damage. He asked why did one patch become malignant and the others remain innocent? In cases of carcinoma of the tongue free removal of the glands was the most important part of the operation; the glands should be dealt with first. He agreed with Mr. Spencer that the portion of the tongue removed should go beyond the small cell infiltration.

Mr. E. W. HEY GROVES (Bristol) thought that a V-shaped division of the jaw gave the best exposure, and he recommended the use of intratracheal ether.

Mr. T. K. DALZIEL (Glasgow) thought that intratracheal ether was preferable to tracheotomy.

Professor F. M. CAIRD (Edinburgh) denied the existence of a pre-cancerous stage and the association of cancer with syphilis.

Mr. A. LUCAS (Birmingham) thought that 50 per cent. of cases were associated with syphilis and hard arteries. The recognition of the pre-cancerous stage was important, and he thought that Syme's was the safest operation.

Mr. SIDNEY A. BOYD (London) read a paper on

The Newer Indications for Removal of the Spleen.

He gave a short account of splenic anæmia, chronic acholuric jaundice, pernicious anæmia, splenic anæmia of infants, Gaucher's disease, splenomegalic cirrhosis, acute yellow atrophy of the liver, and simple splenomegaly. He gave indications for treatment and thought that splenectomy benefited all these conditions. He mentioned three cases in which he had performed splenectomy.

Mr. W. I. DE COURCY WHEELER (Dublin) related the end results of three cases of abdominal ameurysm treated by Colt's apparatus. The first case was now alive and well after four years. The consolidation of the aneurysm was such that the points of the wire could be felt through the abdominal wall under the skin. He thought that this was due to the obliteration of the cavity in which the wires had been originally placed. The second case was seen nine months after operation; he passed a medical board and subsequently became a chauffeur. The third case died from intestinal obstruction. He strongly urged the use of Colt's apparatus and condemned electrolysis. The symptoms were increased for the first few days after operation, especially pain in the back. His cases had first been treated with salvarsan and mercury; immediately after operation horse serum was injected to favour coagulation. He thought that the secret to success, next to asepsis, was the introduction of the cannula so that blood flowed freely through it before the wire was inserted, otherwise the lumen might not be reached.

THURSDAY, JULY 30TH.

Mr. ROBERT JONES (Liverpool) opened a discussion on

The Surgical Treatment of Arthritic Deformities.

He said that cases classified as tubercular were often hereditary, septic, or nervous in origin, as the deformities were very similar. The deformities might appear either early or late, and they always reflected discredit on someone. Prevention of deformity was more important than its correction. In view of the possibility of ankylosis joints should be placed in the position of maximum use. Full extension was the best position in which to place the hip and knee, though a little flexion was no disadvantage; the ankle should be fixed at a right angle, the elbow a little below: the wrist should be kept hyperextended. Tubercular deformities should be corrected in the active stage, without force, slowly and gently. When the deformities were fibrous in character mechanical measures were sufficient to overcome them; when bony deformities had taken place more radical measures were necessary. Bony ankylosis was rare in children, fibrous or unsound ankylosis increased with use, whilst bony ankylosis was fixed. Tuberculosis in the young was benign, but in the adult it was very different and required early and radical treatment. He said that manipulation, osteotomy, wedge exsection, exsection of the joint, pseudoarthrosis, arthroplasty, and transplantation were the necessary procedures for deformities in the short fibrous and osseous type. Manipulation with extension could be employed in young children. Osteotomy was most successful on the femur for deformities of the hip and knee with bony ankylosis. Transtrochanteric section should be performed if the neck was not absorbed, but a wedge-shaped osteotomy through the base of the trochanter if absorption had taken place; the wedge shape was necessary to secure sufficient abduction, but should not be performed if flexion were acute. He thought that subtrochanteric division should be reserved for cases of unsound ankylosis with but little flexion. Bony ankylosis of the knee should be treated by removal of a suitable anterior wedge. For bony ankylosis of the shoulder osteotomy of the neck should be performed and the arm rotated inwards and abducted. He said that of recent years attempts had been made to mobilise ankylosed joints. Arthroplasty entailed separation and remodelling of the bones with the insertion of a flap of tissue; it was immaterial what tissue was used. It was difficult to obtain good results in the knee. Bony spinal fixation was useful in an adult with deformity of the lower lumbar region; deformities of the rheumatoid or septic group once the disease had ceased were amenable to radical measures. Deformity must be anticipated; arthroplasty was useless without stability; osteotomies and exsections were rarely required in children. The deformity from tubercular joints could be reduced. Osteotomy should be performed in sound ankylosis of the hip; the site was dependent on the nature and extent of the deformity. It should be accompanied by division of the adductors. Arthroplasty of the hip was often successful after septic cases. There were now many procedures to give relief in osteoarthritis of the hip.

Mr. C. MAX PAGE (London) thought that it was difficult to maintain the knee in a proper position by the usual forms of splintage. He had found this difficulty to be overcome by the apparatus he had shown before the Royal Society of Medicine. He thought that sound ankylosis of the hip-joint with but little destruction of the head and neck was best treated by manipulation. Spinal anæsthesia greatly reduced the shock associated with operations on the large joints.

Professor J. MARNOCH (Aberdeen) had obtained good results by arthroplasty in cases of ankylosis of the elbow. He utilised a flap from the fascia lata.

Mr. HEY GROVES had found that no bony ankylosis occurred in the knee-joint when actively inflamed. This difficulty could be overcome by a long bone graft taken from the tibia.

Mr. H. M. W. GRAY (Aberdeen) thought that bone grafts were of no use unless they were long. In spinal plastic cases they should be laid against the bare laminæ and the periosteum placed in contact with periosteum.

Mr. **McADAM ECCLES** emphasised the importance of keeping the wrist in a position of dorsi-flexion during inflammation of the joint. He had utilised the prepatella bursa with success in arthroplasty on a child; the bursa was taken from the mother.

Mr. **DE COURCY WHEELER** had obtained excellent results from cheilotomy in cases of rheumatoid arthritis.

Mr. H. S. **ROWELL** read a paper on

The Mechanics of the Human Foot, with Special Reference to Flat-foot.

He (as a professor of engineering) considered the foot under statical conditions, and found that the tensions in the supporting tissues were greatest when the sole of the foot was inclined at 23° to the ground. Statical considerations did not indicate any value either in the method of raising the heel or in the "Thomas-Jones" method of turning the feet inwards and inclining the soles transversely. Dynamical considerations lent favour under certain conditions to the high heel and discredit to the "Thomas-Jones" method. Physiological considerations lent support to both methods and suggested the futility of mechanical analysis.

Mr. **HEY GROVES** demonstrated some new methods employed in the treatment of fractures.

Mr. A. **DON** (Aberdeen) showed how easily a portion of rib could be utilised as a splint in cervical caries.

FRIDAY, JULY 31ST.

Mr. H. M. W. **GRAY** opened a discussion on

Anoci-association, or the Evolution of the Shockless Operation.

He said that after an experience of nearly 20 years he had come to regard local anæsthesia as the chief, the most important, factor in the prevention of pain and shock. General anæsthetics and narcotics were adjuvants to local anæsthesia. Novocaine in ¼ to ½ per cent. was nonpoisonous. This could not be said of general anæsthetics or narcotics. Ether and to a greater extent chloroform, from their chemical action, exerted an undesirable effect on the brain cells. Morphia and omnopon had not this effect, and they prevented cerebral irritation. For this reason he preferred narcotics to general anæsthetics. This method reduced the amount of general anæsthetic to a negligible quantity. Prevention of mental excitement was nearly as important as the prevention of pain; sedatives reduced apprehension. Dr. Crile had aroused fresh interest in the subject, though it still received inadequate appreciation. The use of a general anæsthetic prevented a proper appreciation of Crile's method. Mr. Gray gave an account of the technique of the use of local anæsthesia, combined when necessary with the administration of a narcotic and ether. Elaborate preparation of the patients was unnecessary; external impressions during the preparation and the actual operation should be excluded. After an injection of omnopon the eyes should be covered and the ears stopped. The patient should be properly clothed and the temperature of the theatre regulated. Cutting instruments should be sharp. The tissues, especially the parietal peritoneum, pleura, and mesentery, must not be roughly handled. Accurate and immediate hæmostasis was desirable. Normal saline at 100–103° F. should be used for irrigation or cleansing. The wound should be tightly sutured and a proper dressing applied. In abdominal cases a firm binder had a good effect during the first few hours, as it overcame any tendency of the patient to bleed into his own vessels and allowed the immediate use of Fowler's position. He thought that in view of the immediate and remote effects of anæsthetics it was right to dispense with them as much as possible. Chloroform was the most toxic, and it was rapidly becoming obsolete in surgical practice. Open ether was safer than nitrous oxide without a skilled anæsthetist; it was cheaper and did not require an elaborate apparatus. By the combination of local anæsthesia and narcotics the amount of ether required was negligible. Ether was only given if the patients remained too sensitive or complained of pain. The best narcotic was a combination of omnopon and scopolamine; a dose of veronal was useful on the evening before operation. He said that he had long ago given up spinal anæsthesia, and now entirely relied on nerve blocking and local infiltration. The intercostal and lumbar nerves should be blocked as near the costal margin and as far back in the loin as possible. In this way the whole of the abdominal parietes could be anæsthetised; the skin and subcutaneous tissues should also be infiltrated along the line of incision. A series of operations could be carried out just as quickly as with the use of general anæsthetics. According to the length of the incision and the depth of the abdominal wall, 100–200 c.c. should be used. After 10–15 minutes the operation could be commenced. Further injections might be required into the peritoneal attachments of the organs operated on. The pulse gave a fair indication of the amount of shock caused. Young adults in whom the dose of omnopon had not been sufficient to make them sleep frequently had a meal on returning to bed. When larger doses had been given patients often slept for four to six hours, and woke up without any knowledge of the operation having been done. In the large majority little or no pain was complained of after. The solution he used consisted of novocaine ¼ per cent., pot. sulph. 4 per cent., and 12 drops of synthetic adrenalin in 100 c.c. The potassium salt enhanced and prolonged the action of the novocaine. He recommended a syringe with a capacity of 40 c.c. In over 2000 abdominal sections performed in three years only two had suffered from shock. He had endeavoured to combine efficiency, safety, and cheapness.

Mr. C. F. **CUTHBERT** (Gloucester) thought that Crile's method saved both time and trouble. The solution he used was ¼ per cent. novocaine and ½ per cent. urea hydrochloride with adrenalin.

Mr. **DE COURCY WHEELER** thought that general anæsthetics would disappear in the near future, except in rare instances. Crile's method not only prevented shock but also diminished the unpleasant after effects of operation; even in major operations such as pylorectomy no sensation of the operation was felt on the next day. Shock from major operations was prevented mainly by methodical and gentle handling.

Professor J. T. J. **MORRISON** (Birmingham) said that the choice of anæsthetics had been greatly increased in recent years. Spinal anæsthesia deserved a high place in the surgeon's equipment. Compared with general anæsthesia it prevented shock; compared with local anæsthesia it was simple and time-saving. A single injection of 20 drops of tropacocaine sufficed. It had the advantage that the puncture was made away from the field of operation and could be used in septic cases.

Mr. A. **FULLERTON** (Belfast) read a paper on

The Treatment of Vesical Papillomata by the High Frequency Current.

He said that the method was not as yet generally accepted. The application of the current was painful when the bladder wall was approached, but the growth could be destroyed with but little discomfort to the patients and they could follow their employment during treatment. He recorded three cases successfully treated without recurrence.

Mr. **HEY GROVES** demonstrated a form of bed-rest for maintaining the Fowler position.

Dr. G. H. **EDINGTON** (Glasgow) read a paper entitled "A Method of Opening the Abdomen for Appendicectomy."

Mr. **MAX PAGE** read a paper on

The Treatment of Certain Cases of Appendix Abscess.

He said that the rules for the treatment of localised acute appendicitis varied both as to the time of its performance and its technique. Statistics supported the conviction that surgical interference was best adopted within 48 hours, but cases still continued to come to the surgeon after the third day. In these cases there was a likelihood of residual abscess formation. Of 359 cases treated at St. Thomas's Hospital the death-rate was 6·9 per cent.; the mortality was due to the virulence of the pus. He said that there were two ways to obviate this—one was to wait 14 days, when the pus became sterile, the other was to operate so that the pus did not come into contact with uninfected peritoneum. The first method was unsatisfactory; the latter had proved satisfactory, and no death had occurred in 19 cases. The method was to pack off the uninfected peritoneum with gauze and the insertion of a cigarette drain to one side of the inflammatory mass, and to suture the wound.

Mr. D. P. D. **WILKIE** (Edinburgh) read a paper on

Acute Appendicitis and Appendicular Obstruction.

He said that there were two types of appendicular trouble—namely, acute appendicitis and acute appendicular obstruction. The former was characterised by the signs and ymptoms of inflammation, the latter by the signs of an obstructive lesion. In the later stages of both these lesions t was difficult to identify the primary lesion, but an accurate history gave a strong indication. He thought that t was important to differentiate obstruction apart from nflammation, as in the former perforation occurred more rapidly. He said that the causes and sequelæ of appendicular obstruction varied under different conditions, especially diet and fæcal content. The sequelæ of obstruction were a mucocele, empyema, and acute obstruction with gangrene. In the artificially obstructed appendix in cats the effect was dependent on the fæcal content. He concluded that the prevalence of gangrenous appendicitis in Western nations was due to meat-eating.

NEUROLOGY AND PSYCHOLOGICAL MEDICINE.

WEDNESDAY, JULY 29TH.

President, Dr. F. W. MOTT, F.R.S. (London).

The PRESIDENT, after making a sympathetic allusion to the recent death of one of the vice-presidents of the section, Dr. James Neil, of Oxford, opened a discussion on

The Diagnosis and Treatment of Parenchymatous Syphilis.

He declared that the terms parasyphilis and metasyphilis were now out of date in view of the discovery of the spirochæta pallida in the central nervous system of patients suffering with tabes and general paralysis. There was a pathological analogy between sleeping sickness and tabes, and it became necessary to determine the mode of infection of the central nervous system in such cases. After experimental ligaturing of the main cerebral vessels he had found that there was no shrinkage of the brain, and had been able to show that the perivascular and subarachnoid spaces became greatly distended with cerebro-spinal fluid, which he regarded as the lymph of the brain. It was possible to show that there was direct irrigation of the fluid from the subarachnoid spaces to the perivascular spaces and also to the perineuronal spaces. Allusion was made to the work of Noguchi and Moore anent the presence of the spirochæta pallida in the brains of patients dying with general paralysis. He (the speaker) had examined 100 brains of general paralytics, and found the organism in 66. Sometimes it could be discovered in a few minutes; at other times it might be searched for in vain. He described the usual form of the spirochæta, and explained that it appeared to multiply by transverse mesial division. He had remarked that it was often found in great quantity in cases which had previously been treated with intravenous injections of salvarsan or neosalvarsan. It was observed that spirochætæ might apparently break up into granules, but it was a matter of doubt whether these granules might develop again into spirochætæ. There was no evidence of the occurrence of a sexual cycle in the life-history of the spirochæta; in fact, he doubted whether the organism was really a protozoon. The absence of differentiation in structure and the fact that the two ends were alike suggested that the organism was not a protozoon. He believed that the explanation of the elective degeneration in tabes was that the spirochæta developed a proteolytic ferment, which passed in a particular direction owing to its dissemination by lymphatic paths. As far as the treatment of parenchymatous syphilis was concerned, the speaker said he thought tabes was more likely to be influenced by salvarsan and mercury than general paralysis was. He doubted, however, whether salvarsan was of much service in these diseases. He referred to Professor Oppenheim's recent declaration that that drug had in his experience proved unsatisfactory in tabes and general paralysis. It was well to remember that cases of general paralysis often improved spontaneously and quickly. The view he took was that some spirochætæ were more resistant than others, and that for anatomical reasons circulatory stasis in the frontal lobes favoured the selection of that site as a nidus for spirochætæ. He also alluded to the Wassermann reaction, which he considered of extreme importance. Before it came into use he had been able to diagnose general paralysis accurately in only 75 per cent. of cases; with its help he could make a correct diagnosis in 98 per cent. This had reference to the cerebro-spinal fluid. In the blood, provided the technique was reliable and adequate maximum amounts of serum were taken (0·2–0·5), the reaction was positive in just as many cases. The serum test in 300 cases of general paralysis was positive in 98–99 per cent., though sometimes it was only slight or moderate. The address was illustrated with lantern slides.

Dr. FELIX PLAUT (Munich) said he had no doubt that metasyphilis, so-called, was really syphilis. Nevertheless, there were many difficult problems still to be solved. He referred to the question whether there was anything specific in the occurrence of the spirochæta in the brain in general paralysis. Its mere presence was not sufficient to differentiate between lues cerebri and general paralysis; the spirochæta was not characteristic of general paralysis alone. In fact, little was gained by the abandonment of the term metasyphilis. He thought that experimental syphilis would aid much in the clearing up of these difficulties. Two questions suggested themselves for consideration. Was there a special variety of the spirochæta which produced general paralysis, or was there produced a biological modification of the organism in the individual affected? He thought it quite improbable that there were special neurotropic properties in the spirochætæ producing tabes and general paralysis, and inclined to the view that they acquired special properties as a result of their settling in the nervous system. General paralysis was not merely a disease of the central nervous system; in that disease other parts of the body were involved and definite disturbances of metabolism took place. As for treatment, he believed that salvarsan could destroy the spirochæta, but admitted that our methods were still inefficacious. The organism should be combated as soon as ever the body became infected.

Sir T. CLIFFORD ALLBUTT (Cambridge) asked if any distinction could be drawn between degenerative changes in the coats of blood-vessels produced from within and irritative changes produced from without. He himself thought this could not be determined with definiteness. He mentioned cases of syphilitic dementia, and asked if they were to be regarded as larval general paralysis or were to be separated from that disease. He alluded to the characteristic mental symptoms of general paralysis, and pointed out the difficulty of explaining them in view of the scattered nature of the pathological lesions, unless, conceivably, the spirochæta exercised some local action.

Dr. JAMES McINTOSH (London) said that parasyphilis was tertiary syphilis, and consisted of a parenchymatous encephalitis and an interstitial encephalitis. He believed that the central nervous system became affected in the acute stage of syphilis, and that a change took place in the susceptibility of the nervous tissues. Some spirochætæ lay dormant, and later, for an unknown reason, became active. He considered it proved that it was impossible to reach the nervous tissues by intravenous injection of arsenic, and accordingly treatment of parenchymatous syphilis by such methods was a failure. As for intraspinal methods, he and his collaborators at the London Hospital had not obtained any definite or permanent results. He thought that intraspinal methods could have no permanent vogue.

Dr. S. A. KINNIER WILSON (London) said that recent advances in their knowledge of the relation of the spirochæta to tabes and general paralysis made it incumbent on the physician to revise his conception of these diseases. At the same time he felt it necessary to protest against the tendency to regard tabes solely as a disease of the posterior columns or general paralysis as a disease solely of the cortex. These simplistic views were misleading, and too hard and fast a pathology would not help scientific treatment. In tabes it was common to find the spinal cord vessels and the meninges infiltrated to a greater or less extent. The anterior horn cells were frequently not normal. The sympathetic system was frequently involved. In general paralysis there was very much more than a mere parenchymatous disease, in the strict sense. The cord was not normal in general paralysis; the ductless glands, similarly, and the viscera often showed changes. In a word, notwithstanding certain selective actions, tabes and general paralysis were diffuse, unsystematised diseases; at least, diffuse changes always accompanied any systemic changes. He thought that it was desirable to emphasise the importance of the syphilitic virus or toxin, apart altogether from the presence or not of recognisable spirochætæ. Tabes was a common disease, but spirochætæ in that condition were conspicuously rare. He thought, therefore, that treatment devoted to the destruction of spirochætæ was bound to be inefficacious, unless it came at the very earliest stages of infection. Treatment could not be rational until our knowledge of the pathogenesis of these diseases was more complete. His own experience with intraspinal methods was not encouraging.

Dr. W. Aldren Turner (London) referred to 8 personal cases (6 tabes, 1 primary optic atrophy, and 1 general paralysis) where treatment was by the intraspinal injection of salvarsanised serum. In these, subjective symptoms were relieved, but he could not be sure whether to attribute this solely to the action of the salvarsan. No improvement in objective signs had been obtained. The mental symptoms of the case of general paralysis had for the time being improved. In all the cases the pleocytosis of the cerebro-spinal fluid had been reduced. He concluded that the results obtained were no better, no more permanent, and no quicker than those obtained by mercurial treatment.

Mr. J. E. R. McDonagh (London) referred to the leucocytozoon syphilidis, as he termed it, and its life cycle, and said he had obtained evidence of its different phases in nine out of ten cases of general paralysis examined by himself.

Dr. T. Grainger Stewart (London) said it was often difficult to diagnose clinically between parenchymatous syphilis (tabes and general paralysis) and interstitial syphilis (cerebro-spinal syphilis), and the practitioner might have difficulty in deciding what form and method of treatment to adopt. He alluded to the desirability of complete test investigations of clinical cases, and pointed out the unsatisfactory nature of the diagnoses frequently made. He narrated a personal case of spinal syphilis—one apparently of the mixed type above referred to—in which very satisfactory results had followed intraspinal treatment, and he was prepared, if the case continued to progress, to hail it as a cure.

Dr. H. Campbell Thomson (London) said his experience was that intraspinal treatment both of tabes and of general paralysis was unsatisfactory, although the subjective symptoms might improve.

Dr. W. Ford Robertson (Edinburgh) upheld the view that the spirochæta pallida was not the *causa causans* of syphilis of the tabes and general paralysis type. He thought the admission of failure of treatment devoted to destroying the spirochæta proved this, as also the experimental failure to produce general paralysis in animals. He considered that general paralysis was due to a general invasion of the organism by members of the diphtheroid group.

The President briefly replied.

Thursday, July 30th.

Dr. C. G. Jung (Zürich) opened a discussion on

The Significance of the Unconscious in Psycho-pathology.

By way of preliminary remark Dr. Jung said that a thing might be unconscious in two ways: from the physiological standpoint, and from the psychological standpoint. He proposed to deal solely with the latter. By the general term "the unconscious" he meant the sum of psychological events that were not apperceived; all those psychic events which did not pass the threshold of consciousness, but flitted by in subliminal phantom forms, constituted the unconscious. The idea was far from new. Leibnitz had spoken of "perception insensible," of shadowy representations reaching consciousness only in an indirect way. The importance of the unconscious was very considerable; one wished to know what was the relation of this unconscious material to the development of the psychoses. To understand this aright, one had first to ascertain how unconscious material behaved in normal people, and the best method to adopt was to find first what was in consciousness, to examine all the conscious psychic content and then exclude it; the residuum was the unconscious. Dr. Jung showed there was reason to suppose the relation between the conscious and the unconscious was a compensatory one; compensatory vices were part of the essential content of the unconscious; unconscious virtues compensated for conscious deficiencies. There was danger, nevertheless, in expressing the facts in these paradoxical forms; moreover, the thing was not really so simple. The manner of a man's philanthropy depended both on his hereditary character and on the motives involved, and these elements were of signal importance in the determination of conduct. But the fact of compensation was none the less of significance. Dr. Jung then proceeded to discuss where and in what manner the unconscious manifests itself in pathological conditions. Its action was chiefly observable in the development of the psychoses. He held that unconscious psychic events produced many of the phenomena of hysteria and other psychoneuroses. The hallucinations of the insane were the outcome of unconscious processes; they were not derived from disease of brain cells. Hallucinations occurred in normal savages and normal civilised individuals. They were normal psychic events forcing themselves across the threshold from the unconscious in an abnormal way. The normal functioning of the unconscious broke through normal consciousness in an abnormal fashion. In dementia præcox it could be shown that the unconscious obtruded itself unduly. "Mental balance" was a scientific term and not a mere figure of speech. The individual's conscious life might be one-sided, but, failing to realise this, he might battle against his unconscious, that is to say, against what were really compensating elements in him. Lack of harmony between the conscious and the unconscious was at the basis of many psychoses. In paranoia the patient might be constrained to defend himself against external criticism, simply because he was too much threatened from within. The tearing asunder of the pairs of opposites constituted by conscious and compensating unconscious elements explained the pathogenesis of the psychoses and psychoneuroses.

In the absence of Dr. Ernest Jones (London) his contribution was read by Dr. M. D. Eder (London), one of the secretaries. Dr. Jones said there were three main connotations, three current uses, of the term unconscious. 1. The term unconscious was a synonym for non-mental—e g., the unconsciousness following a brain injury or during the administration of an anæsthetic. 2. There was what might be called the "limbo conception." The unconscious was a state of neglect or oblivion: processes relegated to it vanished. It was a purely passive state; it possessed no initiative, no dynamic. 3 The psycho-analytic view of the unconscious was purely inductive, and based on the examination of actual cases. According to this view-point, unconscious elements were incompatible with consciousness, and were therefore repressed by active inhibiting processes. These unconscious elements lived an underground existence; they derived mostly from the infantile period and were predominantly sexual. In a very real sense the child was father of the man. The unconscious was a region of mind which had great potentialities. Its significance for psychopathology was very considerable: (1) it explained otherwise incomprehensible delusions, impulses, phobias, &c.; (2) by the process of sublimation crude unconscious elements might be renounced, transformed, and so utilised for the individual; and (3) it furnished an indispensable key to the treatment of psychic affections.

Dr. Eder referred to the reality of unconscious mental processes as revealed by psycho-analysis, and furnished illustrations of the action of the unconscious mind in the vagaries of certain patients suffering from psychoses. He withheld his assent from the view that the conscious was essentially moral and the unconscious essentially bestial, and expressed his concurrence rather with the views of the unconscious advocated by Dr. Jung.

Dr. W. Leslie Mackenzie (Edinburgh) complimented Dr. Jung on the lucidity of his paper and on the excellence of his idiomatic English. He said the terms unconscious, subconscious, co-conscious, pre-conscious, were questions of definition rather than of fact. He felt there was a tendency to lose sight of the double aspect of mental phenomena when the unconscious was concerned; the study of these must always be a double study; the subject-object relationship always held good. He asked why there should be a conflict between the conscious and the unconscious; if there was such a conflict, what was the impulse that led to it? He asked, further, what was the nature of the material recovered from the unconscious; was it of the same order of things as pre-experienced things? He regarded the unconscious as the sum total of experiences that had ceased to be useful. He alluded to the Freudian view of the necessity for repression as the motive for experiences passing into the unconscious, and pointed out an analogy between this and Bain's "law of conservation": all disagreeable experiences tended to cease; all agreeable experiences tended to continue.

Dr. Constance E. Long (London) regarded the unconscious as a friend as well as an enemy, in contradistinction to the strictly Freudian view, and said they need not always look to the lower to explain the higher.

Dr. H. CRICHTON MILLER (London) alluded to the technique of psycho-analysis, and pointed out how frequently the physician was convinced of the genuineness of the action of the unconscious mind by the personal reaction of the patient when a correct interpretation of his symptoms was arrived at. He said a revolt had taken place against the deterministic philosophy of Freud built up by him on the basis of his findings in pathological cases, and alluded to the gratitude he felt towards Dr. Jung for furnishing a more satisfying view of the unconscious. The real point at issue was the question of the evil of the unconscious. According to Freud life was against us; in the unconscious we were dealing with experiences which had to be fought against. According to Jung, life was with us. The latter's essential conception of the unconscious was one, not of conflict, but of opportunity. Dr. Miller emphasised the importance of possessing a "psychic outlook" in dealing with pathological cases. He meant thereby the desirability of not ignoring the psychical elements in a given case, although physical causes for disease might be obviously present.

Dr. R. H. STEEN (Dartford) agreed that the explanation of the phobias, stereotyped acts, and generally the irrational behaviour of patients suffering from one or other psychosis, was to be sought in the action of the unconscious mind. The unconscious, however, in his opinion, explained only the form the psychoses took and not why they arose. Under the influence of an anæsthetic a patient might behave in such a way as to reveal the action of the unconscious, but the cause of the phenomena was the anæsthetic, not the unconscious. He emphasised, therefore, the importance of the toxic element in the development of many psychoses, and advanced evidence in support of this view.

Dr. T. C. MACKENZIE (Inverness) agreed with much that the previous speaker had said, and showed the importance of not overlooking physical lines of treatment in dealing with the psychoses by giving the details of one or two illustrative cases.

The PRESIDENT, in summing up the discussion, said he hoped for and believed in the possibility of a physiological explanation of much that passed current as essentially of the psychical order of things, and alluded to disturbance of biochemical equilibrium in the ductless gland system as an important factor in the matter.

FRIDAY, JULY 31ST.

Dr. KINNIER WILSON read a paper on

The Temporo-sphenoidal Forms of Idiopathic Epilepsy.

He said that, following Hughlings Jackson, it was desirable to speak of "the epilepsies" rather than epilepsy. Among the various types was one of which he had seen in private and hospital out-patient practice a considerable number, characterised by an aura of a peculiar and elaborate kind, formerly described as a "dreamy state." This so-called dreamy state was often, but not invariably, associated with a subjective sensation of taste or of smell. The cases to which Dr. Wilson referred were all of genuine idiopathic epilepsy, and were not cases of gross brain lesion. No attempt had hitherto been made to classify the varieties of the curious psychical aura above mentioned, but it might be provisionally subdivided as follows: (1) the "déjà vu," or "familiarity" type; (2) the "strangeness," or "unreality" type; and (3) the "memory" type. There was also (4) an "abortive" type. Clinical instances exemplifying these were given. It was next shown that these types might be combined, and that entirely analogous states occurred occasionally in individuals supposedly normal; that both (1) and (2) were noted with considerable frequency in psychasthenia; and that instances of (3) had been recorded in the pathological states of drowning, hanging, and choking. It was argued by Dr. Wilson that the occurrence of such auræ in other pathological states provided a clue to their significance when they occurred as the aura to an epileptic attack. It was suggested that the removal of a higher inhibiting cortical level allowed phenomena usually subconscious to rise momentarily into complete or incomplete consciousness, whereby a double mental state was for the moment constituted, of which the patients were often very well aware. The knowledge gained by the investigation of organic lesions of the uncinate region of the temporal lobe indicated that the seat of the disturbance in the particular type of idiopathic epilepsy under consideration was, at first at least, in that cortical region, and it was matter for discussion whether in the vast uncharted area of the temporal lobe any of the phenomena above mentioned could find a physiological localisation.

Dr. ALDREN TURNER read a paper on

Epilepsy and Brain Tumours.

He said that he referred to those cases of symptomatic epilepsy which were characterised by the recurrence of fits over long periods of time before the symptoms of intracranial tumour made themselves known. Years might elapse before the tumour revealed itself in any recognisable way. The fits might occur in series, during waking or sleeping, exactly as in idiopathic epilepsy. Further, the bromides might have an arresting action on the fits. All these factors would suggest true epilepsy, but in the end that diagnosis was found to be incorrect. In most of such cases the fits began between the ages of 21 and 32; they did not correspond with the age of puberty, hence the condition might be described as one of late epilepsy. The fits were generalised epileptiform seizures, with or without a local warning. Sometimes they were of the nature of vertiginous attacks. Three main groups might be distinguished according to the site of the tumour. 1. Epilepsy and fronto-parietal tumours. This type of fit was either generalised or focal, associated with unilateral localised twitching, or with disturbances of speech if the tumour was left-sided. Allusion was made to the so-called Broca fit. 2. Epilepsy and temporo-sphenoidal tumours. The fits were either generalised or with a focal commencement of the uncinate type. 3. Epilepsy and parieto-occipital tumours. The fits might be generalised or focal. Dr. Turner believed that tumours involving the cortex and subcortical tissue anywhere might give rise to fits identical with those of idiopathic epilepsy.

The foregoing papers were discussed together.

Dr. GRAINGER STEWART said that in his experience dreamy states occurred in tumours of the frontal lobe as well as in temporal cases. He alluded to the occurrence of what he considered analogous symptoms in migrainous attacks. Their basis might be a disturbance of the circulation. It was desirable to distinguish two types of intracranial lesions associated with epilepsy. He thought epilepsy usually would be found associated with those tumours which were intracranial but extra-cerebral. As a criterion of diagnostic importance, he thought that in fits from tumours the recovery from the disturbance produced by the fit was not so immediate as in the true idiopathic variety.

Dr. CRICHTON MILLER, Dr. EDER, and the PRESIDENT continued the discussion.

Dr. CRICHTON MILLER read a paper on the Psychic Factor in Insomnia, and Dr. T. C. MACKENZIE one on Some Considerations regarding Insanity in the Highlands.

PATHOLOGICAL MUSEUM.

The specimens arranged in the pathological department of the University formed a small but interesting collection illustrative of the work done in the various sections and of the special lines along which the museum committee had directed its energies. Of special note were the sections devoted to recent research and to the history of medicine, and in addition one large room was given up entirely to a display of microscopic specimens. While we only touch upon some of the more salient features of the exhibition, on account of the limitations of space now imposed upon us, we recognise that others were deserving of mention.

Tropical Medicine.

In this section Dr. Daniel Anderson, of the Honeyman-Gillespie Trust, exhibited many specimens obtained from the West Indies. Amongst these we noted Jamaica ticks which played a great part in producing relapsing fever; larvæ from ankylostomes, the incidence of which, amongst the West Indian coolies on the sugar estates, was very great. It appears that fully one quarter were affected, and, in order to combat the great loss of labour resulting, preventive measures have now been adopted; the coolies, one week before landing upon the islands, are given thymol so as to deprive them of their ankylostome larvæ. There was also a large variety of venomous and non-venomous snakes from different countries.

The collection of larvæ of Fasciola hepatica, obtained from the livers of cattle in Chile, pointed an important lesson. It had been noted that meats from Valparaiso and the Argentine Republic had become yellow and bitter, and an investigation into this by Dr. Anderson showed that it was due to the liver fluke, and as the liver and other viscera were all removed in the slaughter-house and minced up into meat bricks at once the cause could not be determined in this country. It is possible, however, that this was unintentional on the part of the slaughterers, who mistook the flukes for clots of blood.

Another interesting specimen was a fœtus affected with small-pox from a woman who died from that disease. There was also a large collection of photographs of cases of pellagra, which were of special interest, seeing that the disease has lately been described in this country.

Dr. P. H. Bahr, of the London School of Tropical Medicine, exhibited a series of sections illustrating the pathology of sprue, that peculiarly tropical diarrhœa of obscure etiology. They consisted of naked-eye and histological specimens of the entire alimentary tract and the stools from various cases. The specimens of ileum were intended to demonstrate that the intestinal changes described as pathognomonic were to a great extent the result of post-mortem decomposition. Sections of the tongue and œsophagus showed remarkable invasion of mycelial threads of the thrush fungus; around this there was an inflammatory reaction. The mucosa throughout the intestinal canal was invaded in a similar manner by yeasts, and the film from the stool of a fatal case was also swarming with yeast cells. Dr. Bahr also demonstrated a hyaline degeneration of the other viscera, and especially of the endothelial cells of the splenic veins. To demonstrate the extreme blood destruction in the terminal stages of sprue he showed a liver giving a marked Prussian blue reaction for free iron and a blood film exhibiting grave secondary anæmia. He showed also a series of coloured drawings illustrating the tongue changes in what he called "tongue sprue," which he considered to be due to the Monilia albicans which, under special conditions, develops peculiar pathogenic properties.

Another series of photographs illustrated the tertiary bone lesions of yaws in Ceylon and Fiji which by some authors are not even recognised. This included deformities of the tibia and ulna, synovitis, periostitis, ulceration and even loss of the soft tissues of the nose, epiphysitis, &c. Amongst the good collection of specimens mounted in glycerine jelly illustrative of amœbic and bacillary dysenteries seen in Fiji there was an interesting specimen of multiple amœbic abscesses of the liver, each of the size of a halfpenny piece and occurring in association with ulceration of the large intestine.

There was a good collection from the Royal Naval College and also from Fleet-Surgeon P. W. Bassett-Smith, including many embryos and ova of schistosomum hæmatobia, bilharzia, and S. japonicum, one of these showing the male and female worms *in situ* in the tissues, &c. The eosinophilia in these cases was well demonstrated by a blood film which contained 50 per cent. of these cells.

The parasites of kala-azar (the Leishman bodies) were shown in various specimens obtained by punctures of the liver and spleen from cases of the disease in the Mediterranean and in China, and also from smears from Oriental sores. The parasites were seen to be free and intracellular, some being in the flagellate developmental stage; some of the flagellates came from the stomach of a flea, others had been cultivated in the NNN media.

Amongst other parasitic diseases were noted the small intestine of a dog swarming with tænia echinococcus on which the dog had been fed.

Section of Laryngology, Rhinology, and Otology.

Here our attention was attracted by a very large collection of histological specimens exhibited by Dr. J. S. Fraser, showing the various pathological-anatomical changes in inflammatory diseases of the ear. These specimens had been most beautifully prepared, and as it is impossible to do them justice without reproducing the illustrations we can merely say that we would like to see the entire series so reproduced. This same exhibitor was also responsible for a reconstructed model of the middle and inner ear, with explanatory photograph. Other exhibits in this section included a collection of malignant diseases and a large co lection of foreign bodies which had been removed from th food and air passages, including carpet tacks, pins, toy bell coins, and toy trumpets.

Ductless Glands.

Here we found microscopical and naked-eye specimer illustrating the recent work on the subject of these gland Mr. Rupert Farrant gave a demonstration of some of h clinico-pathological work in connexion with the thyroi gland. He exhibited a series of slides illustrating the effect o the thyroid by feeding and injecting bacilli coli, &c., int guinea-pigs. He showed that the bacillus coli caused a ce hyperplasia with a tinctorial change in the colloid, and thi cell hyperplasia varied with the different mutants of bacil coli. Another series showed the varying degree of hype plasia and colloid absorption in cases of infantile diarrhœ dying after varying periods of infection. The hyperplasia i a guinea-pig, following inoculation of glanders bacilli and th various changes in human actinomycosis, cirrhosis of th liver, and other diseases, were all demonstrated, and a serie of lantern slides exhibited the changes in diphtheria, whil two thyroids from horses treated with diphtheria toxi showed that the hyperplasia is inversely proportional to th antitoxic value of the serum. Another series of phot graphs demonstrated the improvement that Mr. Farrant ha obtained by removal of the causal toxin in cases of hype thryoidism, endemic and exophthalmic goitre.

The pituitary gland was well represented; its develo mental stages were shown by Dr. H. A. Haig in section from embryos of cats, guinea-pigs, and rabbits at variou stages; some tumours were mounted, but many more wer exemplified by X ray photographs. Other photograph showed other manifestations of the disorder of the pituitar gland, such as acromegaly, dystrophia, adiposo genitalis.

Circulatory System.

Here the recent work of the cardiologists was exemplifie by charts from various cases of heart-block, &c., and b microscopical specimens showing the changes in th auriculo-ventricular node and bundle and the blood-vessel supplying it. One slide showed thrombosis of the artery o the *a.-v.* bundle with complete destruction of the bundl from a case of auricular fibrillation with complete heart block; another showed infiltration of the *a.-v.* bundle fro a case exhibiting short paroxysms of tachycardia originati in the *a.-v.* bundle and a long *a.-c.* interval. Anothe collection dealing with another aspect of cardiac disease wa that of Dr. Carey F. Coombs, who demonstrated histologicall the inflammatory changes of rheumatic carditis by specimen from cases of chorea, fatal acute rheumatic pericarditis, &c.

Section of Recent Research.

In this section Dr. Margaret C. W. Young exhibited series of cultures, photographs, and diagrams bearing o her work on the variation in bacteria. These showed yeas like growths, coccal growths, and the sporoblastic stages from which she claimed to be able to breed cocci, bacilli &c.; she demonstrated also the development of the tubercl bacillus into the subtilis type and the development of th protist and sporoblast stages in considerable degrees o alkalinity of medium, also the streptococcal and anthracoi form of the tubercle bacillus and various other changes Here we need only say that such startling changes mus be received with extreme scepticism and be put to th test of experimental proof.

The experimental work of Mr. J. M. Graham on arteria division and suture aroused much attention. Here we wer shown specimens and photographs of the larger vessels an aorta of dogs and cats which had been divided in variou directions and sutured with complete success. In man there was complete absence of stenosis, and this was demonstrated also by casts taken from the vessels themselves.

The experimental work on purpura by Dr. J. C. G Ledingham and Dr. S. P. Bedson was shown in two guinea pigs, the seat of extensive purpura the result of an inoculation with an antiserum prepared by immunising rabbits wit guinea-pig blood-plates.

Section of Dermatology.

Here there were the usual, but none the less useful collection of photographs, dermatochromes, and life-lik casts of the various skin diseases, including some direct colour photographs by Dr. Haldin Davis.

Section of Radiology and Electro-therapeutics.

Here there was a large collection illustrating the work of ifferent schools, but we were specially interested in the ray photographs of gall-stones, which in many cases erved to bring about a diagnosis of the condition. In one ase an unsuspected gall-stone had been diagnosed when he symptoms were directed to pyloric obstruction accomanied by a movable right kidney. Another specimen howed the shadow of the external ring of calcium deposit hilst the internal cholesterin nucleus was not visible. nother specimen of interest was a skiagram from a case of astro-enterostomy, six months after the operation, showing hat the bismuth had passed from the anastomosis immeiately after the meal and had entered the small intestine n two hours and the colon in 24 hours. The effects of njecting bismuth into the rectum were also shown, the ismuth having reached the splenic flexure in five minutes nd the transverse colon in ten minutes.

Dr. W. F. Somerville exhibited a number of lantern slides educed from skiagrams. These included cases of eformity from rheumatoid arthritis of the small and large oints, and cases of advanced aneurysm, one showing a riple aneurysm of the innominate artery and another a ressure erosion of the right clavicle. Amongst a varied ollection of tuberculous disease was a case of pathological racture of the right femur resulting from tuberculous isease of the bone; others showed calcarcous deposits in he brachial, radial, and ulnar arteries of a man aged 64.

Section of Surgery.

Here for the most part we only found photographs and water-colour drawings, but there were a few naked-eye pecimens showing diverticulitis in the pelvic colon removed rom a man aged 74, who for more than a year had suffered rom obstinate constipation, &c.; the spleen removed by peration from a case of chronic acholuric jaundice, and nother from a case of splenic anæmia.

Section of Anatomy.

There was a small collection here showing a few bnormalities, amongst which we noticed an extra lobe of he lung, an accessory thyroid gland, and an abnormal band n the right auricle.

Historical Section.

The historical section will become one of the most pleasing eatures of annual exhibitions. In this section Dr. W. J. Dilling had succeeded in illustrating some of the landmarks in the history of medicine. The Egyptian section contained figures of the Egyptian deities connected with medicine as well as several ancient Egyptian surgical instruments and a facsimile of the Papyrus Ebers, one of the oldest medical MSS., with translations into English of the texts shown. The Greek and Roman section was enriched by the beautiful and comprehensive collection of Greek and Roman surgical instruments gathered by the late Dr. J. S. Milne. Specimens were shown also of bronze and alabaster ointment holders and a blown-glass breast exhauster. In the Early and Middle English Medicine section there were shown several very crude old earthenware ointment pots, three of them obtained from London.

Amongst the old medical instruments many examples in pewter were shown, including castor-oil spoons and urinals. The history of the feeding-bottle was illustrated by several specimens, and of special interest was a crude hypodermic syringe made of a piece of brass tubing closed at the end by a Straits Settlement coin, and having for a piston a piece of brass wire wrapped with paper. This article was used by Chinese robbers who injected opium into the house servants previous to burgling the house. Interesting also were two girdles, one from East Africa, the other from North America, which were used by the natives to facilitate birth Grouped in the surgical section were many obsolete instruments, &c., old cupping glasses, lancets, the moxa, tourniquets, lithotomy instruments, &c. Two original specula made from the shafts of long bones demanded special examination. Several antique spectacles and dental instruments were on exhibition.

The unique feature of the exhibition was the gallery of engraved portraits of eminent medical men of former ages. This exhibit was granted on loan through the kindness of Mr. J. F. Kellas Johnstone, of Aberdeen, and the short biographies attached to the portraits were prepared by Dr. Dilling. There were portraits of some 270 individual medical men, while many of the more famous physicians were represented by several different engravings.

THE REPORT OF THE SELECT COMMITTEE OF THE HOUSE OF COMMONS ON PATENT MEDICINES.[1]

On Wednesday, June 10th, 1914, a Select Committee of the House of Commons was appointed to consider and inquire into the question of the sale of patent and proprietary medicines and medical preparations and appliances, and advertisements relating thereto, and to report what amendments, if any, in the law are necessary or desirable. The Committee nominated consisted of the following: Mr. Charles Bathurst, Mr. Cawley, Dr. Chapple, Sir Henry Dalziel, Mr. Hayden, Mr. Ingleby, Mr. Glyn-Jones, Mr. Haydn Jones, Mr. Lawson, Mr. Lynch, Sir Philip Magnus, Mr. Newton, Sir Henry Norman, Mr. O'Grady, and Mr. Hill-Wood, with Sir Henry Norman as chairman, and they were empowered to send for persons, papers, and records, and to order analyses.

The Committee have now agreed to the following report:—

REPORT.

1. Your Committee, during the three sessions of Parliament over which their labours have extended, have held 33 public sittings, and have examined 42 witnesses, of whom more than 14,000 questions have been asked.

2. Of these witnesses nine represented Government Departments, either of this country or Australia, eleven were medical men, five were analysts, four were wholesale or manufacturing druggists, and nine were manufacturers or proprietors of proprietary medicinal preparations. Fourteen analyses have been made for us.

3. In the evidence given before your Committee, the following public authorities or associations have been represented: The Customs and Excise, the Privy Council Office, the Home Office, the Local Government Board, the Director of Public Prosecutions, the Government Laboratory, the Commonwealth of Australia, the General Medical Council, the Royal Society of Medicine, the Royal College of Physicians, Edinburgh, the British Medical Association, the Pharmaceutical Society, the White Cross League, the Proprietary Articles Section of the London Chamber of Commerce, the Association of Wholesale Druggists, and the Association of Medical Herbalists.

Your Committee have also received resolutions from representative bodies, and a large number of communications from private individuals.

4. Your Committee have received from the Foreign Office, the Colonial Office, and from other sources, information as to the existing state of the Law and its administration, in relation to the subject matter of their inquiry, in the principal foreign countries, and in the Dominions. The greater part of this information will be found in the Appendices, but we think that it may be useful, before considering the sale and advertisement of secret remedies in this country, to present the following summary of the information supplied to us of existing laws in foreign countries and British Dominions.

The Law in Foreign Countries.

5. (1) *Germany.*—In Germany a medicine itself cannot be patented, but only the process used in its production; "pharmaceutical specialities," however, can be protected by registered trade marks. The retail trade in a number of "pharmaceutical specialities" is governed in the several Federal States by regulations based upon decisions of the Bundesrat of 1903 and 1907.

Under the regulations a number of preparations are grouped by name in two Schedules A and B, and these may only be sold in pharmacies. Those in Schedule A require a medical prescription as a condition of their sale if they contain drugs of powerful effect, or if the pharmacist is ignorant of their composition. For those in Schedule B, a prescription is in every case necessary. None of these preparations may be publicly advertised or recommended, nor may recommendations or testimonials be included in the package or covering with which they are sold.

These regulations are supplementary to the general regulations governing the conditions under which drugs of powerful effect may be sold, whether proprietary preparations or not.

(2) *Austria.*—In Austria the effect of the law appears to be that no proprietary medicinal preparation may be retailed, the composition of which is unknown, and which has not been officially authorised for sale.

(3) *Hungary.*—In Hungary no secret remedy or pharmaceutical speciality may be sold without the sanction of the Government Department concerned; known and approved remedies may not be sold under changed names; prices must be fixed according to the wholesale prices of drugs; and the recommendation issued with the remedy must also be officially approved.

(4) *France.*—In France the sale of secret remedies, whether of French or foreign origin, is prohibited by law, though it would appear to be legal to sell known and approved remedies under other names, provided the remedy is not advertised in such a way as to give the impression that it is a new discovery. A decree of 1810 provides machinery by

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[1] London: Printed under the authority of His Majesty's Stationery Office by Wyman and Sons, Limited. To be obtained from Wyman and Sons, Limited, 29, Breams-buildings, Fetter-lane, E.C.; H.M. Stationery Office (Scottish Branch), 23, Forth-street, Edinburgh; or E. Ponsonby, Limited, 116, Grafton-street, Dublin. 1914. Price 3*d*.

which inventors of new remedies or compounds may obtain official recognition of and remuneration for their discoveries.

(5) *Italy.*—In Italy all patent medicines must be submitted, with their prescription, to the Ministry of the Interior, and the prescription must accompany all packets, &c., offered for sale. False or grossly exaggerated statements, whether of contents or effects, are punishable by fine. Your Committee, however, are informed that the law is not rigidly enforced, and that an approximate statement of the contents of a preparation is considered sufficient.

(6) *The United States.*—In the United States the sale of medical preparations is regulated by the Food and Drugs Acts. There appear to be no separate State laws dealing with the subject. Proceedings were taken under the Act of 1906 in several cases against vendors of fraudulent nostrums for which extravagant claims were made, their drugs were declared "misbranded," and the vendors were fined. A decision of the Supreme Court, however, in 1911 confined the term "misbranding" to false statements regarding the contents of a medicine, and in consequence an amending Act was passed in 1912, Section III. of which provided that that part of Section 8 of the Food and Drugs Act of 1906, defining what shall be misbranding in the case of drugs, should be amended by adding the following paragraphs: "That the term 'misbranded' as used herein shall apply to all drugs or articles of food or articles which enter into the composition of food the package or label of which shall bear any statement, design or device regarding such article, or the ingredients or substances contained therein which shall be false or misleading in any particular, and to any food or drug product which is falsely branded as to the State territory or country in which it is manufactured or produced. That for the purposes of this Act an article shall also be deemed to be misbranded—in the case of drugs:—*First:* If it be an imitation of or offered for sale under the name of another article. *Second:* If the contents of the package as originally put up shall have been removed in whole or in part, and other contents shall have been placed in such package, or if the package fail to bear a statement on the label of the quantity or proportion of any alcohol, morphine, opium, cocaine, heroin, alpha or beta eucaine, chloroform, cannabis indica, chloral hydrate or acetanilide, or any derivative or preparation of any such substances contained therein. *Third:* If its package or label shall bear or contain any statement, design or device regarding the curative or therapeutic effect of such article or of any of the ingredients or substances contained therein, which is false and fraudulent."

The Law in British Dominions.

6. (1) *Australia.*—Your Committee have heard much valuable evidence regarding the law and its administration in Australia from Dr. W. Perrin Norris, who until recently was Director of Quarantine under the Commonwealth Government, and is now Chief Medical Officer for the Commonwealth in London, and from Mr. H. E. Neal, of the High Commissioner's Office.

Under this administration strict supervision is exercised upon all printed matter, labels, &c., accompanying medicines imported into the Commonwealth; extravagant or otherwise objectionable statements are required to be modified or excised; and if necessary the goods are not allowed to be imported until such modifications have been made. In a few cases medicines or medical appliances have been refused admission absolutely. Your Committee are informed that this is carried out without any considerable difficulty, and they have in the course of their inquiry noticed numerous cases in which there are substantial differences between the labels, &c., accompanying goods sold in this country, and the same goods as sold in Australia. (*See* Par. 52.) It is to be noted, however, that the action of the Commonwealth authorities is confined to dealing with the goods at the port of entry, and the control of the conditions of retail sale, or internal manufacture, is in the hands of the respective State Governments; but it would appear that the State laws tend to approximate to those of the Commonwealth, and in some cases even to go beyond them. Thus in Western Australia, under recent statutory regulations, the formula of every proprietary medicine is required to be stated on the label, or alternatively, deposited with the Department of Public Health. In New South Wales, by the Pure Food Act of 1908, a drug is declared to be falsely described when it "bears a statement design or device regarding such drug or the ingredients or substance contained therein, which is false or misleading in any particular." Under the regulations, moreover, if any one or more of some 42 scheduled drugs or poisons be contained in a preparation, the name of the drug, and the proportion of it that is present, must be stated on the label. In Tasmania, under the Food and Drugs Act, 1910, the health officer may examine and report upon drugs and appliances advertised, and may compare the results with any advertisement; the reports may be published in the Gazette and newspapers; and the Governor may prohibit the advertising or sale of any drug or appliance which is held to be injurious to health or "which by reason of its inactivity or inefficiency is useless for the advertised purpose of cure."

(2) *Canada.*—In Canada legislation is on different lines, every importer, manufacturer or agent being required to procure annually a numbered certificate of registration, and the label being required to bear the number and name under which the medicine is registered; moreover, if any of certain specified drugs are present in a greater proportion than is officially authorised, the names of such drugs must be conspicuously printed on the labels and wrappers.

7. The sale of remedies of which the composition is secret is thus restricted in varying degrees by law in the principal foreign countries and in the British Dominions. This was confirmed to us in evidence by a number of proprietors of secret remedies, who, giving various reasons for their action, informed us that as a matter of fact they export to foreign countries little or none of their products. Of the law in the United States and Australia we shall have occasion to speak later. We pass now to the law and its administration in the United Kingdom.

The Law in the United Kingdom.

8. We have found much difficulty in arriving at a clear appreciation of the law and its administration. In support of this statement it may suffice to refer to the evidence of the witness from the Home Office, who admitted that there was no department of the Government which from its own experience, or from the knowledge officially obtained by it, could give us information or advice regarding the general scope of our inquiry. The law is contained in fragmentary form in parts of a number of overlapping statutes, dating from 1804; when administered at all it is administered by a number of Departments of State of whose differing functions there is neither definition nor consistent practice; and owing to the rare occasions on which cases under the Statute Law have been brought before the Courts, there is no body of precedents to afford private or official guidance.

9. Fiscal duties in respect of medicines were originally imposed in 1783. The present law requiring a licence to sell, or imposing a duty upon medicine sold, dates from three Acts of 1802, 1804, and 1812. In 1864 the duty on the licence was made a duty of Excise, and in 1875 a uniform duty of 5s. was imposed for the licence. There are two principal exemptions from duty, namely:—

(1) Pure drugs, that is, drugs vended entire, without any mixture or composition with any other drug, by any qualified person, or person holding a licence; and (2) well-known and admitted remedies. (As a matter of fact, the Courts have only decided this exemption in one case, namely, ammoniated tincture of quinine.) There is no duty upon these remedies in Ireland, if manufactured there.

The scale of duties, unchanged since 1804, is as follows:—

Medicines of the price or value of 1*s.* or under, 1½*d.*

Medicines of the price or value exceeding 1*s.*, but not exceeding 2*s.* 6*d.*, 3*d.*

Medicines of the price or value exceeding 2*s.* 6*d.*, but not exceeding 4*s.* 6*d.*, 6*d.*

Medicines of the price or value exceeding 4*s.*, but not exceeding 10*s.*, 1*s.*

Medicines of the price or value of 10*s.*–20*s.*, 2*s.*

Medicines of the price or value of 20*s.*–30*s.*, 3*s.*

There were originally two higher classes of duty, under 50*s.* and above 50*s.*, but these have ceased to be demanded and the labels are no longer printed.

10. The sale and advertisement of patent and proprietary medicines, apart from fiscal provisions and from the Common Law, may fall under several Acts of Parliament, the administration of four Departments of State, and the activities of two statutory bodies.

(*a*) Acts of Parliament.

(1) *The Stamp Acts.*—The duties upon medicines are Medicine Stamp Duties under the Stamp Acts.

(2) *The Pharmacy Acts*, 1868 and 1869, and *The Poisons and Pharmacy Act*, 1908.—A poison is any drug named in the schedules to the latter Act. Nothing else, in the view of the law, is a poison. Any medicine containing a poison must bear the word "Poison," or if containing a poisonous substance mentioned in Section 5 of the former Act, the word "Poisonous." Medicinal preparations may also come within the terms of the Arsenic Act, 1851.

(3) *The Merchandise Marks Act*, 1887.—Under this Act it is (shortly) an offence to apply a false trade description to goods, or to sell goods so falsely described, unless the person prosecuted proves that he acted innocently in the matter.

(4) *The Sale of Food and Drugs Acts*, 1875 *and* 1899.—Under Section 27 of the former Act it is an offence wilfully to give with an article sold a label falsely describing such article. But under Section 6 of the same Act an offence shall not be deemed to be committed "where the drug or food is a proprietary medicine or is the subject of a patent in force." The appointment and duties of public analysts, and the procuring and analysing of samples of drugs by local authorities are prescribed by these Acts.

(5) *The Indecent Advertisements Act.*—Under this Act it is an offence to affix or inscribe on any house or building an advertisement relating to disease connected with sexual intercourse.

(6) *The Larceny Act.*—Under Section 88 it is an offence to obtain money by false pretences from any person with an intent to defraud.

(*b*) Departments of State.

(1) *The Privy Council Office.*—The Privy Council exercises a certain amount of supervisory and regulative influence through their charter or otherwise upon the qualifications and conduct of doctors, dentists, chemists, veterinary surgeons, and midwives. An Order in Council, following upon a recommendation of the Pharmaceutical Society, is necessary to add a drug to the schedules of poisons.

(2) *The Home Office.*—The Home Secretary answers questions in the House of Commons, on behalf of the Lord President of the Council, on the general subject of proprietary medicines, and he has power to direct the Director of Public Prosecutions to take proceedings. Complaints of fraud would properly be made to the Home Office, as the general supervising authority over the police.

(3) *The Local Government Board.*—This department controls the administration of the Sale of Food and Drugs Acts by the 234 local authorities of England and Wales.

(4) *The Patent Office.*—The Comptroller-General informed us that 312 patents granted to 1912 for medicines and medicinal preparations are in force. There are very few patents of the remedies to which our inquiry was specially directed, as a patent cannot be secured without (*a* proof of usefulness and novelty, and (*b*) disclosure of formula.

(*c*) Statutory Bodies.

(1) *The General Medical Council.*—This body is charged by the Medical Act, 1858, with publishing from time to time the "British Pharmacopœia," an authoritative standard and guide to the uniformity and purity of drugs employed by medical men. The last edition was published fifteen years ago. A new edition is at last in the press.

(2) *The Pharmaceutical Society.*—This body, created by Royal Charter in 1843, is charged by the Pharmacy Acts with a measure of control over the sale of proprietary articles containing scheduled poisons. It has no powers in relation to other proprietary articles. It moves the Privy Council to add to the schedule of poisons.

11. The foregoing summary, if left without comment, might be thought to indicate an adequate body of law and administrative authority to deal with the subject of our inquiry. This is far from being the case. So far as the prevention of fraud is concerned, the before-mentioned statutes or powers are of little value. To show this in detail in each instance would be to overload our Report with details. We confine ourselves, therefore, to a brief indication of the facts or the authority upon which we base the above opinion.

12. There is no Department of State officially concerned with the sale and advertisement of these articles. The witness from the Home Office said to us: "This is one of many subjects which no Department of State claims as its own." He further said: "The Home Secretary, as regards patent and proprietary medicines as such, has no powers or

duties." And he added: "Proceedings for fraud against proprietors or vendors of proprietary medicines on the ground that they cannot cure the diseases they mention are practically unknown." As regards the Privy Council in this connexion, it is merely a clerical vehicle for passing on any question to some other department, possessing itself neither knowledge nor adequate staff to deal with it. And even its function of securing Orders in Council is exercised with such laxity that whereas the Pharmaceutical Society passed resolutions in 1882, 1886, 1893 (moved by the Local Government Board), and 1899, requesting that various poisons, including carbolic acid, which was responsible for 200 fatalities a year, should be added to the schedule of poisons, it was not until 1900 that this recommendation was carried out in part. It thus took the Privy Council 18 years to add carbolic acid to the schedule of poisons. The President of the Pharmaceutical Society not unnaturally expressed to us the opinion that "a change in the law, or, at any rate, a great change of procedure, is urgently necessary."

13. The Merchandise Marks Acts give no specific authority to local authorities to prosecute for a false trade description, and no private individual has yet seen fit to do so in respect of a proprietary medicine. Moreover, an action would only lie in the case of a medicine not being what it was alleged to be; for instance, a drug not quinine described as being quinine. Further, it does not apply to fraudulent advertisements, except in so far as such advertisements accompany the goods.

14. In the Sale of Food and Drugs Act, Section 6, subsection (2) specifically exempts proprietary and patent medicines from its operations. Even if this exemption were abolished this section of the Act would still be practically useless, as a purchaser asking for X's pills and getting X's pills would be getting an article "of the nature, substance, and quality of the article demanded."

15. The Indecent Advertisements Act does not include advertisements in newspapers.

LEGAL AND OFFICIAL ANOMALIES AND CURIOSITIES.

16. The anomalies and curiosities of the law and official practice are numerous and remarkable. For example, under the Stamp Act foreign medicines are liable to duty merely because they are foreign, but since 1885, when Mr. Childers was Chancellor of the Exchequer, the Commissioners of Inland Revenue have disregarded the difference between British and foreign preparations as a concession, according to one witness, to those who contended that the duty violated the doctrines of free trade. Again, any number of different names may be secured as trade-marks for the same drug. Thus "soamin" is "atoxyl," and the drug acetyl-salicylic acid is sold as "Aspirin," "Saletin," "Salacetin," "Xaxa," &c., and a chemist receiving a prescription with "Xaxa," for instance, on it, cannot substitute acetyl-salicylic acid, though he may know the two substances to be identical, without rendering himself liable to an action for damage by the proprietor of "Xaxa." Acetanilide is sold as "Antikamnia" (the drug sold in America under this name was formerly acetanilide, but in consequence of a change in the law it is now phenacetin in America, but is still acetanilide in this country), "Ammonol," "Antitoxine," and "Phenalgin"; "phenolphthalein," simple or compound, is sold as "Aperione," "Laxans," "Laxatin," "Laxatol," "Laxatoline," "Laxiconfect," "Laxoin," "Laxophen," "Paraphthalein," "Phenolax," "Proliclin," "Purgen," "Purgo," "Purgolade," "Purgella," and "Purgylum"; formamine or urotropine (hexamethylene-tetramine, or commercial varieties of it) is sold under the proprietary names of "Aminoform," "Cystamin," "Metramine," "Urisol," "Uritone," "Xametrin," "Vesalvine," &c. Again, the retailer of "Wincarnis" must hold an off wine licence (costing at least £2 10*s*.), but the Commissioners of Inland Revenue decided that the addition of one gr. of quinine hydrochloride to the fluid oz. makes it a medicated wine, and the retailer need only hold a patent medicine licence (costing 5*s*.). Thus the proprietors of a medicated wine are naturally induced to add precisely that amount of quinine which the Commissioners decide will enable it to be sold by retailers holding the less expensive licence. Again, a manufacturer of dutiable preparations can export them to himself in a foreign country without paying British duty; if he exports them to another person he must pay duty. But he can transfer them to himself in Ireland and export them from there to any person without paying duty upon them. Again, in all cases where the name of an ailment is mentioned in connexion with a medicine, the Commissioners have since 1902 required duty to be paid; where no ailment, but only the organ of the body which is the seat of the ailment is mentioned, the medicine is not dutiable. Thus "cough mixture" is dutiable, "chest mixture" is not; "liver tonic" is dutiable, "liver mixture" is not; "corn paint" is dutiable, "toe paint" is not; "headache powder" is dutiable, "head powder" is not. Millions of powders for headache now escape duty under this decision, the name having been changed from the former to the latter. An alleged cure for asthma only fails to escape duty because no organ of the body can be named as specially the seat of that ailment. Asthma cigarettes, however, are not regarded as a preparation "to be used or applied externally or internally, as a medicine or medicament." Therefore, they pay no duty. But smelling salts are dutiable. Again, if the original maker of a well-known medicine in which no proprietary rights are claimed affixes a label recommending its efficacy, he must pay stamp duty. But a retail chemist may purchase it from him and affix such a label without paying duty. Again, there is no duty upon waters containing carbonic acid gas, or solid preparations for impregnating water with this gas. The Court ruled, therefore, that powders like "Eno's Fruit Salt," "Kutnow's Powder," "Pyretic Saline," &c., are not dutiable, though proprietary medicines recommended for ailments, on the ground that when mixed with water they effervesce by the generation of carbonic acid. Again, an advertisement, not in itself indecent, relating to complaints arising from sexual intercourse, becomes indecent in law if affixed or inscribed anywhere, but not if published in a newspaper, put in a letter box, or thrown down an area; and such advertisements are frequently exhibited in shop windows.

The above examples illustrate the remark made to us by the solicitor to the Chemists' Defence Association that the existing state of the law constitutes "a financial and legal chaos," and the view expressed by the Solicitor to the Customs and Excise, who said, "We have long felt that the whole of this law is very much out of date." From the traders' point of view it is very difficult to know what articles are dutiable and what are not, and the Commissioners themselves confess that they do not enforce the Act strictly. Finally, to compare British with foreign law in one instance, we may refer to the case of the American Macaura. He is stated by one witness to have gained £60,000 by his recent campaign in England of advertising, exhibiting, and selling an alleged vibratory cure for many ailments, whereas for the same procedure in Paris he has just been sentenced to three years' imprisonment and a fine of £120.

PROSECUTIONS FOR FRAUD.

17. Successful prosecutions for fraud in connexion with the sale of secret remedies have been so few as to be negligible. In the first place, as we were informed by the Assistant-Director of Public Prosecutions, at present there is no person whose duty it is to see whether patent medicine manufacturers are making fraudulent claims. And when a prosecution is undertaken, it usually breaks down for one of two reasons: (1) It is impossible to prove guilty knowledge—that is, "wilful" misstatement, often because the medicine is usually sold by persons ignorant of their composition. (2) The defendant is able to produce witnesses who state that the medicine has been beneficial to them. A drug or appliance, for example, is advertised to cure deafness. It may be a drug or treatment which is commonly used by the medical profession to benefit specific or simple cases. The vendor can thus produce a few cases which have derived benefit, whereas in thousands of other cases it is a sheer fraud. (3) In grave cases, like drugs sold to procure abortion, the prosecution could hardly produce a witness to say, "I bought this drug believing it would enable me to commit a crime; I found it would not, and I am defrauded." We have privately brought to the notice of the Director of Public Prosecutions several cases obviously of the most fraudulent or offensive description, and have requested him to prosecute. In each case, with every desire to do so, he has after careful consideration explained to us the legal grounds on which, in his opinion, it would be impossible to secure a verdict.

18. One example of an unsuccessful prosecution of a retail vender may usefully be given. In 1907 the Liverpool Corporation made a praiseworthy attempt to punish fraud in the case of a preparation, the materials of which, according to the medical officer of health, cost about a penny and which was sold for 2*s*. 9*d*. The retail vendors were prosecuted on the ground that the statement on the label that the preparation "contains the active ingredients and digestive qualities of the gastric juice in a highly concentrated and permanent form," was false and fraudulent. An analyst's certificate was produced, showing the contents to be water, with traces of phosphoric acid, hydrochloric acid, nitric acid, and calcium phosphate, flavoured with chloroform and a vegetable bitter, and coloured with cochineal. The only part of this resembling the gastric juice was the minute quantity of hydrochloric acid. But it was impossible to prove guilty knowledge on the part of the vendors, the case against them was withdrawn, and they were allowed five guineas costs. It is not surprising that the medical officer of health of the City of Liverpool should add, in supplying us with the above facts, "Further analyses have been made of patent medicines, but no legal proceedings have been taken." It should be pointed out that the prosecution was not taken against the manufacturers of the remedy.

THE INADEQUACY OF EXISTING LAW.

19. In opposition to any change in the law affecting the sale or advertisement of secret remedies, it was contended to us on behalf of the Proprietary Articles Section of the London Chamber of Commerce that false statements or false pretences in respect of such remedies are already adequately dealt with either by Common Law or by certain existing Acts; and that adequate powers of prosecution are already vested in certain officials and Departments of State. After most careful and prolonged consideration, in public and in private, we are convinced that this is not the case.

20. By strict interpretation of existing statutes, of the precedents of Common Law, or of the authority of officials and Departments, considerable powers of prevention and prosecution may exist nominally. But we are satisfied that the difficulties of bringing these powers into successful operation are so numerous and great that for all practical purposes the sale and advertisement of secret remedies (unless they contain scheduled poisons) is unrestricted by law in this country.

21. In the final support of this view we would quote the two most weighty official opinions available to us. Mr. Guy Stephenson, Assistant-Director of Public Prosecutions, assured us that "the difficulty of successfully prosecuting for any false statement with regard to the powers of a medicine, is almost insuperable." He then gave evidence as follows:—

Chairman: That is to say, the law is practically non-existent, speaking generally?

Witness: If you like to put it in that way.

Chairman: Or, in other words, the vendors of patent and proprietary medicines can practically do what they like, so long as they keep outside the bounds of gross and obvious impropriety?

Witness: It would seem so—yes.

And Mr. MacFadden, M.B., of the Local Government Board, gave the following evidence:—

Chairman: In fact, we may take it then, as a general summary of your view, that the existing laws are not operative as regards this class of articles, and that they must almost necessarily be inoperative?

Witness: That is so.

THE SITUATION RESULTING FROM EXISTING LAW.

22. The situation, therefore, as regards the sale and advertisement of patent and proprietary medicines and articles may be summarised in one sentence as follows. For all practical purposes British law is powerless to prevent any person from procuring any drug, or making any mixture, whether potent or without any therapeutical activity whatever (so long as it does not contain a scheduled poison), advertising it in any decent terms as a cure for any disease or ailment, recommending it by bogus testimonials and the invented opinions and facsimile signatures of fictitious physicians, and selling it under any name he chooses, on the payment of a small stamp duty, for any price he can persuade a credulous public to pay.

STATISTICS OF THE TRADE IN PROPRIETARY REMEDIES.

23. We pass now to an examination of the trade in proprietary remedies as it exists in this country, and in the first place, to its fiscal and financial side. The yield of the duties was, to March 31st, 1914, in respect of 43,156 licences, £10,791, and in respect of duties upon medicines apart from licences, for 1912, £327,856, for 1913, £328,318, for 1914, £360,376, thus showing an increase of £31,958 during the past

12 months, the greatest advance in one year for many years. Of the whole revenue all but a very small sum was paid in England. The number of medicine stamps issued in the year ending March 31st, 1908, was 41,757,575, of which 33 millions were for 1½d., 7½ millions for 3*d.*, and one million for 6*d.* For the year ending March 31st, 1914, it was 44,427,166, of which 34 millions were for 1½*d.*, nearly 9 millions for 3*d.*, and a little over one million for 6*d.* The increase is thus rather over 2½ millions in six years. The Customs and Excise informed us that it was impossible to tell from these figures what the total sales amounted to, and therefore whether the consumption is increasing or not. But on the assumption that all the 1½*d.* stamps were put upon medicines retailed at 1*s.* 1½*d.* (which is not entirely the case), the sales of these would reach about £1,930,000, and that all the 3*d.* stamps were put upon medicines retailed at 2*s.* 9*d.*, the sales of these would be about £1,275,000, or nearly £3,200,000 for these two classes of preparations alone. The President of the Pharmaceutical Society of Great Britain, speaking with 36 years' continuous experience as a retail chemist, informed us that the sale of proprietary remedies has very largely increased during the past ten years.

24. We would draw attention, however, to the probability that the sales of secret remedies will tend to decrease from the operation of the National Insurance Act. Now that the millions of insured persons can obtain medical advice, prescriptions, and drugs free of cost, they will naturally be less likely to attempt self-medication in order to save doctors' fees.

25. There is no record at the Custom House of the importation of these preparations. It is therefore impossible to discover from our own records the respective proportion of home-made and imported remedies, but without doubt a large quantity comes from the United States. Professor Cushny stated that this has increased of late owing to greater restrictions upon their sale there. As he put it, "We are getting the benefit of the legislation of the United States. We are getting a lot of quack remedies which were formerly confined to the United States." These enter free of all import duty except upon their content of materials in themselves dutiable. One witness quoted an official American statement to the effect that about 15,000 000 packages of proprietary remedies were exported from the United States to this country in 1911, of a total value of about £400,000.

26. While the trade in certain classes of secret remedies is carried on, often as mail-order business only, with trifling capital, in other cases the amount of capital invested in manufacturing is very large. The annual turnover of the proprietor of "Beecham's Pills," selling over a million pills a day, Sundays included, is about £360,000 a year. The proprietors of "Seigel's Syrup," who have sold 100 million bottles in 40 years, pay upwards of £40,000 a year in wages alone.

27. In most cases the principal expenditure in connexion with secret remedies is in advertising. The proprietors of "Wincarnis," for example, spend thus £50,000 a year, employing between 30 and 40 persons in their advertising bureau. "Elmer Shirley," a witness informed us, spent at one time £1000 a week. The proprietors of "Daisy" powder, a comparatively small business, spend £3000 a year. The late A. L. Pointing, a well-known swindler, is believed to have spent £20,000 a year in advertising an "alcohol cure" called "Antidipso"—at his death he left £30,000. The Proprietary Articles Section of the London Chamber of Commerce estimates that £2,000,000 is spent annually in this country in advertisements of proprietary medicines.

THE PRESS AND SECRET REMEDIES.

28. It may be convenient to speak at this point of the relation of the newspaper and periodical press to secret remedies. As so large a sum as £2,000,000 or more is spent annually in advertisements of these remedies in one form or another of advertising, the trade is naturally of great importance to newspaper proprietors. In the case of most newspapers these advertisements constitute one of the most considerable sources of income, while a number of small provincial newspapers could probably hardly exist at all without secret remedy advertisements. All periodicals exercise some censorship over these advertisements. With a few, mostly weekly sporting low-class prints, fear of prosecution alone dictates a certain caution. Other papers draw a line of varying strictness. One newspaper only, the "Spectator," we were informed, wholly excludes these advertisements, but a few daily papers also practically close their columns to them. The respectable press, speaking generally, refuses all advertisements having any suggestion of impropriety. Some papers of the so-called "religious press," we are told, show a wider hospitality to secret remedy advertisements, and many of an objectionable character have been found in its columns. It is also lamentably true that the cheap so-called "home" weeklies, intended for the reading of girls and young women, contain advertisements of a grossly improper nature. Many improper advertisements from weeklies, sporting prints, "religious" and "home" papers, were exhibited to us—including 19 advertisements of drugs obviously intended to be used as abortifacients in one provincial Sunday paper—but none of this character from high-class dailies or weeklies. We are convinced that the proprietors of the better class of newspapers and secret remedies alike would welcome a drastic suppression of suggestive or improper advertisements. The foregoing observations do not refer to the advertisements of swindlers like Macaura, the "eye quacks," the "deaf quacks," the cancer-curers, the consumption-curers, the electric belt makers, the curers of rupture without operation, or "fakirs" generally. As regards these classes, most newspaper proprietors do not regard it as incumbent upon them to test the good faith of secret remedy advertisers any more than of advertisers of other goods, though a few of the leading papers exercise a very severe censorship upon advertisements of this kind also. We must point out further, in this connexion, that the large sums received for the advertisement of secret remedies lead newspapers, either from discretion or under compulsion, to exclude from their columns criticism or discussion of secret remedies. When the British Medical Association, for example, issued their volume entitled "Secret Remedies," containing analyses, costs, &c., of a large number of proprietary medicines, not only was the volume not noticed editorially by most papers, but even an advertisement of it was declined by many journals, some of them of the highest class. A trial in Edinburgh in the course of which the judge described the business of the proprietors of "Bile Beans" as "based on unblushing falsehood for the purpose of defrauding the public," was, we were informed, with few exceptions not reported in the Press, and the remedy still has a considerable sale. The extent to which criticism of secret medicines is excluded from the Press may probably be judged by anyone who will take the trouble to see how much attention is bestowed by the newspapers upon your Committee's Report.

29. With regard to the advertisements in the Medical Press, we consider that adequate censorship has not in all cases been exercised, as, indeed, was admitted by Dr. Cox, the representative of the British Medical Association, and instances to this effect will be found in the evidence we received.

THE ANALYSIS OF SECRET REMEDIES.

30. Mention of the volumes called "Secret Remedies" leads us to speak of the analysis of proprietary and secret remedies. It is vital to many proposals to deal by law with secret remedies on the ground of either their injurious or their inactive nature, that their composition should be determinable by analysis. Eminent analysts appeared before us in support of the cases for and against these remedies, but as might have been anticipated their views differed widely, and they did not fail to draw our attention to each other's unsatisfactory methods and erroneous results. We received, however, valuable independent guidance from the Government Chemist, Dr. Dobbie, and his first-class analyst, Mr. C. Simmonds.

31. It is asserted by expert analysts representing the proprietary medicine trade that no known methods of analysis will enable the composition of many secret remedies to be accurately determined. Consequently, it was claimed, the analyses published in "Secret Remedies" are incorrect in many cases. In one or two instances the makers informed us in confidence of ingredients which the British Medical Association analyst or the Government Chemist had failed to identify. Where there is an undiscovered ingredient the maker claimed special virtues for it—which he would possibly not do, as one witness suggested, if it were named. To this aspect of analysis, obviously of the greatest importance, we gave prolonged and most careful attention, and basing our view upon consideration of much technical evidence, we have reached the following conclusions.

A large proportion of drugs consists of inorganic substances, or compounds of inorganic with organic substances. Practically all of these are recognisable, and so far as concerns the inorganic substances themselves, determinable—that is, not only the substance recognised but also its quantity determined—by competent analysis. A further group consists of manufactured compounds, and these are practically all recognisable by analysis, even in somewhat complex mixtures. There remains a group of vegetable extracts, of which dandelion and gentian are familiar examples. But even simple vegetable extracts are really highly complex bodies, and the exact composition of these is still unknown to chemistry. Unless one of these, therefore, possesses a marked smell or taste, or if, possessing such, its smell or taste is masked by the greater smell or taste of some other similar substance, it cannot in many cases be specifically identified. The difficulty of identification, moreover, increases rapidly in proportion to the number of such extracts in a mixture, and when a large number, say eight or ten, are mixed together, even separate detection is impossible, and accurate determination out of the question. What is relied upon, however, in vegetable extracts for medicinal effect is often an alkaloid or mineral constituent, and these can be accurately discovered and determined. Further, subgroups of this group possess in common an active principle which can be recognised and which serves to identify the substances of the particular subgroup. For example, emodin is said to be the active principle of rhubarb and half a dozen other vegetable extracts.

32. One important practical result of the foregoing is that any maker of a secret remedy, by mixing together, whether with or without scientific or therapeutical knowledge, a number of vegetable extracts, can truthfully state that the composition of his remedy cannot be discovered by analysis. A mixture of tinctures, infusions, decoctions, or extracts of such familiar yet complex bodies as treacle, honey, aloes, cinnamon, liquorice, linseed, coltsfoot, cubebs, pepper, horehound, ginger, gentian, dandelion, rhubarb, saffron, &c., may defy all chemical, microscopic, spectroscopic, olfactory, or physiological analysis. While a mixture, therefore, may have a therapeutical value, it may also be made to defy the analytical exposure of a fraudulent claim of therapeutical value. There are thus distinct limits to analysis, but in practice these limits are narrower than would appear, for in a large majority of cases the essential nature of the principal constituents of any medicine can be detected with almost perfect certainty and determined with reasonable accuracy, given skill, time, and a sufficient quantity of material.

ORGANISATION OF THE TRADE IN PROPRIETARY REMEDIES.

33. The trade in patent and proprietary medicines is represented in Great Britain by the Proprietary Articles Section of the London Chamber of Commerce, which contains over 300 manufacturers or vendors of such articles. Membership of the Section is open to any person in the trade, proposed and seconded by members. No control of any kind is exercised by the Section over the nature of the remedies sold or the claims made for them. This body presented to us the case for proprietary medicines, producing as witnesses two expert analysts and a number of makers and proprietors of secret remedies.

THE DIFFERENT CLASSES OF PROPRIETARY REMEDIES.

34. Patent and proprietary medicines differ very widely in character. At one end of the scale is the valuable scientific preparation: at the other end is the mere vulgar swindle. Any useful consideration of them must therefore be preceded by some classification into distinct categories, as these may call for widely differing treatment in the public interest, corresponding to their differences of character. For the purpose of this Report we adopt the following classification, which is largely supported by the evidence of expert witnesses of high standing.

In the first place we divide these remedies into two chief classes: (A) Non-secret and (B) Secret. That is, those of which the formula is published, and those of which the formula is not published.

CLASS A.—NON-SECRET REMEDIES.

Group 1. *Proprietary preparations.*—This group consists of genuine drugs, originally produced synthetically, or extracted from crude compounds, by skilled chemists and tested by therapeutists, and manufactured (though under many names) in pharmacological laboratories. Familiar examples are aspirin, adrenaline, and urotropine. The processes of manufacture are patented, or the names are registered trade-marks.

Group 2. *Remedies owing their value to skilful combination.*—Examples of this group are various emulsions of cod-liver oil or petroleum, and mixtures of bismuth with pepsine. They contain no new drugs, but are only new combinations, depending for their palatable or assimilable qualities upon the skill with which they are compounded.

Group 3. *Non-secret drugs with secret excipients.*—These are known drugs with formula disclosed, mixed for purposes of convenient or elegant manufacture with minute quantities of medically inert substances, the nature of which is a trade secret. The most familiar example of this group is the large quantity of medicine sold in "tabloids," this trade name being the property of one firm.

It will be evident that unless some of the above drugs are such as should not be sold at all; unless it should be thought desirable to forbid unfounded claims of efficacy in curing disease; or unless any restriction of the multiplication of trade names be recommended, there is nothing in the above Class calling for interference in the public interest. The second Class occupies a different position.

Class B.—Secret Remedies.

In consequence of the great variety of remedies of this class, it is difficult to give an adequate classification of them without entering into excessive detail. For practical purposes, however, they may be divided into three general groups.

Group 1. *Simple household remedies.*—This group consists of a number of household remedies, often originally manufactured from a doctor's family prescription, and undoubtedly beneficial for uncomplicated ailments. They have in most cases been sold for many years, and as their retail price is out of all proportion to their cost, large fortunes have often been amassed by their proprietors. Except for the fact that often the advertisements of them recommend their use for cases they cannot benefit, thus causing the purchaser to run the risk of serious injury by delay in securing proper medical treatment, there is little or nothing to criticise in their sale. We cannot, of course, give examples of these, as our remarks would at once be used for advertising purposes.

Group 2. *Dangerous remedies, and drugs for improper purposes.*—This is a small class of drugs which should not be sold at all, of which acetanilide is possibly an example; which should not be sold except on a doctor's prescription; or which should not be sold for the purpose for which they are offered—as, for example, an unsuitable drug as a general medicine for young children.

Group 3. *Fraudulent remedies.*—This is a large class, having an extensive sale, often at high prices, consisting of abortifacients, of alleged cures for cancer, consumption, diabetes, paralysis, locomotor ataxy, Bright's disease, lupus, fits, epilepsy, rupture (without operation or appliance), deafness, disease of the eye, syphilis, &c., together with electric belts, apparatus for supplying oxygen to the system (other than by inspiration), "ionised" waters and the like. The discovery of radium will probably add a number of remedies to this group. There should be little difficulty in identifying remedies of this class, and their treatment in the public interest need involve no doubt or hesitation. They are, and are known by their makers to be, cruel frauds; and the sale and advertisement of them should be prohibited under drastic penalties.

Group 4. *Remedies making grossly exaggerated claims*—This is a final large class. Genuine simple remedies making exaggerated claims are included in Group 1, as the exaggeration in their case is usually of the nature of the "trade puff." Those we have in view in this group are remedies depending for their sale largely or wholly upon the extravagant promises they hold out to the purchaser. This, under the name of "misbranding," is now prohibited by law in the United States, and many cases came before us in which the advertisements of proprietary remedies in this country were refused admission into Australia. This group presents obviously great difficulties in drawing the line between claims which are merely "puffs" and claims which are fraudulent, but we regard it as beyond question that the public is defrauded on a large scale by promises which cannot possibly be fulfilled. As an example of the profits made by the sale of this class of remedies, George Taylor Fulford, the proprietor of "Dr. Williams' Pink Pills for Pale People," left a fortune of £1,111,000.

Medicated Wines.

35. In addition to the various classes of patent and proprietary remedies, our attention has also been forcibly called to the advertisement and sale of medicated wines, and weighty opinions have been quoted to us regarding their mischievous effects. The trade in these wines is a very extensive one. Messrs. Coleman & Co., the proprietors of "Wincarnis," have a capital of £250,000, employ between four and five hundred persons, and, as before stated, spend £50,000 a year in advertising. Mr. Henry James Hall, trading as Stephen Smith & Co., the proprietors of "Hall's Wine," has a capital of £175,000. The alcoholic content of these wines is very high. For purposes of comparison, the alcoholic strength of familiar wines may be taken to be as follows:—

Claret	9 per cent.	Sherry	18 per cent.
Hock	10 "	Port	20 "
Champagne ...	10·15 "		

The alcoholic strength of well-known brands of medicated wines was stated to us as follows:—

Bovril Wine	20 per cent.	Savar's Wine	23 per cent.
Lemco Wine	17 "	Coleman's Coca Wine	16 "
*Wincarnis	19·6* "	Hall's Wine ...	17·8 "
Bendle's Wine... ...	20 "	Vin Mariani	16 "
Glendinning's Wine	20·8 "	St. Raphael Tonic Wine	16 "
Ambrecht's Coca Wine	15 "		
Spiers and Pond's Wine	17 "		

* The proprietor stated this percentage to be about 17 per cent. of absolute alcohol.

A number of other preparations contain a high percentage of alcohol, without bearing any suggestion whatever that they are alcoholic. For example:—

Carrick's Liquid Peptonoids	20 per cent.	Junora	11·9 per cent.
Panopeptone	20 "	Vibrona	19 "
Armour's Nutritive Elixir of Peptone	15 "	Lydia E. Pinkham's Vegetable Compound	20 "
Carnabyn	17 "		

Thus, though we cannot take responsibility for the foregoing figures, it would appear that many of these wines and preparations are as alcoholic as the strongest wine, and most of the rest are about twice as intoxicating as ordinary claret. One wineglassful of a 20 per cent. wine or preparation contains three and a half teaspoonfuls of absolute alcohol; one wineglassful of "Wincarnis" three teaspoonfuls. The recommended dose of "Wincarnis" equals one wineglassful of whisky per day.

Some medicated wines claim to be nutritive because meat extract enters into their composition. The quantity of meat extract, however, is trifling, and in any case it is not nutritive. "Wincarnis," for instance, is declared to "give a strength that is lasting, because in each wineglassful there is a standard amount of nutriment," and is described as "the world's greatest tonic, restorative, blood-maker, and nerve food." Its proportion of meat extract is 1·2 per cent., or about one-twentieth of the nitrogenous (flesh-forming) constituents of lean beef-steak. An analysis made by the public analyst of the city of Bradford says: "It is so deficient in albumenoid nitrogen and phosphorus, essential constituents of nerves and flesh, that in these respects it is but very little superior to port wine itself." "Lemco Wine," again, contains only 0·6 ner cent. of meat extract, but 12 per cent. of sugar. Alcohol, moreover, cannot contain meat extract in solution, and presumably any medical man desiring to administer meat extract would prefer to do so without mixing it with alcohol.

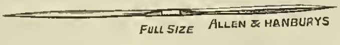
There can be no doubt that many persons acquire the "drink habit" by taking these wines and preparations, either knowing that they are alcoholic, since they can be purchased and consumed without giving rise to the charge of "drinking," or in ignorance that they are highly intoxicating liquors. The further charge is made that their drug content may lead to the "drug habit." "Hall's Coca Wine" is now called simply "Hall's Wine." It contains one grain of the extractive principle of the coca leaf (which is mainly cocaine) in 26 fluid ounces, a sufficient amount, as stated by the proprietor, to cause sleep if two wineglassfuls are taken. It is recommended for children in these words: "For colds, coughs, and bronchial affections: children, a dessertspoonful three times daily." One "nutritive tonic wine" (Bugeaud's) is advertised as containing "cinchona (quinine) and cocoa." It contains no cocoa. The word is probably a misprint—perhaps accidental—for "coca." In some cases the proprietors of these wines offer to pay for the wine licence of retailers. A well-known firm of chemists, commenting upon this, wrote: "On our expressing surprise that they could do this, we were told that of course they would expect our orders for ordinary unmedicated wines, the demand for which always followed, in their experience, where the medicated kinds were introduced." It is stated that doctors' testimonials are secured by the offer of a free 2*s*. 6*d*. bottle for any poor person to whom the doctor may like to send it, on his returning a signed coupon. Thus Coleman and Company claim to have 6000 signatures of medical men in favour of "Wincarnis." The President of the British Medical Association gives this further explanation: "The profession has been educated up to a better standard about the giving of testimonials, but it was culpably lax some years ago."

(*To be continued.*)

New Inventions.

CENTRAL-EYED NEEDLES.

I have for some time been using needles with a central eye and pointed at both ends. With the aid of a needle-holder—an ordinary pair of Spencer Wells's forceps—any fingering of the needle or thread is easily avoided. The movements of supination and pronation are made use of so that the same grip that pulls the needle through serves to re-insert it. The thread or gut is knotted together at the ends and the first stitch is fixed, not by tying, but by passing the needle through the loop. Thereafter the suture is continued with a double thread, thus permitting the use of a finer suture than would otherwise be safe. The needles are very handy for stitching the pelvic peritoneum in such operations as hysterectomy, where the ordinary needle is withdrawn at every stitch to allow the grip to be shifted. The needles are made straight and curved, the straight being the more generally useful. With the straight needles an ordinary over-stitch, a blanket-stitch, a post-mortem stitch, or a continuous Connell stitch can be readily and quickly inserted. The curved needles cannot be used for any form of over-stitch but serve for the insertion of continuous mattress or post-mortem stitches.



The straight needles can be obtained from Messrs. Allen and Hanburys, Limited, of Wigmore-street, London, W., and from Messrs. A. Browne, of Leicester. The former firm will also be in a position shortly to supply the curved needles of this type.

Percival P. Cole, M.B., Ch.B. Birm.,
F.R.C.S. Eng.

London, W.

ASYLUM REPORTS.

Kesteven, Lincolnshire, County Asylum (Annual Report for the Year 1913-14).—The number of patients in the asylum at the end of the year was 472. The admissions numbered 111. Fifty-five patients were discharged, of whom 21 were recovered. The deaths amounted to 41, which gives a percentage of 8·83, as compared with 10 74 the previous year. Of these, 8 were due to tuberculosis and 2 to dysentery. Post-mortem examinations were made in 79 per cent. of the cases. Dr. J. A. Ewan, the medical superintendent, considers that hereditary predisposition stands first among the factors in the production of insanity, and that it is more prominent in rural than in urban districts.

Stirling District Asylum (Annual Report for the Year ending May 15th, 1913).—The total number of cases treated during the year was 999, the average number being 767. The number of patients admitted was 244, of whom 150 were suffering from acute forms of insanity. An inherited predisposition was admitted in 26 per cent., alcoholic excess was found to be the cause in 18 per cent., and epilepsy in 9 per cent. In 35 per cent. the mental breakdown had occurred at one of the critical periods of life—namely, adolescence, the climacteric, and old age. 139 patients were discharged, of whom 95 were recovered. The deaths amounted to 81, making a death-rate of 10·5 per cent. on the average daily number resident. Of these, 17 were over 70 years of age. Tuberculosis of the lungs was the cause of death in 8 cases. Dr. Robert B. Campbell, the medical superintendent, comments on the present overcrowded condition of the male side, with the consequent difficulties in administration and nursing. The Stirling District Lunacy Board has decided to provide a new hospital for male patients, and the scheme is now under consideration.

Middlesbrough County Borough Asylum (Annual Report for the Year 1913).—The total number of cases treated was 566, the average number resident being 421. There were 138 admissions. Dr. John W. Geddes, the medical superintendent, has drawn up exhaustive statistical tables to show the predisposing and etiological factors in the cases admitted during the year. The number discharged was 90, of whom 27 had recovered. The deaths amounted to 50, the death-rate being 11·8 per cent. on the average daily number. Post-mortem examinations were made in 80 per cent. of the cases. Tuberculosis accounted for 13 deaths and heart disease for one only.

Joint Counties' Asylum, Carmarthen (Annual Report for the Year ending March 31st, 1914).—The total number of patients under treatment was 839, the average daily number on the register being 719. There were 124 cases admitted, of which 32 were of an incurable type. Cases of excitement predominated over those of depression, as is usual in agricultural districts, in the proportion of 3 to 2. With regard to causation, a history of inherited predisposition was elicited in 35·5 per cent. of the direct admissions, and alcohol was a predisposing cause in 20·6 per cent. The number of discharges was 66, of whom 40 were recovered. There were 49 deaths, making a proportion of 6·81 per cent. on the average daily number, a rate which is far below the average for English asylums. The tuberculosis death-rate was 22·4 per cent., which is a very high figure. Infective diarrhœa was prevalent and accounted for three deaths. Dr. John Richards, the medical superintendent, greatly deplores the overcrowding of the patients in the institution, the number in excess amounting to 124. He correlates with this condition the high tuberculosis death-rate, and states that a decided improvement in this direction can be expected only when the overcrowding is relieved, when efficient laundry arrangements are available, and when vacuum cleaners are provided in the wards. Apart from the consideration of the welfare of the patients, the institution and its staff have been taxed to its uttermost, a fact to which allusion was made in the last annual report, and which still holds good to an even greater extent. Dr. Richards considers it highly desirable that a separate institution should be provided for patients of an unusually dangerous or criminal type, as their example is extremely detrimental to the other patients. In the report of the committee of visitors it is stated that the long-standing dispute as to the revised quotas and other matters to be included in the proposed new agreement between the representatives of the joint counties has been finally settled, and it is to be hoped that this will materially assist in the work of extending and improving the asylum. A large house has been provisionally purchased, and plans for a new laundry have been submitted to the Commissioners in Lunacy.

LITERARY INTELLIGENCE. — Messrs. Charles Griffin and Co., Limited, have in the press "An Elementary Practical Chemistry for Medical and Other Students," by J. E. Myers, M.Sc. Vict., and J. B. Firth, M.Sc. Vict., written to meet the needs of medical students for their practical chemistry in first examinations and for those studying pharmacy.

MEDICAL MISSIONARY WORK.—From the Church Missionary Society we learn that there are many opportunities for medical practitioners who are willing and able to carry on missionary work in connexion with their professional calling. Their responsibility is often great, as mission hospitals are frequently placed in situations where other medical aid is not available, and in China particularly the question of medical missionaries taking part in the training of medical men has received prominence. The desirability of medical missionaries, whether male or female, being fully qualified and possessing an all-round training needs no emphasis. In most parts of the world, and especially in India, a knowledge of eye diseases is required, and for those going to the tropics a special course in tropical diseases is essential. Apart from the regular missionary societies there are two which have been established for assisting intending medical missionaries in professional preparation—namely, the London Medical Missionary Association, 49, Highbury New Park, N., and the Edinburgh Medical Missionary Association, 56, George-street, Edinburgh. There is a scholarship available for intending missionaries in connexion with King's College Hospital, called the Worsley Scholarship, of the value of £100, payable in five yearly instalments, while the Society for Promoting Christian Knowledge also gives assistance in this direction.

OPENING OF THE MEDICAL SCHOOLS.—In accordance with annual custom inaugural addresses or dinners or both are announced in connexion with the opening of the winter medical session, but many of the arrangements are far from complete, and owing to the exigencies of the time there is always the possibility that such arrangements as have been made may be altered or cancelled. Save where otherwise stated the winter session will begin on Oct. 1st. At St. Bartholomew's Hospital the annual students' dinner will be held in the Great Hall at 7 P.M., when Dr. W. S. A. Griffith will preside. Tickets, price 1 guinea, can be obtained from the honorary secretary, Dr. J. Calvert, 113, Harley-street.—At Charing Cross Hospital there will be a distribution of prizes, and the biennial Huxley Lecture will be delivered by Sir Ronald Ross, K.C.B., F.R.S. The annual dinner has been indefinitely postponed.—The inaugural address at St. George's Hospital will not be given, however, by Mr. A. E. Shipley, and the annual dinner has been postponed.—At King's College a students' dinner will be held on Oct. 2nd at the Waldorf Hotel, Aldwych, at 7 P.M., when Sir Arthur Sloggett, Director-General of the Army Medical Service, will preside. The price of the dinner ticket is 7*s.* 6*d.*, and cheques should be sent to Dr. W. Aldren Turner, King's College Hospital, S.E.—The London Hospital old students' annual dinner will be held on Oct. 6th at the Savoy Hotel, Strand, at 7.30 P.M., the chairman being Dr. C. A. Mercier. The secretaries of the dinner are Dr. R. Drummond Maxwell, 41, Wimpole-street, and Dr. Charles H. Miller, 22, Queen Anne-street, W.—At St. Mary's Hospital the prizes will be distributed by Sir Philip Magnus, M.P., but the annual dinner will not be held.—The inaugural address at the Middlesex Hospital will be delivered by Dr. C. Hubert Bond, and the prizes will be presented by Prince Alexander of Teck. The annual dinner will be held at the Trocadero, Sir John Bland-Sutton presiding.—At Westminster Hospital the annual students' dinner will be held at the Imperial Restaurant, Regent-street.—Dr. Frances Ivens will deliver the inaugural address at the London School of Medicine for Women.

THE LANCET.

LONDON: SATURDAY, SEPTEMBER 5, 1914.

The National Spirit.

THE noble verses of Mr. RUDYARD KIPLING supply this country in their title with justification for this terrible war, and express the national sentiment that in face of all misfortunes we must maintain the struggle to the end—an end that will mean our victory, however dearly bought, and our freedom, without which all else is valueless. The conflict will be long, and during that time the flame of national courage will burn steadily, as it is burning in Belgium and France, despite the furious efforts to extinguish it put forth by a powerful and ruthless enemy already established in their midst. For us the occupation of Paris by the Germans must be a grievous blow if it happens, but what will it be for the French? Yet in that agony, should it come, the French will say, as the Belgians have said in reply to a similar supreme test, What of it? We know that a nation is not enslaved by the taking of the capital, and that a university is not destroyed by the demolition of the buildings. It is the duty of us all to live in accordance with our knowledge. On every side we see this being done, and medical men, as a profession, can testify that the national spirit now being manifested is devoid of hysteria or unreasonable fear, and undistorted by hot dreams of vengeance. "For All We Have and Are" this nation is fighting, and our coöperation with devoted allies is the more useful in that it is inspired by reasoned courage.

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Physique of the Recruit.

THE emergency brought about by the greatest and fiercest war known to history occupies the thoughts of all of us, whatever our occupation or interests, for indeed both our future as a nation and our ideals of civilisation and progress are alike at stake. Our navy and our army stand between us and the deluge, and it is inevitable that the question of the fitness of the personnel, as regards both bodily physique and professional training for the task before it, should be one that is persistently challenging attention. For that stupendous task, as far as the army is concerned, is nothing less than the successful resistance to, and eventual conquest of, a force, probably equal in physical efficiency, at the least in as completely organised and equipped condition, and more than three times as numerous. We have every reason to believe that the troops of our regular army are in the highest state of physical efficiency, and that they are now, as was said of them once before, "fit to go anywhere and do anything." They have proved themselves and are proving themselves worthy of the eulogium, but at a grave cost to their numbers, while they are only the nucleus around which is being gathered the numbers which will be required to right the wrong and ensure our salvation. It is to the recruits that we look anxiously, that we may be enabled to continue the hideous struggle, and the net to secure these is now being spread with a larger mesh. To those who have realised the imminence of our danger this is of no great matter, but some, we believe, have viewed the situation apprehensively. It is true that the individuals that will compose the British army of the immediate future will not all be of the same age or class as those recruited under normal conditions, but their standard, speaking generally, is quite high. It is not to be anticipated that the men now offering themselves will be in any way inferior to the average during recent years. Under ordinary circumstances the quality of the recruit varies inversely with the conditions of labour during the period; with abundant employment in civilian occupations open to the labouring class generally, the quality of the recruit falls off. On the other hand, if employment is scarce the supply of available recruits mounts up, and there is greater opportunity for selection. It may have been the case that in certain years recently a somewhat inferior type of man physically has been enlisted; but it can be safely affirmed that under the influences of improved environment these recruits have, except in an infinitesimal proportion, developed into useful soldiers. They have proved it in the hard work that during peace falls to the soldier's lot in an Empire such as ours, and they are setting the seal upon their character during war.

The military authorities in their first call for 100,000 men stated that no man between the ages of 19 and 30 years would be refused who was physically fit for active service, and ex-soldiers up to the age of 42 were invited to re-engage. The call was responded to in a remarkably short space of time, though a mistaken impression, quite naturally following upon an announcement seeming to imply that not more than 100,000 men were required, brought quick recruiting to a close at that figure. Since then a further call has been made for men between 19 and 35 years, and ex-soldiers up to 45 years, or up to 50 years in the case of selected non-commissioned officers. No relaxation is made in the measurements of height and chest required, but so long as the man is in good bodily health, sound in wind and limb, and physically "fit," defective teeth are not to cause rejection, for they cannot have affected the general health. The extension of age limit raises an issue whose importance must not be forgotten. A standard of physical fitness for a soldier is of course a necessity; no man who is not strong and healthy can be any good as a marcher, still less as a fighting man under present war conditions. But the standard that has actually been evolved is not fixed and unvarying; it has been relaxed and made more stringent from time to time according as the supply of available recruits was scanty or ample. The age of ordinary recruiting begins at 18. We have no doubt that great numbers of men are fit to be made into excellent soldiers, able to march, fight, and stand the hardships of a campaign, even though somewhat below the standard measurements, provided they are of sound constitution. This view does not imply that a standard is not necessary, but that, together with the adoption of a standard, there should be a certain degree of elasticity in its application at the discretion of the experienced examining officer. As a matter of actual practice, in recent years such has been the case, and the members of the public who fear lest under the stress of adversity a wrongful laxness should prevail need have no such concern. As to the question of age, the lower limit should not, in our opinion, be reduced; no one can be considered a grown man under 19 at the earliest, and the army is not the place for boys, although recruiting in normal times may begin at 18, but a training corps of lads of 18 to 19, or even younger, might be established in connexion with the army, perhaps without legal enlistment, but with a view to their preparation for entrance into the army at 19, if desirous of doing so, and in all respects fit. This has in practice been to some extent carried out by provisional engagements, and we consider there is no objection to the development of the system. Learning in every department of life comes more easily to the young than to the mature, but it is especially better that the soldier should be taken in hand early and thoroughly trained in his duties while at a receptive age. Discipline is not galling to the youth, whose occasional revolts from it are due to skittishness and not to purposive insubordination. If entrance into the army is deferred until the recruit has lost some of his elasticity of mind, and perhaps until he has contracted bad habits, the military life is more irksome. At the same time, if defects develop under training, either physical or moral, there may be no difficulty in remedying them, while, should efforts in this direction fail, the young recruit, taken on a provisional engagement, can select another career before it is too late. Similarly the State should not be bound to keep him for better or for worse.

When we come to consider the need for a superior limit of age beyond which a man may not be admitted to serve, there would appear to be considerations pointing to some relaxation as being desirable in this direction also. Already the limit of 30 years has been extended to 35, and in the case of old soldiers from 42 to 45 years, with a special arrangement for certain men up to 50 years of age. For ordinary service we believe that these limits can be justified. A man of over 35 years of age taking up soldiering for the first time is not likely to make a good hand at it, either at drill, or on the march, or in camp, or in the fighting line. But there are many duties to be performed on military service that do not need the special physical qualifications of a young man. A good deal of clerical work is required in every unit, even with the least regulation-ridden commanding officer. Men cannot march without boots, and these very soon need to be repaired; most soldiers can mend their own clothes after a fashion, but few can mend their own boots; and we all know that an army "marches on its belly," and that as troops cannot march and fight without being properly fed, cooks are a prime necessity. Now neither clerks, nor cobblers, nor cooks need be under a limit of 30 or 35 years of age. Other examples might be mentioned of men who would do useful work in the fighting force, though somewhat beyond the age limit laid down. Moreover, if we do not confine our view to the class from which the average soldier is drawn in ordinary times, but consider the whole body of mature Englishmen, able and willing to spend and be spent in defence of their country, out of response to the national need, we are assured that there are great numbers who would give up their present occupations and undertake military service. They will do this soberly and deliberately, and with the earnest conviction that, the cause being just, they are prepared to face even that end which "will come when it will come." These men do not cease to be fit because they are over 35 years of age. A certain proportion of such would form a stiffening, a backbone, to the general body of younger ones. They would not have the elasticity nor the *élan* of youth, but they would provide, taken altogether, a very considerable body of good fighting material. But there must be difficulty in using their services, and the difficulty is implied in the words "taken together." In the teeth of the enemy the material must all go through the same mill, and corporate enlistment is directly adverse to this process. The letter in our columns from "Active 54" is a wise recognition of this fact,

The question that has for long been in the minds of many of the most thoughtful and least bellicose of our citizens is the necessity for universal military training. In former days we have paid for our army and navy, and considered this payment an insurance against loss by war. Times have changed. Whole nations are now in arms; if we are to hold our own we must also, as a nation, be prepared to defend ourselves. It has been thought that for the leisured class or for the professional class such an expenditure of time during early adult life would be too great an interference with education or the sphere of business. We believe that this apprehension is without foundation—indeed, the intellectual status and commercial efficiency of Germany refute it. To take our own profession as an example. If one year, or even two years, which would be the extreme period required, were spent in military training, the professional qualification being deferred for this length of time, the young doctor would be later in earning an income, but he would have gained experience in many ways, especially in sanitary science; he would have undergone discipline and incurred responsibility, both valuable assets in the training for his life's work; and lastly, if everyone in our profession, as in other callings, was liable in his turn to the same course of training and interruption of professional or technical education, no individual would suffer in the long run, because everyone would be equally handicapped. We have not come to this yet, but we believe the necessity for such a universal service will later be acknowledged. Lord ROBERTS has insisted on it for years past with patience and persistency. His words have been much criticised, but it seems that they have been true.

Annotations.

"Ne quid nimis."

NUTRITION.

IT is certainly refreshing to come across a book[1] on so universally interesting a subject as nutrition, and one so much discussed and written about, which is inspired by some original thinking. Mr. Sohn has little respect for any sort of food-faddist. But the early chapters of this admirable little book show that his knowledge of the physiology of digestion and the chemistry of tissues and tissue waste is ample for the task he has undertaken. The chemical consideration of the body is necessarily short, but it is clear and well arranged, space being found for a shrewd glance at the latest researches, such as those into the function of enzymes and hormones. It is, however, in the practical questions of food in relation to chemistry that the author is at his best. Two of the most striking chapters are those on infant feeding and on bread. Infant feeding may almost be described as a battlefield of warring authorities, and here a judicious discrimination is shown in dealing with the vexed questions arising round sterilisation, condensed milks, whey formulas, and other controversies, which have produced a multitude of witnesses, some of hard-swearing capacity. The conclusions drawn are not very definite, but no one is quite in a position to draw absolute conclusions as yet. Any indecision is atoned for in the section on proprietary foods for infants, for with one or two exceptions they are condemned by Mr. Sohn, and it is a fact that they are too frequently used improperly. The same general criticism when applied to meat extracts may also be tempered by the recollection that the claims made for them have obscured their real value. In the descriptions of cereals and breakfast foods the writer is quite practical, and he makes excellent remarks on the chemistry of bread-making. "Breakfast foods" are shown not to differ in composition from ordinary cereals, unless some malting process has been applied to them. Such a process is, in the author's opinion, a doubtful advantage except for invalids, for it tends to reduce the digestive work upon starch; and we do not increase our energies by abstaining from work. Many out-of-the-way food products are considered, such as the rarer fruits and the fungi. Naturally there are gaps here; for instance, no mention is made of laver (ulva maritima). Among commoner foods we find no reference made to rhubarb, and its virtues and disadvantages. Such small matters only accentuate the author's fulness and accuracy, sustained throughout a very valuable, well written little work which ought to have an excellent reception at the present moment.

THE TREATMENT OF IMPERFECTLY DESCENDED TESTICLES.

IN the *American Journal of the Medical Sciences* for July Mr. E. M. Corner has given his latest experiences in the treatment of undescended testicles—a subject to which he has devoted attention for many years. He considers the imperfect descent to be due in almost all cases to some arrest of development. The tunica vaginalis remains in communication with the peritoneal cavity, a condition predisposing to the development of hernia. It is often impossible to decide whether the imperfect descent is temporary or permanent. As long as there is no hernia or if the malformation is unilateral, Mr. Corner thinks there need be no hurry in determining this point. He terminates his expectant attitude on finding a hernia accompanying the imperfect descent or on recognising that the latter is not mere belatedness. For a hernia he considers there is no other treatment than operation; a truss would press on the testicle or its vessels. Moreover, the non-separation of the tunica vaginalis and peritoneum prevent the testicle from descending, even if it were capable of doing so; the hernial sac holds the gland up. In separating the sac from the cord injury to the vessels should be anxiously avoided. When the testicle has been imperfectly descended for a sufficient time—say, until the patient is 7 years old—to show that the condition is permanent, operation is recommended, which may be done in one of three ways. 1. The hernial sac may be divided and stripped of the cord, allowing the testicle to descend into the scrotum. Any but the mildest scrotal fixation is merely a prelude to failure, anatomical or physiological. 2. The gland may be removed—an operation specially indicated when the malformation is unilateral. 3. The gland may be returned to the abdomen intraperitoneally—an operation which is especially indicated when the condition is bilateral and conserves the internal secretion of the testicle. Should the testicle be unable to furnish an external secretion spontaneously, no operation will enable it to do so; while experience has shown how prone orchidopexy is to be followed by atrophy and fibrosis. The article thus sums up the treatment. Up to the age of 5 years watch the case to decide if the testicle is merely late in descending or not. If a hernia is present, operate and conclude by doing orchidoplasty. From the age of 7 to 20 years operate whether a hernia is present or not. Do either orchidoplasty, orchidectomy, or orchidocœlioplasty. Above the age of 20 do orchidectomy. The imperfect descent of the testicle is masked if the accompanying hernia pushes the gland down into the scrotum. The condition is not recognised until the hernial sac is stripped up and removed and the radical cure done.

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[1] Nutrition: A Guide to Food and Dieting. By Charles E. Sohn, F.I.C., F.C.S. London: Henry Kimpton. 1914. Pp. 256. Price 3s. 6d. net.

The testicle then assumes the position of imperfect descent. Such cases are recommended for scrotal orchidopexy.

DURING the continuance of the war the size of THE LANCET will be curtailed. This has been necessitated primarily by the difficulty in ensuring an adequate supply of paper, but the contributions of most of our correspondents on the continent have failed, and will fail, to reach us. Many special features of THE LANCET have had to be sacrificed for the time, and while we ask the indulgence of our readers for this, we promise to restore them at the earliest possible opportunity.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

Deputy Surgeon-General Donald Templeton Hoskyn has been promoted to the rank of Surgeon-General in His Majesty's Fleet (dated August 7th, 1914).

Fleet-Surgeon Daniel Joseph Patrick McNabb has been promoted to the rank of Deputy Surgeon-General in His Majesty's Fleet (dated August 7th, 1914).

ROYAL NAVAL VOLUNTEER RESERVE.

The undermentioned have been appointed Surgeons: William Charles Macartney (dated August 21st, 1914). David James Williamson (dated August 9th, 1914).

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel Arthur E. Morris is retained on the active list under the provisions of Article 120, Royal Warrant for Pay and Promotion, 1913, and to be Supernumerary (dated August 31st, 1914).

Lieutenant-Colonel William L'Estrange Eames, C.B., Australian Army Medical Corps, is granted the temporary rank of Lieutenant-Colonel (dated Sept. 2nd, 1914).

Major Edmund P. Hewitt, from the half-pay list, is restored to the establishment (dated August 21st, 1914).

The undermentioned Captains to be Majors (dated Sept. 1st, 1914): John W. S. Seccombe, Herbert V. Bagshawe, Robert J. Franklin, Maurice G. Winder, and George H. J. Brown.

Supernumerary Captain Harry S. Ranken, from the seconded list, is restored to the establishment (dated August 8th, 1914).

The undermentioned are granted the temporary rank of Lieutenant:—Dated August 10th, 1914: Francis William O'Connor and Charles Newton Binney. Dated August 11th, 1914: Leonard Leigh Hadley, Herbert Meredith Harrison, and Harold Eustace MacMahon Wall. Dated August 12th, 1914: Charles Hotham Evans and James Robertson Campbell Greenlees. Dated August 13th, 1914: William Allan Stewart, Trevor Abbott Lawder, Donald Keith McDowell, George William Smith, Alan Douglas Anderson, and Arthur Anderson Martin. Dated August 14th, 1914: John Hewat, Gilbert Laurie Kerr Finlay, Edward O'Connor, Aleck William Bourne, John Donal Carroll, William Duguid, Robert Henry Cummins Lyons, Arthur Starkie Plant, Cecil Bluett, Hubert Arnold Pallant, John William Pell, John Frederick Gwyther Richards, Arthur Henry Bindloss, Edward Jocelyn Nangle, Robert Mandeville Alcorn, and Geoffrey Percy Humphery. Dated August 15th, 1914: George Cuthbert Mura M'Gonigle, Wilberforce Smith, Cameron Robertson Gibson, Leslie Meakin, Richard Wayland Smith, Sidney Trevor Davies, Edward Aitken Seagar, James Noble Armstrong, Hugh Palliser Costobadie, Victor Farrar Soothill, Arthur Noel Hodges, Lieutenant Edward Ercell Steele, Canadian Army Medical Corps, Oscar Reginald Lewis Wilson, Charles Edmund Hibbard, Henry Gilbert Peake, Arthur Tilbury, Edward Mervyn Thomson, Robert Ernest Lee, Henry Dyas Gasteen, Andrew Dillon Carberry, and Herbert Frederick Wilfred Adams. Dated August 16th, 1914: Henry Cordner, Francis Hernaman-Johnson, Frank Davidson Cairns, Bernard Harry Wedd, and Geoffrey Mason Fleming. Dated August 17th, 1914: Arthur Turnbull, Henry Christian Ernest Quinn, and Sidney Smith. Dated August 18th, 1914: Frederick Cecil Kyle Austin, Allan Leslie Christie, and Alexander Tulloh Inglis Macdonald. Dated August 19th, 1914: Ivan Clarkson Maclean, John Cecil Hallinan, and Robert Sewers Berry. Dated August 20th, 1914: Major Thomas Kay (Royal Army Medical Corps, Territorial Force), Arthur Griffith Maitland-Jones, Ian Macdonald Brown, and Byron Levick Hutchence. Dated August 22nd, 1914: Edward William Archer, Galvin Alexander Elmslie Argo, Robert Harper Alexander, Leslie Adamson, John Scouler Buchanan, Mark Blakiston Baines, Gideon Robert Ernest Colquhoun, Michael Joseph Cronin, Spencer Stawell Crosse, Durie Avery Chamberlain, David Duncan Craig, Walter Dawson, Cosmo William Fowler, Rudolf William Galloway, Harry Leroy Satterlee Griffiths, Thomas Gilchrist, Ronald Nelson Hunter, Charles Herbert Hart, Robert Hamer Hodges, William Henderson, Thomas Herbert Williams Idris, Francis Henry Moxon, James Murray McLaggan, Douglas McAlpine, Francis Leslie Nash-Wortham, John Proctor, Cresswell Lee Pattison, William Douglas Reid, Gerald Noel Boyd Sebastian, Issachar Reuben Smith, Thomas Sidney Stafford, Andrew Topping, Edward Hugo Udall, and John Mayor Wilson. Dated August 24th, 1914: Howard Havelock Hepburn and Ambrose Lorne Lockwood.

The undermentioned Sergeant-Majors to be Quartermasters, with the honorary rank of Lieutenant:—Dated August 12th, 1914: George John Smith, Arthur Huntingford, John Wickersham, Frank Higdon, George Thomas Bray, Edwin Birch, Burton Charles Dring, Arthur George Powell, Robert Scott Adie Reynolds, Charles Drury, and Frederick John Filmer.

The appointment to temporary Second Lieutenancies of the undermentioned is cancelled: Frederick Sowrey and Archibald Carmichael Williamson.

The date of the grant of the temporary rank of Lieutenant to Lancelot Gerard Bourdillon is August 10th, 1914, and not as previously stated.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

Philip Seston Vickerman, late Lieutenant, Royal Army Medical Corps, Special Reserve, to be Lieutenant (dated August 11th, 1914). John William McNee to be Lieutenant (dated August 13th, 1914).

No. 18 Field Ambulance:—The undermentioned Captains to be Majors: Charles Roberts and Henry G. Smeeth (dated August 19th, 1914).

The undermentioned officers of the Royal Army Medical Corps (Territorial Force) to be appointed to the Ambulance:—Dated August 4th, 1914: Captain Albert Ramsbottom, 1st East Lancashire Field Ambulance, to be Captain; Captain William Fraser Munro, 2nd East Lancashire Field Ambulance, to be Captain; Lieutenant Kingsmill Williams Jones, 3rd East Lancashire Field Ambulance, to be Lieutenant; Lieutenant William James Reid, 3rd East Lancashire Field Ambulance, to be Lieutenant; Captain David Brynmor Chilies-Evans, 3rd Welsh Field Ambulance, to be Captain (dated August 5th, 1914).

The undermentioned Cadets and ex-Cadets of the Officers Training Corps to be Lieutenants:—Arthur Joseph Beveridge (dated July 27th, 1914), John Mitchell Watt (dated August 4th, 1914). Dated August 5th, 1914: James Edward Jameson, John Francis Lyons, Cyril Edward Hammond Gater, Thomas Charles Studley, Charles Dudley Maybury Buckley, John Cecil Alexander Dowse, Harry Ernest Bantry White, Mortimer McGee Russell, Joseph Patrick Quinn, and Edgar Llewellyn Foot Nash. Dated August 6th, 1914: Robert Lance Impey, Bertrand Cecil Owens Sheridan, Douglas Chetham Pim, George Albert Clark, and Carl Damien Newman. Dated August 8th, 1914: John Stuart Dockrill, Douglas Cran, Thomas Clifford Owen, George Dalziel, and Norman Braithwaite. Dated August 9th, 1914: John Armstrong Crozier Kidd, John Lansdowne Perceval, Edward Noel Hillman Gray, Richard Edward Grandy, and Maurice Baylis King. Dated August 10th, 1914: Charles Frederick Hacker and James Kenworthy Johnston Haworth. Dated August 11th, 1914: Eric Spanton Mawe. Dated August 12th, 1914: James Carter Ogilvie. Dated August 13th, 1914: Cecil McLaren West and Frank Percy Freeman.

Supplementary to Regular Units or Corps.

The undermentioned cadets and ex-cadets of the Officers Training Corps to be Lieutenants (on probation): John Duncan Steele and Samuel Durham Lodge (dated August 5th, 1914); John James Digges La Touche, Francis Hennessey Goss, and George Vincent Stockdale (dated August 7th, 1914); Charles Gordon Todd (dated August 8th, 1914); Henry Evers and Frank Cecil Harrison (dated August 10th, 1914); James Purdie and Geoffrey Say Trower (dated August 11th, 1914); Alexander Glen and Peter Williams Edwards (dated August 12th, 1914); George Charles Louis Woodroffe (dated August 13th, 1914); Oswald Duke Jarvis (dated August 14th, 1914); William Barclay (dated August 16th, 1914); Alfred Leopold Robertson, William Walford Salisbury Sharpe, William Charles Bernard Meyer, David Stanley Martin, and Robert McKinlay (dated August 17th, 1914).

The undermentioned to be Lieutenants: John Fraser, late Lieutenant, Royal Army Medical Corps Special Reserve (dated August 11th, 1914). On probation: Henry Searle Baker (dated August 13th, 1914), Oswald Cornwallis Stratford Tandy (dated August 14th, 1914), and John Lane Kilbride (dated August 16th, 1914).

TERRITORIAL FORCE.

Royal Army Medical Corps.

Nottinghamshire (Sherwood Rangers): Surgeon Captain

George Thomson to be Surgeon-Major (dated February 26th, 1914.)

Eastern Mounted Brigade Field Ambulance: Meredith Sedgwick Doubble (late Captain, Eastern Mounted Brigade Field Ambulance) to be Captain (dated August 26th, 1914)

2nd London (City of London) Field Ambulance: Louis Courtauld to be Lieutenant (dated August 26th, 1914).

1st North Midland Field Ambulance: Herbert Woodley Joyce to be Lieutenant (dated August 22nd, 1914).

2nd North Midland Field Ambulance: To be Lieutenants: Lionel Thomas Challenor and Maurice Holdsworth Barton (dated August 26th, 1914).

1st South Midland Field Ambulance: The undermentioned Captains to be Majors: William Malcolm Sturrock and William McCall (dated August 26th, 1914).

2nd South Midland Field Ambulance: Lieutenant John Dale to be Captain (dated August 26th, 1914). To be Lieutenants: William James Charles Bruerton Pitt, Ernest Joseph Clifford Groves, and Ralph Alexander Broderick (dated August 22nd, 1914), and Kenneth Arly Petersfield Rynd Murray (dated August 29th, 1914).

3rd Northumberland Field Ambulance: Lieutenant August F. Perl to be Captain (dated July 13th, 1914).

1st Welsh Field Ambulance: Joseph Muller Fonseca to be Lieutenant (dated August 26th, 1914).

3rd Lowland Field Ambulance: Lieutenant Arthur Cotterell McMaster, from the 1st New Zealand Field Ambulance, to be Lieutenant (dated August 29th, 1914), and James Abbey Henderson to be Lieutenant (dated August 22nd, 1914).

Highland Mounted Brigade Field Ambulance: Evan Alexander Mackenzie to be Lieutenant (dated August 22nd, 1914).

Notts and Derby Mounted Brigade Field Ambulance: Oswald Kentish Wright to be Captain (dated July 31st, 1914).

1st Home Counties Field Ambulance: Robert Reginald John Holmes to be Lieutenant (dated August 22nd, 1914).

1st East Lancashire Field Ambulance: To be Lieutenants: John Morley, Frederick Stanley Bedale, and Alexander Morrisou Mackay (dated August 22nd, 1914).

2nd East Lancashire Field Ambulance: Lieutenant William J. Purves to be Captain (dated June 21st, 1914).

3rd East Lancashire Field Ambulance: To be Lieutenants: John Cecil Jefferson, Nicholas Hopkins Henry Haskins, and Frank Kershaw Tomlinsou (dated August 22nd, 1914).

3rd West Lancashire Field Ambulance: Harry Middleton to be Lieutenant (dated August 22nd, 1914).

1st Northumbrian Field Ambulance: Major Frank Hawthorn to be Lieutenant-Colonel (dated August 22nd, 1914).

2nd Northumbrian Field Ambulance: Captain Duncan A. Cameron to be Major (dated August 8th, 1914).

1st West Riding Field Ambulance: Harry Lee to be Lieutenant (dated August 22nd, 1914).

2nd West Riding Field Ambulance: The undermentioned Captains to be Majors: Harold Collinson (dated August 5th, 1914) and Frederick Whalley (dated August 6th, 1914).

1st London (City of London) General Hospital: Major D'Arcy Power to be Lieutenant-Colonel (dated August 22nd, 1914).

4th London General Hospital: Lieutenant-Colonel Nestor I. C. Tirard, from the Mobilisation List, to be Lieutenant-Colonel on the permanent personnel (dated August 26th, 1914). The undermentioned officers to be seconded (dated August 26th, 1914): Major Richard G. Hebb, Captain Raymond H. P. Crawfurd, Captain Francis Jaffrey, and Captain Edmund I. Spriggs. Seconded under the conditions of paragraph 112 of the Territorial Regulations: Captain Ernest R. Carling (dated August 26th, 1914) and Captain William Turner (dated August 29th, 1914).

2nd Northern General Hospital: Joseph le Fleming Coy Burrow to be Captain (dated August 26th, 1914).

4th Northern General Hospital: Lieutenant-Colonel George S. Stephensou resigns his commission (dated August 26th, 1914). Hugh Bernard Willoughby Smith to be Captain (dated August 26th, 1914).

5th Northern General Hospital: Captain Robert W. W. Henry, from the Mobilisation List, to be Major on the permanent personnel (dated August 22nd, 1914).

1st Southern General Hospital:—To be Captains: Bernard Joseph Ward and Samuel George Webb (dated August 11th, 1914).

5th Southern General Hospital: Lieutenant-Colonel and Honorary Surgeon-General George G. Sparrow resigns his commission (dated August 22nd, 1914). Lieutenant-Colonel John R. S. Robertson resigns his commission (dated August 22nd, 1914). Major Charles F. Routh to be Lieutenant-Colonel (dated August 22nd, 1914). The undermentioned Captains to be Majors: Charles A. S. Ridout and Rolland A. Dove (dated August 22nd, 1914). To be Captains: Hugh Brooming Taylor Morgan, John Blackwood, Henry Lloyd Driver, William Carling, and Philip Herbert Green (dated August 22nd, 1914).

2nd Eastern General Hospital: Quartermaster and Honorary Major Theodore F. H. Briscoe is seconded (dated August 29th, 1914). Harcourt Howard Ross to be Quartermaster with the honorary rank of Lieutenant (dated August 29th, 1914).

1st Western General Hospital: Pantland Hick to be Captain (dated August 22nd, 1914).

4th Scottish General Hospital: Captain John S. Barr resigns his commission (dated August 26th, 1914).

1st London (City of London) Sanitary Company: To be Lieutenants: Arthur Thomas Pitts and Evelyn Charles Sprawson (dated August 22nd, 1914). Cresacre George Moor to be Lieutenant (Supernumerary) (dated August 26th, 1914).

Sanitary Service: Captain Middleton Connou is seconded (dated August 29th, 1914).

Sanitary Officers: Captain John Dale, from the 2nd South Midland Field Ambulance, is appointed Sanitary Officer to the South Midland Territorial Division (dated August 26th, 1914).

North Midland Clearing Hospital: Bernard Stracey to be Captain (dated August 22nd, 1914).

Attached to Units other than Medical Units.—To be Captains: Lieutenant Richard P. Ryan (dated Jan. 1st, 1914) and Charles Wright Edwards (dated August 26th, 1914). Major George Magill Dobson, Reserve of Officers, to be Major (dated August 1st, 1914). Surgeon-Lieutenant S. E. Rigg to be Surgeon-Captain (dated July 15th, 1914). To be Lieutenants: George Alexander Brogden (dated August 22nd, 1914), Charles Gordon Breutnall and Leonard West (dated August 26th, 1914), and Reginald Samuel Sherard Statham (dated August 29th, 1914).

TERRITORIAL FORCE RESERVE.

Royal Army Medical Corps.

Captain Leonard B. Cane, from Attached to Units other than Medical Units, to be Captain (dated August 22nd, 1914).

ORDER OF THE HOSPITAL OF ST. JOHN OF JERUSALEM IN ENGLAND.

The King has sanctioned the following promotions in, and appointments to, the Order of the Hospital of St. John of Jerusalem in England:—As Knights of Grace: Surgeon-General Sir Arthur William May, K.C.B., K.H.P., R.N.; Colonel John Edward Squire, C.B., M.D., F.R.C.P. (from Honorary Associate); and John Alexander Sutherland, M.B. Edin. (from Honorary Associate).

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In the 97 English and Welsh towns with populations exceeding 50,000 persons at the last Census, 9213 births and 4272 deaths were registered during the week ended Saturday, August 22nd. The annual rate of mortality in these towns, which had been 12·1, 12·0, and 12·6 per 1000 of their aggregate population, estimated at 18,120,059 persons at the middle of this year, declined to 12·3 per 1000 in the week under notice. During the first seven weeks of the current quarter the mean annual death-rate in these towns averaged 11·9, against a corresponding rate of 11·7 per 1000 in London. Among the several towns the death-rate in the week under review ranged from 3·5 in Coventry, 4·1 in Reading, 4·2 in Blackpool, 5·1 in Enfield, and 5·8 in Oxford, to 17·7 in Wigan, 18·5 in Bootle, 18·8 in Warriugton, 21·2 in Dewsbury, and 22·2 in Sunderland.

The 4272 deaths from all causes were 94 below the number in the previous week, and included 653 which were referred to the principal epidemic diseases, against numbers steadily rising from 394 to 588 in the six preceding weeks. Of these 653 deaths, 446 resulted from infantile diarrhœal diseases, 92 from measles, 51 from whooping-cough, 32 from diphtheria, 23 from scarlet fever, and 9 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 1·9, or 0·2 per 1000 above the rate in the previous week. The deaths of infants (under 2 years) from diarrhœa and enteritis, which had increased from 112 to 348 in the six preceding weeks, further rose to 446 in the week under notice, and included 109 in London, 31 in Sheffield, 30 in Liverpool, 25 in Birmingham, 18 in Sunderland, 15 in Manchester and in Newcastle, and 14 in Leeds. The deaths referred to measles, which had been 104, 99, and 111 in the three preceding weeks, declined to 92, of which 36 were registered in London, 10 in Liverpool, 8 in Oldham, 6 in West Ham, 6 in Leeds, 4 in Manchester, 4 in Sheffield, and 3 each in Birmingham and St. Helens. The fatal cases of whooping-cough, which had been 71, 52, and 65 in the three preceding weeks, fell to 51; 13 deaths occurred in London, 7 in Leeds, and 2 each in Croydon, Leicester, Liverpool, Oldham, and Newcastle. The deaths attributed to diphtheria, which had declined from 46 to 31 in the four preceding weeks, were 32 in the week ended August 22nd, of which 7 were registered in London, 3 in Merthyr Tydfil, and 2 each in Portsmouth, Norwich, Birmingham, Nottingham, Hull, and Newcastle. The deaths referred to scarlet fever, which had been 18, 15, and 19 in the three preceding weeks, further rose to 23, and included 8 in London and 3 in Birmingham. The fatal cases of enteric fever, which had been 11, 11, and 14 in the three preceding weeks, fell to 9, of which 4 occurred in Liverpool.

The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 3154, 3155, and 3072 at the end of the three preceding weeks, were 3071 on Saturday, August 22nd; 414 new cases were admitted during the week, against 405, 378, and 335 in the three preceding weeks. These hospitals also contained on August 22nd 1016 cases of diphtheria, 114 of whooping-cough, 44 of enteric fever, and 17 of measles, but not one of small-pox. The 1109 deaths from all causes in London were 53 in excess of the number in the previous week, and corresponded to an annual death-rate of 12·8 per 1000. The deaths referred to diseases of the respiratory system, which had been 113, 122, and 116 in the three preceding weeks, rose to 143 in the week under notice, and were 13 above the number in the corresponding week of last year.

Of the 4272 deaths from all causes in the 97 towns, 185 resulted from different forms of violence, and 356 were the subject of coroners' inquests, while 1336 occurred in public institutions. The causes of 36, or 0·8 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in London and in 12 of its 14 suburban districts, in Leeds, Bristol, Bradford, Hull, Newcastle, and in 61 other smaller towns. Of the 36 uncertified causes of death, 8 were registered in Birmingham, 6 in Liverpool, 3 each in West Bromwich and Bootle, and 2 each in Blackburn, Sheffield, Sunderland, and Gateshead.

In the 97 English and Welsh towns 8834 births and 4720 deaths were registered during the week ended Saturday, August 29th. The annual rate of mortality in these towns, which had been 12·0, 12·6, and 12·3 per 1000 in the three preceding weeks, rose to 13·6 per 1000 in the week under notice. During the first eight weeks of the current quarter the mean annual death-rate in these towns averaged 12·1, against a corresponding rate of 12·0 per 1000 in London. Among the several towns the death-rate last week ranged from 5·3 in East Ham, 5·9 in Ealing, 6·3 in Ilford, 6·7 in Bath, and 6·8 in Enfield and Southend-on-Sea, to 21·7 in Oldham, 22·0 in South Shields, 22·9 in Tynemouth, 23·2 in Sunderland, and 26·3 in Bootle.

The 4720 deaths from all causes were 452 in excess of the number in the previous week, and included 890 which were referred to the principal epidemic diseases, against numbers steadily increasing from 394 to 653 in the seven preceding weeks. Of these 890 deaths, 677 resulted from infantile diarrhœal diseases, 92 from measles, 52 from whooping-cough, 35 from diphtheria, 20 from scarlet fever, and 14 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 2·6, or 0·7 per 1000 above the rate in the previous week. The deaths of infants (under 2 years) from diarrhœa and enteritis, which had steadily risen from 112 to 446 in the seven preceding weeks, further rose to 677, of which 161 were registered in London, 61 in Liverpool, 37 in Birmingham, 30 in Leeds, 28 in Manchester, 23 in West Ham and in Sheffield, and 22 in Stoke-on-Trent and in Hull. The deaths referred to measles, which had been 99, 111, and 92 in the three preceding weeks, were again 92 last week, and included 34 in London, 9 in Liverpool, 9 in Leeds, 8 in Oldham, and 4 in Sheffield. The fatal cases of whooping-cough, which had been 52, 65, and 51 in the three preceding weeks, were 52 last week, of which 16 occurred in London, 4 in Leeds, 3 in Liverpool, and 3 in Manchester. The deaths attributed to diphtheria, which had been 39, 31, and 32 in the three preceding weeks, rose to 35, and included 13 in London, 4 in Birmingham, 3 in Liverpool, and 2 each in Ipswich, Stoke-on-Trent, and Oldham. The deaths referred to scarlet fever, which had been 15, 19, and 23 in the three preceding weeks, fell to 20; 4 deaths were recorded in London, 3 in Birmingham, 2 in Liverpool, and 2 in Manchester. The fatal cases of enteric fever, which had been 11, 14, and 9 in the three preceding weeks, rose to 14, of which 4 occurred in London, 2 in Preston, and 2 in Cardiff.

The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 3155, 3072, and 3071 at the end of the three preceding weeks, had increased to 3216 on Saturday, August 29th; 536 new cases were admitted during the week against 378, 335, and 414 in the three preceding weeks. These hospitals also contained on the same date 1031 cases of diphtheria, 80 of whooping-cough, 39 of enteric fever, and 17 of measles, but not one of small-pox. The 1179 deaths from all causes in London were 70 in excess of the number in the previous week, and corresponded to an annual death-rate of 13·6 per 1000. The deaths referred to diseases of the respiratory system, which had been 122, 116, and 143 in the three preceding weeks, fell to 132 in the week under notice, but were 4 above the number in the corresponding week of last year.

Of the 4720 deaths from all causes in the 97 towns, 167 resulted from different forms of violence, and 339 were the subject of coroners' inquests, while 1393 occurred in public institutions. The causes of 33, or 0·7 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in Sheffield, Leeds, Bristol, West Ham, Bradford, Newcastle-on-Tyne, and in 68 other smaller towns. Of the 33 uncertified causes of death 6 were registered in Birmingham, 4 in South Shields, and 3 in Liverpool.

HEALTH OF SCOTCH TOWNS.

In the 16 largest Scotch towns with an aggregate population estimated at 2,293,200 persons at the middle of this year, 1186 births and 658 deaths were registered during the week ended Saturday, August 22nd. The annual rate of mortality in these towns, which had been 12·9, 11·6, and 13·8 per 1000 in the three preceding weeks, further rose to 15·0 per 1000 in the week under notice. During the first seven weeks of the current quarter the mean annual death-rate in these towns averaged 13·3, against 11·9 per 1000 in the 97 large English towns. Among the several towns the death-rate ranged from 10·8 in Hamilton, 11·0 in Falkirk, and 11·7 in Clydebank, to 16·7 in Aberdeen, 17·6 in Motherwell and in Kilmarnock, and 18·9 in Ayr.

The 658 deaths from all causes were 50 in excess of the number in the previous week, and included 78 which were referred to the principal epidemic diseases, against numbers rising from 49 to 73 in the three preceding weeks. Of these 78 deaths, 40 resulted from infantile diarrhœal diseases, 13 from whooping-cough, 11 from diphtheria, 6 each from scarlet fever and enteric fever, and 2 from measles, but not one from small-pox. The mean annual death-rate from these epidemic diseases was equal to 1·8, against 1·9 per 1000 in the 97 large English towns. The deaths of infants (under 2 years) attributed to diarrhœa and enteritis, which had been 31, 29, and 36 in the three preceding weeks, further rose to 40 in the week under notice, and included 26 in Glasgow, 3 each in Dundee and Leith, and 2 each in Paisley and Greenock. The deaths referred to whooping-cough, which had been 7, 14, and 16 in the three preceding weeks, fell to 13, of which 9 were registered in Glasgow. The fatal cases of diphtheria, which had been 3, 5, and 7 in the three preceding weeks, further rose to 11, of which 5 occurred in Glasgow and 2 in Edinburgh. Of the 6 deaths attributed to scarlet fever, which were slightly in excess of the average in the earlier weeks of the quarter, 3 were recorded in Glasgow. The 6 deaths referred to enteric fever comprised 5 in Glasgow and 1 in Kilmarnock, and were double the average in the earlier weeks of the quarter. The fatal cases of measles occurred in Glasgow and Dundee.

The deaths referred to diseases of the respiratory system, which had been 61, 55, and 63 in the three preceding weeks, further rose to 69 in the week under review, and 33 deaths resulted from various forms of violence, against 28 and 25 in the two preceding weeks.

In the 16 largest Scotch towns 1059 births and 631 deaths were registered during the week ended Saturday, August 29th. The annual rate of mortality in these towns, which had been 11·6, 13·8, and 15·0 per 1000 in the three preceding weeks, declined to 14·4 per 1000 in the week under review. During the first eight weeks of the current quarter the mean annual death-rate in these towns averaged 13·4, against 12·1 per 1000 in the 97 large English towns. Among the several towns the death-rate during the week ranged from 4·1 in Hamilton, 5·1 in Kirkcaldy, and 7·3 in Kilmarnock, to 20·0 in Perth, 21·1 in Clydebank, and 23·6 in Ayr.

The 631 deaths from all causes were 27 fewer than the number in the previous week, and included 100 which were referred to the principal epidemic diseases, against numbers rising from 49 to 78 in the four preceding weeks. Of these 100 deaths, 64 resulted from infantile diarrhœal diseases, 15 from whooping-cough, 8 from scarlet fever, 6 from diphtheria, 6 from enteric fever, and 1 from measles, but not one from small-pox. The mean annual death-rate from these epidemic diseases was equal to 2·3, against 2·6 per 1000 in the 97 large English towns. The deaths of infants (under 2 years) attributed to diarrhœa and enteritis, which had been 29, 36, and 40 in the three preceding weeks, further rose to 64 in the week under review, and included 46 in Glasgow and 3 each in Edinburgh, Dundee, and Greenock. The deaths referred to whooping-cough, which had been 14, 16, and 13 in the three preceding weeks, rose to 15 last week, of which 12 were registered in Glasgow, The fatal cases of scarlet fever, which had increased from 2 to 6 in the four preceding weeks, further rose to 8, and included 6 in Glasgow. The deaths attributed to diphtheria, which had risen from 3 to 11 in the five preceding weeks, declined to 6 last week, and comprised

3 in Glasgow, 2 in Edinburgh, and 1 in Aberdeen. The 6 deaths referred to enteric fever, which were all recorded in Glasgow, were double the average in the earlier weeks of the quarter. The fatal case of measles occurred in Glasgow.

The deaths referred to diseases of the respiratory system, which had been 55, 63, and 69 in the three preceding weeks, were 70 in the week under notice, and 25 deaths resulted from different forms of violence, against 25 and 33 in the two preceding weeks.

HEALTH OF IRISH TOWNS.

In the 27 town districts of Ireland with an aggregate population estimated at 1,205,280 persons at the middle of this year, 606 births and 373 deaths were registered during the week ended Saturday, August 22nd. The annual rate of mortality in these towns, which had been 15·7, 16·4, and 15·3 per 1000 in the three preceding weeks, rose to 16·1 per 1000 in the week under notice. During the first seven weeks of the current quarter the mean annual death-rate in these towns averaged 15·7, against 11·9 and 13·3 per 1000 in the English and Scotch towns respectively. The death-rate was equal to 16·6 in Dublin (against 12·8 in London and 15·0 in Glasgow), 17·6 in Belfast, 24·5 in Cork, 10·1 in Londonderry, 13·5 in Limerick, and 17·1 in Waterford, while in the 21 smaller towns the mean death-rate did not exceed 11·1 per 1000.

The 373 deaths from all causes were 19 in excess of the number in the previous week, and included 51 which resulted from the principal epidemic diseases, against 40 and 49 in the two preceding weeks. Of these 51 deaths, 29 resulted from infantile diarrhœal diseases, 11 from measles, 7 from whooping-cough, 2 from enteric fever, and 1 each from scarlet fever and diphtheria, but not one from small-pox. The mean annual death-rate from these diseases was equal to 2·2, against corresponding rates of 1·9 and 1·8 per 1000 in the English and Scotch towns respectively. The deaths of infants (under 2 years) attributed to diarrhœa and enteritis, which had been 21, 18, and 26 in the three preceding weeks, further rose to 29 in the week under notice, of which 13 were registered in Dublin, 9 in Belfast, and 4 in Cork. The deaths referred to measles, which had been 11, 7, and 8 in the three preceding weeks, rose to 11, and comprised 7 in Belfast, 3 in Dublin, and 1 in Sligo. The fatal cases of whooping-cough, which had been 9, 6, and 8 in the three preceding weeks, were 7 in the week under review, of which 3 each occurred in Belfast and Cork, and 1 in Dublin. The deaths from enteric fever were registered in Belfast and Ballymena, and those from scarlet fever and diphtheria in Cork and Dublin respectively.

The deaths referred to diseases of the respiratory system, which had been 42, 47, and 46 in the three preceding weeks, were 47 in the week under notice. Of the 373 deaths from all causes, 127, or 34 per cent., occurred in public institutions, and 5 resulted from different forms of violence. The causes of 7, or 1·9 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the 97 English towns the proportion of uncertified causes did not exceed 0·8 per cent.

In the 27 town districts of Ireland 633 births and 406 deaths were registered during the week ended Saturday, August 29th. The annual rate of mortality in these towns, which had been 16·4, 15·3, and 16·1 per 1000 in the three preceding weeks, further rose to 17·6 per 1000 in the week under notice. During the first eight weeks of the current quarter the mean annual death-rate in these towns averaged 16·0, against 12·1 and 13·4 per 1000 in the English and Scotch towns respectively. The annual death-rate during the week was equal to 18·8 in Dublin (against 13·6 in London and 15·1 in Glasgow), 18·9 in Belfast, 14·3 in Cork, 10·1 in Londonderry, 21·7 in Limerick, and 17·1 in Waterford, while in the 21 smaller towns the mean death-rate did not exceed 14·7 per 1000.

The 406 deaths from all causes were 33 in excess of the number in the previous week, and included 91 which were referred to the principal epidemic diseases, against numbers increasing from 40 to 51 in the three preceding weeks. Of these 91 deaths, 67 resulted from infantile diarrhœal diseases, 7 from whooping-cough, 5 each from scarlet fever and diphtheria, 4 from measles, and 3 from enteric fever, but not one from small-pox. The mean annual death-rate from these epidemic diseases was equal to 3·9, against corresponding rates of 2·6 and 2·3 per 1000 in the English and Scotch towns respectively. The deaths of infants (under 2 years) attributed to diarrhœa and enteritis, which had been 18, 26, and 29 in the three preceding weeks, further increased to 67, of which 28 were registered in Dublin, 23 in Belfast, 4 in Cork, and 3 Lisburn. The 7 deaths referred to whooping-cough, comprising 6 in Belfast and 1 in Dublin, were equal to the average in the three preceding weeks. The 5 fatal cases of scarlet fever were slightly in excess of the numbers in recent weeks, and included 2 in Belfast. Of the 5 deaths attributed to diphtheria 4 occurred in Dublin and 1 in Belfast. The deaths referred to measles, which had been 7, 8, and 11 in the three preceding weeks, fell to 4 last week, of which 2 were registered in Belfast. Of the 3 fatal cases of enteric fever, 2 were recorded in Dublin and 1 in Ballymena.

The deaths referred to diseases of the respiratory system, which had been 47, 46, and 47 in the three preceding weeks, fell to 43 in the week under notice. Of the 406 deaths from all causes, 110, or 27 per cent., occurred in public institutions, and 8 resulted from different forms of violence. The causes of 8, or 2·0 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the 97 English towns the proportion of uncertified causes did not exceed 0·7 per cent.

VITAL STATISTICS OF LONDON DURING JULY, 1914.

In the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious diseases, it appears that the number of persons reported to be suffering from one or other of the 10 diseases specified in the table was equal to an annual rate of 7·8 per 1000 of the population, estimated at 4,516,612 persons in the middle of the year; in the three preceding months the rates were 6·3, 7·5, and 7·6 per 1000 respectively. The lowest rates during July were recorded in Paddington, Fulham, Hampstead, Hackney, and Wandsworth; and the highest rates in the City of Westminster, Chelsea, Stepney, Southwark, and Deptford. Scarlet fever showed an increased prevalence as compared with other recent months, and was proportionally most prevalent in the month under notice in the City of Westminster, Chelsea, Stepney, Southwark, Camberwell, Deptford, and Greenwich. The Metropolitan Asylums Hospitals contained 3113 scarlet fever patients at the end of July, against 2826, 2859, and 3045 at the end of the three preceding months; the weekly admissions averaged 410, against 312, 376, and 396 in the three preceding months. Diphtheria was slightly less prevalent than in either of the two preceding months; the greatest proportional prevalence of this disease during July was recorded in Chelsea, St. Marylebone, St. Pancras, Stoke Newington, Bethnal Green, Stepney, Poplar, and Woolwich. The number of diphtheria patients under treatment in the Metropolitan Asylums Hospitals, which had been 1121, 1078, and 1080 at the end of the three preceding months, had further declined to 1042 at the end of July; the weekly admissions averaged 131, against 130 and 140 in the two preceding months. The prevalence of enteric fever showed a slight increase; this disease was proportionally most prevalent in Chelsea, the City of Westminster, St. Marylebone, Wandsworth, and Lewisham. There were 36 enteric fever patients under treatment in the Metropolitan Asylums Hospitals at the end of July, against 39 and 40 at the end of the two preceding months; the weekly admissions averaged 6 during July, against 6 and 8 in the two preceding months. Erysipelas was proportionally most prevalent in Finsbury, Shoreditch, Bethnal Green, Stepney, Southwark, and Deptford. The 20 cases of puerperal fever notified during the month included 4 in Stepney, and 2 each in Fulham, Hackney, Southwark, Lambeth, and Wandsworth. The 5 cases of cerebro-spinal meningitis included 2 in Lambeth, and 1 each in Finsbury, Shoreditch, and Wandsworth; and the 9 cases of poliomyelitis included 3 in Stepney, 2 in Lambeth, and 1 each in Hampstead, Southwark, Bermondsey, and Wandsworth.

The mortality statistics relate to the deaths of persons actually belonging to the several boroughs, the deaths occurring in institutions having been distributed among the boroughs in which the deceased persons had previously resided. During the four weeks ending August 1st the deaths of 3912 London residents were registered, equal to an annual rate of 11·3 per 1000; in the three preceding months the death-rates were 13·8, 12·9, and 12·6 per 1000 respectively. The death-rates during July ranged from 7·1 in the City of London, 7·3 in Hampstead, 7·5 in Wandsworth, 8·8 in Stoke Newington and in Lewisham, and 8·9 in Paddington, to 13·8 in Stepney, 14·7 in Southwark, 14·9 in Holborn and in Bermondsey, 16·7 in Finsbury, and 18·8 in Shoreditch. The 3912 deaths from all causes included 443 which were referred to the principal infectious diseases; of these, 148 resulted from measles, 17 from scarlet fever, 37 from diphtheria, 70 from whooping-cough, 11 from enteric fever, and 160 from diarrhœa and enteritis among children under 2 years of age. No death from any of these diseases was recorded during July in the City of London or in Stoke Newington; among the other boroughs they caused the lowest death-rates in the City of Westminster, Hampstead, Wandsworth, and Lewisham; and the highest rates in Finsbury, Shoreditch, Stepney, Poplar, Bermondsey, and Greenwich. The 148 fatal cases of measles were 48 in excess of the corrected

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING JULY, 1914.

(*Specially compiled for* THE LANCET.)

CITIES AND BOROUGHS.	Estimated population in the middle of 1914.	NOTIFIED CASES OF INFECTIOUS DISEASE.												DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.									Deaths from all causes.	Death-rate per 1000 living.†
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cerebro-spinal meningitis.	Poliomyelitis.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Enteric fever.	Diarrhœa and enteritis (under 2 years).	Total.	Annual rate per 1000 persons living.		
LONDON	**4,516,612**	—	**1732**	**569**	—	**50**	**1**	**20**	**308**	**5**	**9**	**2694**	**7·8**	—	**148**	**17**	**37**	**70**	**11**	**160**	**443**	**1·3**	**3912**	**11·3**
West Districts.																								
Paddington	142,055	—	36	15	—	—	—	—	7	—	—	58	5·3	—	1	1	1	4	—	4	11	1·0	98	8·9
Kensington	170,817	—	63	13	—	1	—	1	11	—	—	89	6·8	—	2	1	2	—	—	4	9	0·7	124	9·5
Hammersmith	124,750	—	54	11	—	—	—	1	3	—	—	69	7·2	—	1	—	—	2	—	4	7	0·7	128	13·2
Fulham	158,849	—	51	9	—	2	—	2	9	—	—	73	6·0	—	2	—	—	2	1	6	11	0·9	133	11·3
Chelsea	63,791	—	32	11	—	2	—	—	2	—	—	47	9·6	—	—	—	1	1	1	1	4	0·8	52	10·1
City of Westminster	152,346	—	85	16	—	3	—	—	5	—	—	109	9·3	—	—	—	1	1	2	1	5	0·4	135	12·2
North Districts.																								
St. Marylebone	112,892	—	33	25	—	3	—	—	1	—	—	62	7·2	—	—	2	2	1	—	3	8	0·9	93	10·9
Hampstead	86,731	—	15	6	—	—	—	—	5	—	1	27	4·1	—	2	—	—	—	—	—	2	0·3	46	7·3
St. Pancras	212,497	—	85	33	—	3	—	—	16	—	—	137	8·4	—	1	1	3	—	—	10	15	0·9	206	12·6
Islington	324,764	—	92	49	—	4	—	1	26	—	—	172	6·9	—	12	1	1	7	1	6	28	1·1	290	11·3
Stoke Newington	50,454	—	16	11	—	1	—	—	1	—	—	29	7·5	—	—	—	—	—	—	—	—	—	36	8·8
Hackney	223,724	—	47	28	—	1	—	2	15	—	—	93	5·4	—	2	—	2	4	—	9	17	1·0	173	10·2
Central Districts.																								
Holborn	45,861	—	19	5	—	1	—	—	—	—	—	25	7·1	—	2	1	—	1	—	1	5	1·4	52	14·9
Finsbury	83,212	—	32	7	—	1	—	—	9	1	—	50	7·8	—	11	—	—	5	—	4	20	3·1	108	16·7
City of London	17,129	—	8	1	—	—	—	—	—	—	—	9	6·8	—	—	—	—	—	—	—	—	—	9	7·1
East Districts.																								
Shoreditch	108,869	—	22	14	—	2	—	—	12	1	—	51	6·1	—	25	—	1	6	—	11	43	5·1	152	18·8
Bethnal Green	127,662	—	40	20	—	1	—	—	23	—	—	84	8·6	—	6	—	2	2	1	6	17	1·7	112	11·9
Stepney	273,265	—	190	63	—	2	—	4	36	—	3	298	14·2	—	23	—	9	6	—	13	51	2·4	277	13·8
Poplar	160,222	—	32	29	—	2	—	1	16	—	—	80	6·5	—	9	2	—	5	—	16	32	2·6	167	13·5
South Districts.																								
Southwark	186,941	—	113	18	—	1	—	2	27	—	1	162	11·3	—	6	—	2	3	—	13	24	1·7	210	14·7
Bermondsey	124,213	—	45	14	—	—	—	—	7	—	1	67	7·0	—	15	1	—	1	—	4	21	2·2	142	14·9
Lambeth	296,724	—	121	39	—	3	1	2	7	2	2	177	7·8	—	1	1	4	5	2	10	23	1·0	262	11·3
Battersea	167,338	—	72	24	—	2	—	1	6	—	—	105	8·2	—	2	1	4	1	1	7	16	1·2	124	9·8
Wandsworth	338,998	—	81	23	—	7	—	2	18	1	1	133	5·1	—	—	—	—	4	—	8	12	0·5	194	7·5
Camberwell	262,020	—	133	28	—	3	—	1	13	—	—	178	8·9	—	5	2	—	6	—	6	19	0·9	193	9·5
Deptford	109,182	—	66	10	—	—	—	—	18	—	—	94	11·2	—	7	—	—	1	—	6	14	1·7	97	11·5
Greenwich	96,037	—	48	8	—	1	—	—	8	—	—	65	8·8	—	7	3	2	—	1	2	15	2·0	75	10·0
Lewisham	172,433	—	62	20	—	4	—	—	5	—	—	91	6·9	—	2	—	—	—	—	3	5	0·4	119	8·8
Woolwich	122,836	—	39	19	—	—	—	—	2	—	—	60	6·4	—	4	—	—	2	1	2	9	1·0	105	11·4
Port of London	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup. † The death-rates are corrected for variations in sex- and age-constitution of the populations of the several boroughs, the population of England and Wales being taken as the standard.

average number in the corresponding period of the five preceding years; this disease was proportionally most fatal during July in Finsbury, Shoreditch, Stepney, Bermondsey, Deptford, and Greenwich. The 17 fatal cases of scarlet fever were slightly below the corrected average number, and included 3 in Greenwich and 2 each in St. Marylebone, Poplar, and Camberwell. The 37 deaths from diphtheria were 6 in excess of the corrected average number; the greatest proportional mortality from this disease was recorded in St. Marylebone, Bethnal Green, Stepney, and Battersea. The 70 fatal cases of whooping-cough were 11 above the corrected average number; the highest death-rates from this disease occurred in Paddington, Finsbury, Shoreditch, and Poplar. The 11 deaths from enteric fever were 3 in excess of the corrected average number, and included 2 each in the City of Westminster and in Lambeth. The mortality from diarrhœa and enteritis among children under 2 years of age was proportionally greatest in St. Pancras, Finsbury, Shoreditch, Bethnal Green, Poplar, Stepney, Southwark, and Deptford. In conclusion, it may be stated that the aggregate mortality in London during July from the principal infectious diseases, excluding diarrhœa, was 31 per cent. above the average.

ITALY.

(From our own Correspondent.)

The Treatment of Syphilis.

The action of Herr Breuw against salvarsan has drawn from Professor Baccelli, the "grand old man" of Italian medicine, a letter of sympathy addressed to Professor Ehrlich. In it he draws attention to his own method of cure of syphilis by intravenous injections of bichloride of mercury, of which he prescribes 1 centigramme, with 75 milligrammes of sodium chloride in sterilised water, 2 to 10 grammes for each injection. The *Policlinico*, in which the letter above referred to was published, has for many years recorded from time to time wonderfully successful cases treated by this blood which has been applied to other severe method, infections, such as puerperal fever and septicæmia.

Mediterranean Fever in Italy.

The Office of Hygiene of Florence recently circularised the medical men of the district to draw their attention to the prevalence of Mediterranean fever in Tuscany. The circular invites their coöperation in combating the disease by notification of any case coming under observation and by instruction given to the patients and their friends to prevent diffusion of the malady. For this purpose the circular advises that the rules laid down should be on the same lines as those observed in the isolation and care of cases of typhoid fever. Florence is the second commune in Italy to adopt voluntary notification of Mediterranean fever, the lead having been given by Palermo.

Carnegie Awards to Medical Men.

Among recent Carnegie awards in Italy is that of a gold medal and a sum of money to Mr. Pietro Foianini, director of the Hospital Visconti Venosta, of Grosio. Whilst performing tracheotomy upon a case of diphtheria in March, 1913, to save the patient from suffocation he aspirated the contents of the trachea into his own mouth, saving his patient's life, but contracting a severe attack of the disease himself. A similar award has been made to the widow of Dr. Giannone, captain in the naval medical service, killed on board the steamship *Berlin* while trying to disarm a mad emigrant.

August 24th.

Correspondence.

"Audi alteram partem."

THE MIDDLE-AGED MAN AND THE WAR.

To the Editor of The Lancet.

Sir,—In the present crisis those who are middle-aged, although accustomed, perhaps, to regard themselves as in the "prime of life," have learnt to regret with sudden bitterness their lost youth. A man may have undergone no military training between 19 and 35, but still if he has that measure of youth on his side he is "wanted" by his country. And in many cases to respond to the call means no neglect of civilian responsibilities. The path of duty lies straight before these fortunate young men: subject only to the possession of sound physical health and an average physical strength they can be enrolled at once and their instruction in the art of soldiery can be begun. But if a man has reached the period of middle age that lies between 35 and 50 years, he may be physically sound, accustomed to an active life, and not lacking in courage, but his position is different, and the War Office does not intend to modify its practical appreciation of that difference.

A place in the fighting force now being raised by Lord Kitchener is not for the untrained middle-aged man, however vigorous, and I believe that this decision will find general favour in medical eyes, while it does not imply that such a man has no responsibilities towards the combatant forces of the army. In any case, owing to home responsibilities and other reasons, he might hesitate to offer himself for that particular branch of his country's service. What, then, is open to him, assuming that he is able to give his whole time, and to do so without leaving others dependent upon his country's gratitude or upon private charity? As to this last consideration, it can hardly be a man's duty even in the present crisis to burden others, and it should rather be for him, if he is not fit himself to join the army as a recruit in the ranks, or as an officer with some qualifications for the post, to help to bear the burdens of others more fortunate (as no doubt he will feel) than himself. He may wish to do more than this, and perhaps before long he will be able to see his way clearer than now to make use of what qualifications he may possess. The first need, however, of the country is men for the new army, and it is evident that the War Office will give no countenance to any kind of work or organisation which tends to distract attention from this point. The man who has any power that he can bring to bear should use it at once in order to assist the general recruiting, remembering that if he can lead only one or two men to the colours he is probably doing quite the best work that a man not likely to make a good soldier himself can perform. At present, and until the pinch of unemployment makes itself more bitterly felt, recruiting does not make the progress essential to success. It is, therefore, the pressing duty of all not themselves able to enter as recruits to secure the enlistment of others, finding what consolation they may in the accepted fact—accepted, I believe, in military circles all over the world, that the difference between 20 and 40 is felt sooner on the battlefield than anywhere. The admirable statement of the case uttered by Lord Roberts in addressing the new 10th Battalion of the Royal Fusiliers on August 29th, reminding the athlete that it is no time for games, that hundreds of thousands of men are wanted, but that only a minimum number can be officers, requires to be more widely read and appreciated. At the same time information as to centres of service for warfare and home defence will be found in the newspapers, or may be sought by unlucky veterans, to whom the door has been closed, at the headquarters of such bodies as the Honourable Artillery Company, the Corps of Veterans (ex-service men), and the Inns of Court Veteran Corps.

I have not dwelt upon the need there is and will be for those who are qualified by medical training to undertake the charge of the wounded. But I may suggest that for men not required for military service, or fitted by any previous training for the direct care of the wounded, there may before long be work in hospitals. Not all will be needed as organisers, but there is work for willing and strong hands to do, if their owners will fill subordinate positions and perform useful tasks under the orders and organisation of others. Personal ambitions must be subordinated.

I am, Sir, yours faithfully,

August 31st, 1914. ACTIVE 54.

GUN DEAFNESS AND ITS PREVENTION.

To the Editor of THE LANCET.

SIR,—With reference to Dr. Jobson Horne's paper in THE LANCET of August 15th on Gun Deafness and its Prevention the following points may prove of interest. If it has been determined by experiment that a gunner's ear is not damaged at a distance D feet from a heavy fortress gun, it does not follow that he may approach a small field-piece much nearer without harm resulting. An actual example from an examination paper will help to make this clearer: "There is a probability that if a man stands at so short a distance as D from the muzzle of a gun which discharges a projectile of weight W, his sense of hearing will be hurt. If D is proportional to the sixth root of W, and if D is 10 feet for the discharge of a 64 lb. shot, what is D for the discharge of a 9 lb. shot?" Here $D = (W)^{1/6}k$, k being a constant quantity. From data the value of k is 5, whence D for the 9-pounder works out to just over 7 feet, as against 10 feet for the 64-pounder. *The simple law of proportion does not hold good.* Perhaps this explains why so many artillery men are deaf. They think that because their ear is not hurt at, say, 11 feet from a large gun they may come quite close to a small gun with impunity.

I am, Sir, yours faithfully,

Shadwell, E., August 29th, 1914. ATHOLE ROSS.

LYSOL MADE IN ENGLAND.

To the Editor of THE LANCET.

SIR,—We are enclosing copy of several letters received from members of the medical profession who labour under the erroneous impression that we are a German firm trading in England. On the contrary, our principal is a loyal English-born subject, who has lived all his life in this country. Furthermore, all our staff are British, and there is no financial or moral relationship between our firm and Germany.

Trusting that you may be disposed to publish these facts in the interests of fair play,

We are, Sir, yours faithfully,
For CHAS. ZIMMERMANN AND CO. (CHEMICALS), LTD.,
O. A. ELIAS, F.C.S.,
Departmental Manager.

St. Mary-at-Hill, London, E.C., August 31st, 1914.

PS.—Lysol is now manufactured entirely in England under the analytical supervision of Ernest J. Parry, B.Sc., F.I.C., F.C.S., and Arthur R. Ling, F.I.C.

⁂ The four communications enclosed by Mr. Elias traverse this letter, one of them raising the pertinent question as to whom any royalties on sales may go. The same question has arisen this week about another advertisement for the appearance of which THE LANCET is under contract. We shall make immediate inquiries, and if these inquiries are not satisfactorily answered the advertisement will be suppressed.—ED. L.

"ENCYCLOPÆDIA MEDICA."

To the Editor of THE LANCET.

SIR,—We are at a loss to understand Dr. Henry Jellett's letter in THE LANCET of August 22nd, and do not know what else we could have said. In the announcement of the new edition of the "Encyclopædia Medica" we enclosed, as Dr. Jellett quotes from the prospectus, "a list of contributors to the first edition, with the addition of the names of those who have so far agreed to contribute to the second." Why Dr. Jellett should take exception to this or should, as he says, find it hard to believe that his name was included in this list we cannot conjecture. Does he for one moment mean to dispute the fact that he was a contributor to the first edition?

The statement is perfectly clear. The list contains: (1) The names of hundreds of specialists who kindly contributed to the first edition and who have either been or are going to be asked to revise the subjects on which they wrote; and (2) in addition to these, the names of new contributors who have kindly agreed to write articles for the second edition.

We are anxious to make the work as perfect as possible, and accordingly many new subjects must be dealt with. If Dr. Jellett will kindly re-read the paragraph we have no doubt but that he will do us the justice of a public expression that he has been mistaken.—We are, Sirs, yours faithfully,

W. GREEN AND SON, Limited.
(C. E. GREEN, Managing Director.)

Edinburgh, August 29th, 1914.

WANTED, AN EXPLANATION.

To the Editor of THE LANCET.

SIR,—I had a case of midwifery last December I should wish to record, and hope I may get some enlightenment regarding it. Mrs. A sent for me to attend her on Dec. 11th. I found her pregnant and apparently labour beginning. I saw her twice that day and every day for two or three days. The last time I was called—at 2 A.M.—I found labour actively going on, the os was dilated, and all usual signs of labour were present. The pains were fairly regular and the os became fully dilated. After waiting some hours the pains got less active, and I administered one drachm ergot liq. ext. One hour later I decided to administer chloroform and deliver. This was done. Everything appeared to be promising, and the child was a healthy, vigorous boy. I left about 6.30 A.M. Calling later in the day, I was surprised to learn that a change had come over the child; it was pinched and blue, and on examination the scrotum showed signs of venous effusion, being very cyanotic and swollen. The child was in a collapsed state and died a few hours later. The patient had a miscarriage the year previous to this confinement.

I can find very little in books to explain this case. My own surmise is that it may have been the action of ergot. I should be gratified for any information from readers of THE LANCET. The child was a most likely specimen at its birth; it cried and showed no defects or malformation of any kind.—I am, Sir, yours faithfully,

JAMES GILROY, M.B. Glasg.

Ecclefechan, August 20th, 1914.

HÆMORRHAGIC TYPHOID FEVER AND THE ADMINISTRATION OF QUININE.

To the Editor of THE LANCET.

SIR,—In regard to the valuable article on Hæmorrhagic Typhoid Fever, as seen in Calcutta, which Dr. Adrian Caddy and Dr. Barré Molony contributed to THE LANCET of July 18th, I would venture to draw their attention to a note that recently appeared in your columns on blackwater fever and its prevention by the use of the spectroscope,[1] which showed urobilinuria some 12 hours before the onset of hæmoglobinuria, and so gave warning to discontinue the administration of quinine. Dr. J. Mitford Atkinson recently mentioned that urobilin was present in the urine in all cases of malarial fever. Still it appears in far greater amount when blackwater fever is coming on during the administration of quinine; if quinine is still given the disease runs its full course; if quinine is stopped the patient has only a slight attack. Perhaps the obstinate hæmorrhage in Dr. Caddy and Dr. Molony's cases may have been connected with the quinine taken by all their patients. At any rate, it would be interesting and might shed some light on the cause of the hæmorrhage if they were to examine the urine of such cases for urobilin; it might be right to stop quinine when urobilin was present in quantity.

I am, Sir, yours faithfully,

W. H., M.D.

August 29th, 1914.

FIBROSITIS AND STREPTOCOCCAL INFECTIONS.

To the Editor of THE LANCET.

SIR,—Within the past few years increasing interest has been taken by investigators and the public alike in the far-reaching effects on the general health of the action of certain circulating toxins in cases of dental sepsis. This is evident from the correspondence on oral sepsis which has lately been appearing in THE LANCET.

The public are already aware of the dangers of pyorrhœa, and medical men generally are becoming aware of the intimate relationship between purulent conditions of the teeth and gums and their sequelæ of chronic pharyngitis, pyorrhœa narium (ozæna), middle-ear disease, antral (both mastoid and Highmore's) sepsis, sphenoidal and ethmoidal sinusitis, gastric sepsis, gastric ulcer, and anæmia. Cultures taken in such cases constantly prove this close association, and amongst the organisms so isolated I have perhaps, beyond all the others, found staphylococcus citreus the active agent. Not once but many times recently I have found this organism about the fangs of teeth which, apparently sound, showed on extraction denuded periosteum and sepsis of the alveolar cavity communicating with pockets about the neck of the tooth.

It is not, however, to this particular class of dental cases that I wish to draw the attention of your readers, but rather to a series of cases of less evident virulence which ought to be the study of every practitioner—those cases where at and about the tips of the teeth, themselves frequently healthy in appearance, often stopped or crowned, the streptococcus salivarius is actively secreting a toxin which it pours in a steady stream into the highly vascularised area around the fangs. This organism does not cause pus formation. It is found in small fibrous sacs attached to the periodontal membrane, and its action seems to be formative rather than destructive. The effects of its growth are shown wherever connective or fibrous tissues are in a state of enhanced activity or where such structures have been injured or overstrained.

Streptococcal fibrositis shows itself in a great variety of situations and under many clinical disguises, and it is my experience that whether intestinal or dental in origin its appearance must always be associated with the presence of the streptococcus brevis in one of these foci. Both forms give a histological picture which is very much the same where sequelæ or complications do not mask the special characteristics. Thus one finds in intestinal streptococcal activity adhesions about the cæcum and sigmoid flexure determining an intestinal stasis which leads to far-reaching changes, chemical, bacteriological, histological, and anatomical, in the gut itself, until the condition of mixed intoxication results which leads to ptosis of organs on the one hand, from softening and stretching of the lymphoid tissues of their attachments, and, on the other hand, to depression, malaise, and headache in the earlier stages, and later to actual dementia of a melancholic or, alternatively, violent type. Such cases are often accepted as purely mental, but are easily recognisable with a bismuth meal and X ray examination. I consider that hæmatological and X ray examinations ought to be matter of routine in all mental hospitals, and my personal experience leads me to believe firmly that streptococcal fibrositis with intestinal stasis and its sequelæ plays a rôle apparently undreamt of by many of those in charge of such cases.

It is difficult to state at any time without resort to very practical methods of exclusion whether streptococcal activity is highest in the intestinal tract or dental region. Our ideas of rheumatism and gout are, in the light of recently acquired knowledge, undergoing considerable change, and the results of intestinal disinfection with salicylates on the one hand and the recognition of the danger of "dead" teeth on the other have brought into prominence the necessity for thinking pathologically wherever in the past we have been handicapped by a name. "Neurasthenia," "gout," "rheumatoid," "neuritis," these and a host of other terms which convey no pathological picture to the mind of the thoughtful physician should be relegated to a pre-scientific past. We shall advance in treatment only as we insist upon an exact pathological terminology for etiological factors and pathological conditions. I am strongly of opinion that fibrositis, whether of the fine connective tissues of delicate structures or of the grosser fibrous tissues and membranes, is the expression of a chronic streptococcal toxæmia, and I could quote dozens of cases in illustration.

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[1] THE LANCET, June 6th, 1914, p. 1657.

"Growing pains" occur in cases where the physiological output of young people is at its highest and always in association with streptococcal mischief of intestinal or dental origin.

"Rheumatism" along the scapular border is common on the side most energetically used in youth—viz., the right, as in old tennis players. "Tennis elbow" is a true fibrositis with frequently a streptococcal origin at the fangs of a dead tooth. I have cases which prove this.

Recently I have traced the streptococcal origin to dead teeth in such cases as the following, associated always with progressive general weakness up to chronic invalidism.

(*a*) Brachial neuritis: from numb and cold fingers and hands, "pins and needles," weakness of grip, up to vesicular or bullous eruptions on the digits; loss of power and even impaired coördination of movement as in writing or typewriting.

(*b*) Sciatica, cramps in the lower limbs, numbness in feet and toes, incoördination with staggering uncertain gait.

(*c*) Acute intercostal neuritis or "neuralgia" simulating and actually recorded as "pleurisy." Cervical neuralgia, facial and scalp neuritis, twitching of muscles and even of limbs indicating fibrous pressure within nerve trunks.

(*d*) Fibromata of skin and of nerves, especially at pressure points. One of these in a guard in railway service appeared at the point where the ulnar nerve was pressed upon in leaning out on the half door of his brake to note signals ahead; another in the case of a golfer with fibrositis of both palms and a commencing Dupuytren's contraction from, perhaps, strain in the overlapping grip.

(*e*) Fibromata of organs, with in the female sterility from fibrous cervix, or hæmorrhages or menorrhagia from fibrous body of the uterus.

These cases have been very instructive because simple and uncomplicated. Later pathological changes in joint involvements are, as in the intestinal tract, induced by sequelæ proper to the organ, its contents, or its flora, but the streptococcus brevis is the common primary toxic agent in all.

In the *Times* of July 14th there was an account of "Morse Key Paralysis, Telegraphists' Cramp," from which it appears that 4·4 per cent. of Government telegraphists suffer, and large sums of public money are paid in compensation yearly to such sufferers under the Workmen's Compensation Act. I cannot accept the view that this is due to a central lesion. It seems to me that here also is a chronic fibrositis of the connective tissues between the bundles of nerve cells in the overworked area, and, as in tennis elbow, writers' cramp, golfers' grip, and other similar conditions of special areas, the toxæmia has got in its work as it always does at the point of overstrain or injury or prolonged fatigue. I consider that these cases ought to be examined for intestinal stasis and for dental sepsis of the streptococcal variety before closing the investigation, and that if this prove to be the true etiology, as I think it will, it should be in the future routine to find and treat this condition of teeth or large intestine as soon as the first signs of numbness are reported.

I am, Sir, yours faithfully,

A. WHITE ROBERTSON, L.R.C.P. & S. Edin.

The New Laboratory, Margaret-street, W., August 6th, 1914.

THE PLEA FOR IMMEDIATE OPERATION IN APPENDICITIS.

To the Editor of THE LANCET.

SIR,—With reference to the recent correspondence in your columns under this title, as I happen to be one of the first surgeons who advocated immediate surgical intervention in appendicitis, I wish to ask your permission to quote a few sentences from my original paper, published in THE LANCET of Feb. 3rd, 1900, which may be of some interest at the present time.

> I make bold to assert emphatically that these questions [*re* pathological condition of appendix] can only be answered by the introduction of the sense of sight and that clinical inferences are often miserable delusions in this disease. Imagine the feelings of an educated medical man on finding the patient whom he left at night with a flat abdomen and in good general condition on his arrival the next morning with a blown-out abdomen and all the symptoms of peritonism—no retreat but the grave. ...... I challenge anyone who has had any experience worth mentioning in appendicitis to deny the insidious rapidity with which a "simple" case may become converted into a fatal one.
>
> Some may ask, Why operate in every case when a large percentage undergo spontaneous cure? My reply is: (1) I cannot say at onset of any case that spontaneous cure will take place; (2) I am unable to guarantee that perforation without previous formation of protective adhesions may not suddenly occur; (3) cœliotomy with removal of the appendix is the most accurate method of diagnosis and cure with which I am acquainted; and (4) an appendix once infected is always infected and remains a weak spot. ...... Many surgeons still advocate leaving behind the appendix when obscured by adhesions in the face of pus. ...... I make it a rule never to quit the abdomen when operating for appendicitis without removing the appendix, and on three occasions I discovered a second collection of pus when searching for the appendix which undoubtedly would have been otherwise overlooked. I have over and over again broken down intestinal adhesions and have never yet caused fresh infection, which I attribute to the fact that I strive to let the light into a pus collection and clean up before proceeding further. ...... Leaving a moribund appendix in a living abdomen is not sound surgery.

In a second paper published on this subject in THE LANCET of August 16th, 1902, I endeavoured to prove that many cases of appendicitis cannot be effectively dealt with without separation of adhesions. One constantly is coming across instances of interintestinal pus collections and a gangrenous appendix buried between adherent loops of gut. If one is not prepared to separate adhesions in such cases, it is obviously futile to open the abdomen at all. In order to put this matter in clear perspective it is well to bear in mind that "the position of the appendix varies, although as a rule it is seen to lie behind the end of ileum and its mesentery, and to point in the direction of the spleen. It frequently also lies behind the cæcum" (Treves's "Surgical Applied Anatomy"). My personal experience fully confirms this statement, and, moreover, convinces me that the surgeon who says he can in the majority of cases before operation localise the appendix and anticipate by the presence or absence of symptoms the exact pathological condition, is a very superior person or a fool.

I cannot understand why adhesions in appendicitis should create such anti-operative panic. Time after time one sees in print that one of the principal reasons why cases of appendicitis should be left to rot is the danger of disturbing adhesions. In my opinion such reasoning is absolutely devoid of scientific or practical foundation. Of course, I assume that all surgeons know how to expose the infected area and allow themselves to be assisted by their eyesight.

Adhesions are Nature's temporary effort to limit the attack, and their function in a great measure ceases on the arrival of the surgeon. Nothing to my mind is more culpable than to ignore the fact that if the exciting cause is not removed these same adhesions become so dense and organised as not only to constitute a most serious operative complication but frequently a condition of things in the abdomen which are a post-operative nuisance if not an actual danger to the life of the individual. This is no supposition—I have had very bitter experience of it.

It is almost unnecessary to invite attention to a very common experience—the case brought into hospital a week to ten days after onset of gangrenous suppurating appendicitis. We open the abdomen; probably no pus flows into the wound; we inspect and find the right lower abdomen occupied by a conglomerate consisting of a thickened, infected, attenuated cæcum densely adherent to an equally rotten loop, or loops, of ileum. We proceed to separate as soon as we can make head or tail of the anatomy of the part, which is usually shrouded by a superficial layer of pyogenic membrane; the walls of involved intestine crumble even with the most gentle digital stroking. At last we strike a small foul-smelling abscess surrounding a perforated gangrenous appendix. These removed, we proceed to repair unavoidable intestinal lacerations; of course, each suture promptly cuts through—it cannot have any grip in such infected stuff—drainage-tubes are freely inserted, the parietal wound is left open, and within a week it is 10 to 1 that we see one or more gaping intestinal chasms—confusion worse confounded—enterectomy in a debilitated, poisoned, half-starved convalescent. I confess I have no words sufficient to express my utter contempt for the teaching which is responsible for such tragedies.

The farce of the whole thing is at once obvious, when one considers that there is not a surgeon worthy of the name who advocates the expectant adhesion policy in cases of acute pancreatitis, acute cholecystitis, or acute suppurative salpingitis, much less preach retreat for fear of disturbing adhesions in cases of gangrenous gall-bags or gonorrhœal pus-tubes. To my mind, the greater the density of the adhesion the stronger is the evidence that operative assistance has been too long deferred and the greater is the necessity for pushing home the attack. I think it may be taken as a rule that the density and number of adhesions are in direct ratio to the intensity of the primary infection. Also it is well to remember that in the worst form (fulminating) of appendicitis adhesions are conspicuous by their absence, due to the fact that the streptococcus is the predominant partner in the attack and presenting the usual characteristics of strepticæmia—profound poisoning, no pus, probably some turbid serum, and no plasticity.

Most of the above was written on the experience of 140 consecutive cases, and I wish to state that an additional experience of 1000 cases not only confirms the above opinions but absolutely convinces me that the postponement of surgical intervention in appendicitis until adhesion formation runs amok, the patient becomes saturated with deadly toxins, the lymphatics, veins, and liver become stuffed with bacterial thrombi, and walls of adjacent intestines become putrid with infective infiltration, is something more than a craze—it is homicide.

I am, Sir, yours faithfully,
JOHN O'CONOR, M.A., M.D., B.Ch. T.C.D.,
Senior Medical Officer, British Hospital,
Buenos Aires.

A SWISS FIRM.

To the Editor of THE LANCET.

SIR,—An impression appears to prevail in some quarters that we are a German house, and as such are no longer able to supply Roche Products. Both impressions are quite erroneous, the first, no doubt, being due to the fact that we have laboratories and works in Grenzach (Baden). Our head offices and laboratories are, however, at Basle (Switzerland), where we have been established for many years.

With regard to the second point, we are taking steps to announce the fact that we have large reserve stocks, and not only anticipate no difficulty in filling orders, but furthermore, do not propose to increase the prices.

We are, Sir, yours faithfully,
THE HOFFMANN-LA ROCHE CHEMICAL WORKS, LTD.
Idol-lane, E.C., Sept. 2nd, 1914.

ROYAL EARLSWOOD INSTITUTION, REDHILL.—Sir James Crichton-Browne, Lord Chancellor's Visitor in Lunacy, has forwarded to the Royal Earlswood Institution a letter of appreciation in which he says: "Earlswood is eminently deserving of generous aid. It is, I know, under wise scientific guidance, and should lead the way in that campaign against mental defect which is now being vigorously undertaken," pointing out that it has always been, in all senses, the premier institution in this country for the care and education of the weak-minded.

CRYSTAL PALACE AS A HOSPITAL.—With reference to the paragraph which we recently published announcing that the Crystal Palace had been offered to the War Office as a temporary hospital by Sir David Burnett on behalf of the trustees, we are informed that a reply has been received from the authorities stating that they are greatly obliged by the generous offer, but have at present sufficient hospital accommodation in the south-eastern district. The trustees of the Crystal Palace are requested, however, to allow the offer to remain open.

DONATIONS AND BEQUESTS.—By the will of the late Mr. William P. Brown, of Gloucester, solicitor, the testator left £500 to the Royal Infirmary, Gloucester.—Under the will of Colonel Oliver Ormerod Walker, V.D., of Bury, Lancashire, late of the 1st V.B. Lancashire Fusiliers, and late Conservative Member of Parliament for Salford and Mayor of Bury, the Bury Infirmary will receive £500 and the Bury branch of the Queen Victoria Jubilee Nurses' Institute a like amount.—Mr. Charles Bannerman, of Dundee, has left bequests to Dundee charities, including £1050 to the Dundee Royal Infirmary to endow a "Bannerman bed."—Mrs. Margaret Drysdale, of Glasgow, has bequeathed practically the whole of her estate of £20,000 to Glasgow charities and hospitals.—The late Mrs. Agnes Wise Whyte (or Smith), of Glasgow, has left the following legacies: Royal Infirmary, Glasgow, £500, and also £1250 to endow a bed in memory of the late William Whyte; Western Infirmary and Victoria Infirmary, Glasgow, £500 each; Glasgow Royal Hospital for Sick Children, Glasgow Samaritan Hospital, and Glasgow Asylum for the Blind, £200 each; Eye Infirmary, Glasgow, £100; and Glasgow Cancer Hospital, £50.—Mr. James France, of Hale, Cheshire, has left to Henshaws Blind Asylum, Old Trafford, Manchester, £100, and the same amount to the Deaf and Dumb Institute, Old Trafford.—Mr. Joseph Letiere Petit, steel pen manufacturer, chairman of Messrs. Charles Brandauer and Co., Limited (who left estate valued at £192,641 gross), bequeathed £100 to the Birmingham General Hospital, £100 to the Children's Hospital, £50 to the Eye Hospital, £50 to the Orthopædic and Spinal Hospital, and £50 to the Lying-in Charity, all of Birmingham.—The late Admiral Sir Charles Carter Drury, R.N. (retired), G.C.B., G.C.V.O., K.C.S.I., has left by will on the death of his mother, payable out of the securities with Macklin and Co., Frankfort-on-Main, Germany, £1050 to endow a "Frances Ellen Drury bed" at Middlesex Hospital and £1000 to the Cancer Hospital, Brompton.

THE WAR.

CASUALTIES TO OFFICERS OF THE ROYAL ARMY MEDICAL CORPS.

THE War Office issued on the evening of Sept. 2nd a report, received from General Headquarters of the Expeditionary Force, dealing with British losses so far as they could be ascertained. The list includes among the wounded the name of one officer of the Royal Army Medical Corps, Captain T. H. Gibbon, while the following officers of the corps are reported as missing:—Lieutenant A. J. Brown, Captain R. J. Cahill, Major P. H. Collingwood, Captain W. Egan, Lieutenant S. M. Hattersley, Lieutenant H. W. Hills, Major F. S. Irvine, Lieutenant C. L. Lander, Captain J. P. Lynch, Captain H. E. Priestley, Lieutenant L. M. Routh, Captain A. A. Sutcliff, and Colonel H. N. Thompson, D.S.O. The course of the operations over so extended a field accounts for the large proportion of missing officers and men out of a total casualty list of 5000, and there is good reason to hope that many of those who are as yet unaccounted for will later be reported as having come in. Captain Gibbon, the only officer as yet reported wounded, won the first prize in pathology and the De Chaumont prize in hygiene at the Royal Army Medical College in 1905.

THE RETURN OF THE WOUNDED.

From day to day news has been received of the arrival of wounded British soldiers from the front. Early this week consignments reached England and were safely despatched to the Royal Herbert Hospital at Woolwich, the Cambridge Hospital at Bishop Stortford, the Plymouth base hospital, the 5th Southern General Hospital at Portsmouth, and the London Hospital. Other batches have been received at the Military General Hospitals at Brighton and Birmingham. The sick and wounded have so far been landed at Southampton, the more serious cases being transferred at once to Netley. With a situation changing almost daily it is clearly impossible to give any detailed account of the arrival, disposition, and condition of the whole body of invalided soldiers who have returned this week; but one or two instances may serve to give an idea of the kind and extent of the treatment now being given at an increasing number of medical centres.

At the London Hospital 316 disabled soldiers were received on Sunday and Monday last. Their transference from Waterloo Station to hospital was looked after by members of the staff and students. Nearly all the cases are surgical, and the majority of the injuries are comparatively trivial. Perforated wounds of the limbs and in the neighbourhood of the head predominate, and most of the bullets seem to have passed through leaving inconsiderable effects beyond slight local sepsis in a certain number of cases. Old students of the London Hospital will be interested to learn that the wards in which the soldiers are being treated are Yarrow, Rachel, Currie, Cambridge, Richmond, Cotton, Crossman, Gurney, and Charrington. A large number of the men have already recovered sufficiently to be discharged to convalescent homes, but every case of injury by rifle bullet or shrapnel is undergoing a routine X ray examination. The soldiers as a whole seem well and in good spirits, and their appreciation of hospital care is obvious. Only a small number are confined to bed.

The first batch of wounded and sick soldiers from the front, numbering 121, arrived in Portsmouth on Tuesday morning, Sept. 1st. They were brought from France in hospital transports, reaching Southampton on the previous night, and were entrained for Portsmouth in a specially equipped hospital train. On arrival they were conveyed in motor ambulances and private motor cars to the 5th Southern General Hospital, established in a municipal school. There are 16 "cot" cases and many cases of rheumatic fever, indicating that the soldiers have suffered from camping on damp and marshy ground. All the wounded are from the battle of Mons, where the British forces played so gallant a part but suffered so severely. It is stated by them that the Germans fired on the field hospital and on the Red Cross bearers when carrying the wounded from the field of battle. A trainload of wounded and sick—3 officers and 121 men—arrived at Cosham on August 31st, and were conveyed to the Alexandra Military Hospital.

THE FRENCH PROVISION FOR SICK AND WOUNDED.

The following notes from one of our Paris correspondents show well the anxious preparations made by the French for the proper care of their sick and wounded in the war.

Paris, August 31st.

The secrecy observed as to military operations is applied to the doings of the medical staff. It is not even known in their own hospitals in which direction they have been sent, and no information is given as to when the wards prepared may be required. During the trying period of suspense a stupendous amount of organised preparation has been carried out. Not only has the vast machinery of the three French branches of the Red Cross Society been set in motion, but they have each doubled or trebled their usual capacity, while an incredible number of private offers have been made for the equipment of auxiliary hospitals and ambulances. Of course, it is hoped that much of this will remain unutilised; but the nation is aware that it is engaged in the most tremendous struggle in the history of the world in point of numbers, and France is calmly determined that no sudden emergency shall find her unprepared.

The Croix Rouge in France consists of three societies, of which the oldest, the Société Française de Sécours aux Blessés Militaires, celebrates its fiftieth anniversary this year. This society now possesses 375 territorial hospitals, 78 station infirmaries, 110 frontier posts, 70 dispensary schools, 10,000 nurses, and 3300 stretcher bearers.

Since war was declared 207 auxiliary hospitals have been organised, with a total of 1700 beds.

The subscription list opened by this society on August 10th has already gained 187,000 francs. Bands of trained nurses have been sent, among other places, to Rheims, Valenciennes, Amiens, Montdidier, Neufchâtel-sur-Aisne, Châlons, Belfort, Pont-à-Mousson, Fresnes-sur-Orne, and Sigmy l'Abbaye.

Sixty parties of trained nurses were sent to different points on the frontier, but the rapidity with which events have moved has prevented some of these from reaching their destination. Two waggon loads of medical stores have been dispatched to Brussels, and a band of ten nurses left on the 9th for Belgium at the request of the Comtesse de Merode, president of the Belgian Croix Rouge. Though the society only employs the nurses who have gained their diploma after a regular training course of some months, it has arranged three courses of elementary instructions to respond to the great demand among the women who wish to take their share of caring for their wounded. Besides the actual medical work the Société de Secours aux Blessés Militaires has organised several charitable depôts to help the distressed families who are left without their breadwinner.

The report just issued by the Union des Femmes de France shows that their 204 auxiliary hospitals are fully equipped to receive more than 13,000 sick or wounded soldiers. The nursing will be done by a staff of 10,000, aided by more than 2600 directresses. Flying columns composed of an infirmière major and five nurses are being mobilised in a few hours and despatched to their posts. Forty-three of these have been sent out since the beginning of hostilities.

No less important service has been rendered by the Association des Dames Françaises, which had 105 auxiliary hospitals ready by August 6th, each containing from 20 to 300 beds. All three societies have organised special ambulance classes, and they are now occupied in the inspection and organisation of the private houses, halls, &c., which have been placed at their disposal. No offer is accepted below the minimum number of 20 beds, and funds for their complete equipment must be guaranteed for at least three months.

The offers of help have been too numerous to mention in detail. Among the buildings offered to the Red Cross for the purpose are the Casino at Enghien, the hospital of Dr. Henri de Rothschild in the Rue Marcadet, the Comédie Française, where 50 beds have been established under the direction of Dr. Paul Mounet and the operations will take place in the artists' foyer, the actresses' home at Pont-aux-Dames, where 60 beds have been installed, and the nursing home of Dr. Bonnet in the old hotel of Prince Borghèse in the Rue de la Chaise. The last building is a valuable acquisition, as the home contains 200 beds, three operating rooms, a radiography installation, and a staff of 60 nurses under the direction of Madame Gaston Thomas. The surgeon-in-chief here is Dr. Jean Louis Faure. Madame Messimy, wife of the Minister for War, has organised an ambulance in the Lycée Henri Quatre and another in the École Polytechnique under the medical supervision of Professor Chantemesse and Dr. Cazin.

Many of the big shops are offering one or two floors with a complete ambulance installation. The Université of Les Annales is now transformed into a hospital with workrooms where the poor are engaged in paid work for the soldiers. The hospital Janson de Sailly has been arranged to receive 350 wounded under the direction of Dr. Le Fur. Many of the now empty schools and lycées have also been utilised, and among the specially welcome offers have been many châteaux placed by their owners at the disposition of the Croix Rouge for the use of convalescents. The English colony, under the presidency of Lady Granville, is meeting every day to do Red Cross work at the Embassy church rectory, and an offer has been made to the French Government for the establishment of a Canadian ambulance in Paris with a complete equipment of 50 beds. Besides the elaborate organisation for the reception of the wounded, great care is being taken to relieve distress among the families of soldiers who have gone to the front. A huge network of charities working under the direction of the three Red Cross societies in coöperation with the Assistance Publique has sprung into existence with that deft swiftness which characterises French action in a great emergency.

A central office for the "Assistance Maternelle et Infantile" has been created since war was declared and is doing a great work, while there are numberless societies for distributing food and clothing, for organising work, and caring for children.

On Monday afternoon our correspondent left Paris, reporting that the city was perfectly calm and orderly, but that the population was much tried by the paucity of news to which the Government would give its formal support. The news supplied by the many refugees, and by soldiers returning from the front wounded, had got into circulation, and was naturally depressing in its effect, and it was generally felt in Paris that the situation might have been more explicitly revealed from day to day. Foreigners were all leaving the city by the end of last week, and those remaining were quietly preparing to endure a siege.

NORTHERN MILITARY GENERAL HOSPITALS.

We published last week the personnel of the *à la suite* staffs of the London Military General Hospitals, with a few details of their organisation, as we had already done in respect of other of these institutions. The object in so doing was to show that the best surgical and medical aid possible will be at the disposal of the forces, Territorial or Regular. We give similar information this week concerning the Northern General Hospitals.

First Northern General Hospital.—During time of peace the office of this hospital is situated at the Drill Hall, Hutton-terrace, Newcastle-on-Tyne. Some time ago the Royal Infirmary authorities agreed to place 200 beds at the disposal of the military. Within 24 hours from the outbreak of war the beds were provided and on August 6th the first military patient was admitted to the infirmary. The First Northern General Hospital is situated in Armstrong College. The laboratories and lecture rooms have been converted into adequate wards. The unit was mobilised on August 5th and on August 8th patients were being admitted to the Armstrong College Hospital. They have since come in increasing numbers, and by Sept. 1st 546 sick in all had been admitted, 316 patients being then in residence. A large number of cases also not requiring admission are seen daily at the receiving room. The unit consists of 520 beds, the personnel of 21 officers, 43 non-commissioned officers and men, 91 nurses, and 38 civilian subordinates. Practically the whole of the staff of the Royal Infirmary are on the staff of the First Northern General Hospital. To Major T. Gowans, the officer commanding, and to his staff the greatest possible credit is due for the speed of mobilisation and for the very efficient work being carried out. The operating theatre is in constant requisition, but all the more serious cases are taken to the infirmary, where 50 beds are still reserved for military cases. Practically the whole of the staff of the First Northern General Hospital—officers, men, and nurses—have volunteered for service abroad as a unit, while many have volunteered for individual service if called upon. On mobilisation the following physicians and surgeons form the staff:—Lieutenant-Colonels: Dr. A. M. Martin, Mr. H. B. Angus, Dr. T. Beattie, and Dr. W. E. Hume. Majors: Mr. W. G. Richardson, Dr. R. A. Bolam, Dr. W. D. Arnison, Mr. J. W. Leech, Mr. G. G. Turner, and Mr. A. Parkin. Captains: Dr. G. Hall, Dr. T. M. Allison, Dr. D. W. Patterson, Dr. H. G. Slade, Dr. H. H. Markham, Dr. W. Seymour, Dr. F. G. Armstrong, and Dr. W. F. Wilson.

Second Northern General Hospital.—During time of peace the office of this hospital is situated at Harewood Barracks, Woodhouse-lane, Leeds. The hospital is situated at the Leeds Training College, the administrative block of which is now occupied by 480 beds, 20 of which are under canvas for the use of infectious cases. Three hostels are occupied by the personnel of 109 men and 120 nurses, the principal matron being Miss Innes, matron of the Leeds General Infirmary, and the matron, Miss Hills, who is matron of the Halifax Royal Infirmary (from which 40 nurses have been called up), and the officers, six of whom are in residence. A number of patients are now in hospital. The officer in command is Major J. F. Dobson. Major J. A. Coupland, Quartermaster Hon. Lieutenant C. H. Sedgwick and Chaplain the Rev. J. F. Phillips are attached. On mobilisation the following physicians and surgeons form the staff:—Lieutenant-Colonels: Dr. T. Churton, Mr. T. P. Teale, Dr. A. G. Barrs, and Mr. H. Littlewood. Majors: Dr. T. W. Griffith, Mr. R. L. Knaggs, Sir B. G. A. Moynihan, Dr. A. S. F. Grünbaum, Mr. H. S. Walker, Dr. W. H. M. Telling, Mr. W. Thompson, and Dr. G. W. Watson. Captains: Dr. A. L. Whitehead, Mr. T. R. Braithwaite, Dr. R. A. Veale, Mr. G. Constable Hayes, Dr. Wilfred Vining, Mr. S. W. Daw, Mr. E. W. Bain, and Dr. J. le Fleming Burrow.

Third Northern General Hospital.—During time of peace the office of this hospital is at Sheffield. The hospital is situated in the Women's Hostel in Collegiate-crescent, the Men's Training College, and the Men's Hostel in Clarkehouse-road, Sheffield. The officer in command is Lieutenant-Colonel A. M. Connell. Captain G. H. Pooley and Quartermaster Hon. Major D. Stout are attached. On mobilisation the following physicians and surgeons form the staff:—Lieutenant-Colonels: Dr. D. Burgess, Dr. W. S. Porter, and Dr. J. S. White. Majors: Dr. A. J. Hall, Dr. G. Wilkinson, Dr. A. E. Naish, Dr. A. R. Hallam, Dr. J. M. Beattie, and Dr. S. Riseley. Captains: Dr. W. H. Nutt, Mr. G. S. Simpson, Dr. A. G. Wilson, Dr. A. E. Barnes, Mr. H. J. E. H. Williams, and Dr. W. J. N. Vincent.

Fourth Northern General Hospital.—During time of peace the office of this hospital is at 6B, Guildhall-street, Lincoln. The hospital is situated at the Lincoln Public School, standing in large playing fields on the outskirts of the town. The carpenter's shop has made an excellent operating theatre, with a sterilising room attached supplied with steam from a high-pressure boiler. A dark room adjoining is now used by the radiographer, and there is an ample store for surgical material. The school laboratory makes an excellent dispensary and pathological laboratory, while the studies and masters' rooms on the ground floor afford admirable offices for administrative staff and clerks. The large gymnasium has been fitted up as a quartermaster's store, containing everything requisite for a hospital of 520 beds, while other rooms on the ground floor serve for various stores, medical officer's room, and guard room. The class-rooms and dormitories form excellent wards, accommodating 86 beds. The remaining 434 beds have been provided in 20-bed iron huts lined with wood, of the pattern used in the South African campaign. They are heated with "Tortoise" stoves, and have at one end a ward orderly's room and sister's room, and at the other, but separate from the ward, sanitary annexes. Water has been laid on to all these huts. A bucket conservancy system is at present in use, but the annexes have been so designed that a water carriage system of sewage disposal could be adopted at very little extra cost. A Washington-Lyons disinfector has been installed, worked by a high-pressure boiler, which also supplies steam for a steam cooker and boiler. The school kitchens, which are ample for 200 boys, are being augmented by gas and steam cookers. The 109 men of the unit are established in three huts adjoining the buildings. The sisters are lodged in the nurses' home of the Lincoln County Hospital, which has just been built as a memorial of King Edward VII., but has not yet been opened. The hospital was ready to receive patients within five days of the order to mobilise. The contractors who put up the huts had 500 men at work in three shifts, and the work was carried on all night by the help of arc lights. The officer in command is Lieutenant-Colonel W. H. B. Brook, and Major F. S. Lambert and Quartermaster Hon. Lieutenant J. E. Dickinson are attached. On mobilisation the following physicians and surgeons form the staff:—Lieutenant-Colonels: Mr. C. Brook, Dr. C. Harrison, Mr. G. H. Grimoldby, and Dr. G. S. Stephenson. Majors: Dr. W. A. Arline, Dr. E. M. Sympson, Dr. T. W. A. Daman, Dr. A. Westlake, Dr. D. J. G. Watkins, Dr. F. S. Genney, and Mr. E. C. Clements. Captains: Dr. O. H. Chapman, Dr. G. A. C. Shipman, Dr. B. McFarland, Dr. A. Burgess, Dr. A. A. Pratt, Mr. R. E. E. South, Dr. A. E. Wilson, Dr. A. Miller, Mr. O. Giles, Mr. J. E. S. Passmore, Mr. F. E. Withers, Mr. E. S. Winter, Dr. W. R. Higgins, Mr. G. L. H. Revill, Dr. F. Alcock, Dr. C. J. Coleman, Mr. G. J. R. Lowe, Dr. A. L. Yates, and Dr. J. J. Rainforth. The nursing staff consists of 91 fully trained sisters and nurses under Miss Bayldon as matron and Miss Sheppard as principal matron.

Fifth Northern General Hospital.—During time of peace the office of this hospital is at Leicester. According to the Army List the officer in command is Major L. K. Harrison, and Quartermaster Hon. Lieutenant G. E. Barfield is attached. On mobilisation the following physicians and surgeons form the staff:—Lieutenant-Colonels: Mr. G. C. Franklin, Dr. R. Pratt, and Mr. C. Douglas. Majors: Dr. R. Sevestre, Dr. T. V. Crosby, Dr. J. T. H. Davies, Mr. H. J. Blakesley, Mr. C. E. Marriott, Dr. J. S. Sloane, Dr. J. D. Slight, and Dr. R. Stewart. Captains: Dr. J. E. Waite, Mr. F. B. Carter, Mr. E. L. Lilley, Dr. R. R. Young, Dr. J. W. Patrick, Mr. E. V. Phillips, Mr. S. F. Smith, Mr. R. Michell, Dr. F. W. Bennett, Dr. R. W. W. Henry, Dr. W. E. Gibbons, Mr. R. R. Fagge, Mr. R. B. Stamford, Dr. W. M. Holmes, and Mr. W. I. Cumberlidge.

COÖPERATION BETWEEN CIVIL AND MILITARY SANITARY SERVICES.

As it is likely that during the next few months there will be occasions when the military forces will desire the assistance of the public health service in various parts of the country, the medical officer of the Local Government Board, after consultation with the War Office, is inviting medical officers of health of districts in which troops are or are likely to be stationed to place themselves in communication with the local military medical authorities, offering any services which may be useful. Communications dealing with matters of importance should be directed to the Deputy Director of Medical Services of the Command. As local medical officers of health they will be able to give valuable information and assistance to military sanitary officers in the following among other directions: (1) In advising as to all local water-supplies and as to their protection from contamination; (2) in helping to secure satisfactory disposal of garbage and other refuse; (3) in securing satisfactory drainage or conservancy arrangements; and (4) in the control of infectious disease, and in arranging for hospital provision for the ordinary infectious diseases, for convalescent cases of enteric fever, and for the carrying out of disinfection. It will be important for each medical officer of health to keep the medical officer in charge of any local troops informed of any cases of infectious disease within his area, and it is desirable to ask this officer to give him information similarly of cases of these diseases among the troops. The three diseases for which, under present circumstances, a constant outlook should be kept are typhus fever, enteric fever, and small-pox, especially the two last named. The War Office propose to arrange for each medical officer of health to have notified to him any soldiers convalescent from enteric fever coming into a sanitary area. The medical staff of the Local Government Board will be prepared to consult with medical officers of health on any points arising in connexion with this work, and a medical inspector will consult locally as to prospective arrangements when the need for this is indicated.

THE CHADWICK TRUST AND THE WAR.

The following resolution has been passed by the Chadwick trustees:—

> That in view of the immense importance of encouraging in every way the promotion of careful sanitary organisation in the naval and military services during the present campaign, the Chadwick trustees have resolved, under the powers conferred upon them under the scheme they administer, to announce their intention to award at the close of this year the Chadwick gold medal and £50 each to the naval and military officer respectively in the British service who shall have distinguished himself most in promoting the health of the men in the navy and the army. The nomination for such presentations to be, as provided by the terms of the trust, by the Directors-General of the Naval and Military Medical Services respectively.

The Chadwick trustees are also making arrangements for providing, or assisting in the provision of lectures and demonstrations on naval, military, and hospital hygiene. Particulars of these lectures will shortly be announced.

EDINBURGH AND LEITH PRACTITIONERS.

The medical profession in Edinburgh and Leith had a meeting on August 28th and passed the following resolutions unanimously:—

> That the medical practitioners of Edinburgh and Leith undertake to the best of their power to provide when required for the care of the patients of those of their professional brethren who have been called to the service of their country in this national crisis and also to safeguard in every possible way their professional interests, and will coöperate whenever possible with the Scottish Medical Emergency Committee constituted for these purposes.
>
> That it is desirable that the medical profession in Edinburgh and Leith should systematically coöperate with the Soldiers and Sailors Families Association and with the local committees of the National Relief Fund with regard to the provision of medical attendance on persons rendered necessitous by the war.

The meeting was strongly of opinion that there should be medical representation on the central and ward committees of the National Relief Fund. A special medical emergency committee was appointed. Twenty-eight medical men in Edinburgh and Leith have been called up for whole-time military or naval service, and there are many others engaged meantime in partial service at military hospitals and in Red Cross and ambulance organisation.

Order of the Hospital of St. John of Jerusalem in England.—It is officially notified by the War Office that the Ambulance Department of the Order of St. John of Jerusalem forms part of the Red Cross Organisation of Great Britain, equally with the British Red Cross Society and the St. Andrew's Ambulance Association, and is recognised by the British Government under Article 10 of the Geneva Convention as a society to assist the Medical Services in time of war. Funds are urgently needed by the Order, as already over 4000 men of the St. John Ambulance Brigade have been mobilised as hospital orderlies with the navy and army, several thousands more being held in reserve. Surgeons and a large number of fully certified hospital nurses have been despatched by the Ambulance Department to the seat of war at the request of the Belgian Red Cross Society. Contributions will be gratefully received by the chief secretary of the Ambulance Department of the Order, Colonel Sir Herbert Perrott.

The British Red Cross Society is advertising in a very prominent manner in the daily press that the society is in urgent need of more funds if effective and immediate aid is to be given to the sick and wounded at the front. Contributions are requested to be sent to the secretary at Devonshire House, Piccadilly, London, W.

The School Medical Service During the War.—The Board of Education understand that in a number of areas school medical officers and other officers engaged in the work of the school medical service will be giving their services to the navy or army, and that consequently difficulties may be experienced in carrying on the work of the school medical service. In a circular just issued the Board emphasises the importance that the work of the school medical service should be maintained throughout the country with the minimum of interruption or irregularity, and states that it relies upon local education authorities to do their best to make satisfactory arrangements for carrying it on. The Board will make every allowance for the difficulties with which local education authorities are confronted at the present time, and provided that in practice the existing work is carried on with reasonable efficiency the Board will accept, for the purposes of their own administration, the best arrangements which can be made, so long as the present emergency continues. The Board desire to be informed of each case in which officers of the school medical service are temporarily absent and of the arrangements proposed to be made for the discharge of their duties.

Officers of Local Authorities and the War.—The Local Government Board suggest that local authorities may properly grant leave of absence to officers in their employ who are already in His Majesty's forces or who join them with their permission, and may properly make such allowances in respect of salary as they think reasonable in the particular circumstances, paying temporary substitutes for them under Naval or Military Order. The Treasury regulations and instructions of August 11th and 20th, 1914, dealing with the case of civil servants on naval or military service, provide for the payment to them or to their representatives during their absence from civil duty of their full civil pay less a deduction on account of navy or army pay and allowances. Already a certain number of whole-time medical officials are with the colours.

Manchester Medical Arrangements.—Our Special Correspondent writes:—In addition to the elaborate and extensive provision of beds and other requisites for the wounded provided at the technical school at a very considerable outlay, the Royal Infirmary has arranged for placing at the disposition of the authorities a large number of beds. The Salford Royal Hospital has sent a communication to the Admiralty and to the War Office offering to provide beds for the reception of sick or wounded sailors or soldiers serving His Majesty who may be in need of hospital treatment. In the first instance 60 beds would be available, and this number could be increased to about 100 if need be. The offer has been accepted by the Admiralty and the War Office, with an intimation that the accommodation will be utilised if required. The Royal Infirmary has supplied directly from its own staff and from the list on its roster a large number of nurses to the naval and military authorities. In view of the opening of the winter session, which will take place on Oct. 8th, it is officially announced that arrangements have been made for the academic attendance of those students who have joined the Territorials. A reasonable allowance will be made as regards attendance in classes next session in the case of students undertaking military service. It is stated that a very considerable number of applications for commissions have been received for the Special Reserve and a much larger number for the Territorial Force. The quadrangle of the University presents a busy scene every forenoon, where a large number of recruits are being steadily drilled into shape. It is possible that special supplementary examinations may be held, but so far no official notice has been issued by the University authorities.

Canadian Loyalty.—The women of Canada, through H.R.H. the Duchess of Connaught, have offered to build, equip, and maintain a naval hospital for the officers and men of the Royal Navy. This generous offer has been accepted by the Admiralty with deep gratitude. The new hospital will be supplementary to the Royal Naval Hospital at Haslar, and will be known as the Canadian Women's Hospital.

The Grand Trunk Railway's steamer *Prince George*, carrying 200 saloon and 300 steerage passengers, has been fitted out at Esquimalt, B.C., by the Royal Canadian Dockyard as a hospital ship, in charge of Dr. C. B. Wainwright, with whom is Dr. Stuart Tidey. Her preparation took only three days, and she went to sea on August 11th. She will have accommodation for 100 cases in cots, besides those that can be put in passengers' cabins. A lift has been fitted to take patients from the main deck to the operating room. There are six nurses from the Jubilee Hospital, Victoria, and two retired sick-berth stewards, R.N. The equipment of the ship is throughout of the highest class, and the patients will be made very comfortable.

The Working of Voluntary Aid Detachments.—A correspondent writes, in reference to a communication published in THE LANCET of August 22nd, p. 527, over the initials "V.A.D.": "I am afraid 'V.A.D.' has not made himself fully acquainted with the working of the voluntary aid detachments or he has forgotten that as soon as the Territorial Force is mobilised they pass at once under the care of the military authorities. This has now happened and neither the Red Cross authorities nor any outside body has control over them. All directions and orders will be issued to the voluntary aid detachments by the military authorities through the county directors. Under these circumstances there is no need to call into existence a fresh governing body, as the military authorities will keep them in hand and curb their unauthorised endeavours to form local hospitals where they never will be wanted and thus waste money."

The Dearth of Revolvers and the War.—Since the war broke out attention has been called to a scarcity of revolvers such as are carried by military officers on active service, and protests have been made against a charge of more than double their normal price being made in some instances for these weapons. Various reasons have been advanced by manufacturers and others for this state of affairs, among whom Mr. W. W. Greener, of Birmingham, writing to the *Times*, ascribed the failure to maintain the supply of service revolvers primarily to the fact that Government orders for revolvers have all been given to one firm, but added the observation that in view of the "shrieking protests of the Press" in times of peace against the use of arms manufacturers naturally were afraid to make such weapons for stock. As protests (without shrieking) have frequently been published in THE LANCET against the unrestricted sale and carrying of cheap pistols, it is as well to point out that such observations as we have made have had no reference to weapons of the kind carried by military and naval officers as part of their equipment. Criminals, lunatics, hooligans, and schoolboys from time to time inflict death or injury upon others with revolvers which can be bought at any price from a few shillings upwards, but do not employ those heavier and costlier weapons the price of which has now been raised to £10, or was so raised a short time ago. If Mr. Greener really intended to allude to objections raised by the newspaper press to the sale of revolvers as having tended to prevent gunmakers from laying in stocks sufficient to supply our officers in time of war, we think he would find it difficult to justify his assertion. It would seem fitting that the military authorities should take the risk in future of holding a stock of revolvers.

AN ALLIED FORCES BASE HOSPITAL.—A hospital of 200 beds is to be erected in France with the approval of the War Office. The Surgeon-Commandant in charge of the hospital is Major Ernest Miles, surgeon to the Cancer Hospital, and the medical and surgical staff consists of Mr. A. G. Whitehorne-Cole, Mr. Philip M. Heath, Mr. Norman Duggan, Mr. Sidney B. Radley, Mr. Oswald T. Dinnick, Dr. Douglas E. Derry, Mr. W. M. S. Robinson, Mr. Robert H. Liscombe, Dr. Bernard Hudson, and Dr. E. D. Roberts. A trained staff of dressers, sisters, nurses, orderlies, &c., have been engaged. The hospital is completely equipped and ready to start for any locality on the continent which the military authorities may deem advisable. Donations and monthly guarantees will be gratefully received and acknowledged by the committee, 16, Grosvenor-street, London, W.

THE WAR AND NATIONAL INSURANCE.—It is satisfactory to learn that the National Health Insurance Commission has announced that any notice with regard to arrears due to unemployment during the past year which Reservists, Territorials, or insured persons who have joined the regular forces may receive, does not apply to them now that they have been called up, and that they, or in their absence their relatives, should write the words "called up" across such notice and return it to the society, which will issue the special instructions applying to them at a later date. Recruits recently enlisted for the war should send their current Health Insurance cards to their Approved Societies (if any, otherwise to the Post Office) after writing the word "Enlisted" across them.

A second edition of Lieutenant-Colonel P. C. Gabbett's *Manual for Women's Voluntary Aid Detachments* (Bristol: John Wright and Sons, Limited. 1914. Pp. 115. Price 1*s.* net), the first edition of which was warmly commended in THE LANCET of Sept. 28th, 1912, p. 911, has been issued. The Women's Voluntary Aid Detachments were instituted to fill the gap in the Territorial R.A.M.C. occasioned by the absence of an establishment for carrying out the duties in connexion with clearing hospitals, stationary hospitals, ambulance trains, &c., which stand between the front and the base hospitals. First-aid and bandaging the members of these detachments are supposed to have become acquainted with. This little book aims to put them *au courant* with the conditions of transport under which those duties would be performed.

WAR MAPS.—Messrs. Edward Stanford, Limited, of Long Acre, London, W.C., have issued some more useful war maps of large size, as follows: No. 4. The Franco-German Frontier and Western Germany. No. 5. The North Sea and the Baltic, comprising the British Islands to the Gulf of Finland, including Paris and Vienna. No. 6. The Seat of War in Belgium, as far as Ostend and Dunkirk on the west, and Cologne and Coblenz on the east. No. 7 is the latest to be issued, and is entitled "The Seat of War in France." All these maps are very distinct and well prepared, and the boundaries are indicated in pale transparent colours.

RATIONS OF WAR PRISONERS.—The War Office has notified that war prisoners' daily rations will be: Bread, 1½ lb., or biscuits, 1 lb.; fresh or frozen meat, 8 oz., or preserved meat half ration; fresh vegetables, 8 oz.; butter or margarine, 1 oz.; condensed milk, 1/20th of 1 lb. tin; tea, ½ oz., or coffee, 1 oz.; sugar, 2 oz.; salt, ½ oz.

FREE DENTISTRY FOR SOLDIERS.—Men in military uniform can receive free dental treatment by qualified dental surgeons at University College Hospital. Recruits who have been refused on account of defective teeth can also be treated free on producing the necessary evidence. The dental department is in the National Dental Hospital, Great Portland-street, London, and applicants should be in attendance at 9.30 A.M.

The War Office announces a few vacancies in the Special Reserve of Officers of the Royal Army Medical Corps.

THE NATIONAL RELIEF FUND.

SUBSCRIBE to the Prince of Wales's National Relief Fund.

To H.R.H. THE PRINCE OF WALES,
BUCKINGHAM PALACE, LONDON.

I beg to enclose £ s. d. as a donation to the National Relief Fund.

Name ______________________

Address ______________________

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The envelope containing this coupon need not be stamped.

Medical News.

UNIVERSITY OF LONDON.—At the Second Examination for Medical Degrees, Part I., held in July, the following candidates were successful:—

Organic and Applied Chemistry.—Cecil Hewitt Atkinson, Guy's Hospital; *George Arthur Emmanuel Barnes, University College; Keith Carlyle Beatty, London Hospital; Edward Jocelyn Bilcliffe, King's College and St. George's Hospital; Alfred Octavius Bolton, St. Bartholomew's Hospital; John Walker Brash, St. Mary's Hospital; Israel Braun, St. Bartholomew's Hospital; Cyril Huleatt Brew, University College; Margaret Hastings Bridge, London (Royal Free Hospital) School of Medicine for Women; Donald Cameron, St. Bartholomew's Hospital; Hayward Carpenter, King's College and Charing Cross Hospital; James Edwin Carpenter, London Hospital; Bodh Raj Chaudhri, King's College; Henry Joseph Constantine Churchill, St. Bartholomew's Hospital; Douglas Crawford Clark, King's College; *Cecil Stedman Cloake, B.Sc., London Hospital; Hari Das, University College; Owen Griffith Davies, St. Paul's School; Arthur Henry Douthwaite, University College; *Robert Walter Laurence Edgington, University of Birmingham; William Eidinow, London Hospital; Valentine Francis Farr, St. Paul's School; Walter Alan Flynn, Guy's Hospital; Beatrice Ford, Brighton Municipal Technical College; Johan Coenraad Gie, Guy's Hospital; Lionel Charles Goument, St. Bartholomew's Hospital; Dorothy Winifred Gowers, London (Royal Free Hospital) School of Medicine for Women; Algernon Sanders Green and Ronald Benjamin Green, University College; Walter Anley Hawes and Charles Graham Haynes, Guy's Hospital; Naunton Reginald Jenkins, University College, Cardiff; Theodora Johnston, London (Royal Free Hospital) School of Medicine for Women; Constance Amy Jones, University College; David Morris Jones, University College, Cardiff; Myrddin Emrys Jones, St. Thomas's Hospital; Nai Kamchorn, Guy's Hospital; Daulat Manghirmal Lala, King's College; Douglas Arthur Campbell Layman, William Alexander Low, and James Galway McCann, St. Thomas's Hospital; Lily Olive Grace McGregor, University College; Kathleen McCrie McKeown, London (Royal Free Hospital) School of Medicine for Women; Thomas Hawks McLeod, King's College; Bernard Gouldsmith Marshall, Guy's Hospital; Charles Leslie Mason, St. Mary's Hospital; George Gliddon Michell, University College; Annie Shortridge Mules, London (Royal Free Hospital) School of Medicine for Women; Henry Wilfrid Lee Nichols, London Hospital; David Richard Owen, University College, Aberystwyth; Arthur Edmund Beer Paul, University College; Sigrid Letitia Sharpe Pearson, Girton College; Montagu Cecil Polhill, University College; Jean Stephanie Pope, London (Royal Free Hospital) School of Medicine for Women; William Russell Ranson, Middlesex Hospital; Alexander Rathouse, Guy's Hospital; Francis Elinor Rendel, London (Royal Free Hospital) School of Medicine for Women; Gordon Hussey Roberts, King's College and Charing Cross Hospital; John Saunders Lewis Roberts, University College; Gwendolen Mary Rolfe, London (Royal Free Hospital) School of Medicine for Women; Henry Rowan, University College; William Harris Royal, University of Bristol; John Francis Ryan, St. Thomas's Hospital; Samuel Sacks, London Hospital; Edward

Jeffrey Samuel, King's College; George Samuel Sansom, B.Sc., University College; Cedric Kennedy Scales, King's College; Hans Schaal, University College; Charlotte Annie Shields, London (Royal Free Hospital) School of Medicine for Women; Raghunath Dadoba Shirvalkar, University College; Kildare Lawrence Singer, Middlesex Hospital; Muriel Starling, University College; Vernon Radcliffe Stewart, St. Mary's Hospital; Meredith Blake Robson Swann, Gonville and Caius College; Raymund Theron, London Hospital; Alfred James Usborne, St. Thomas's Hospital; Jeremias Auret Van Heerden, St. Bartholomew's Hospital; Kathleen Suzanne Vine, London (Royal Free Hospital) School of Medicine for Women; Elsie Maud Visick, Bedford College; Alfred C. Samuel Whiteway-Wilkinson, University College; Idwal Glynne Williams, University College, Bangor, and private study; and Ephraim Benjamin Woolf, London Hospital.

* With distinction.

N.B.—This list, published for the convenience of candidates, is issued subject to its approval by the Senate.

A GIFT of £20,000 to be devoted to cardiac research work has been promised to the London Hospital by Mrs. E. S. Paterson.

THE secretary in London of the University of Brussels, Dr. Arthur Haydon, states that he should be addressed at 11, Welbeck-street, Cavendish-square, London, W.

GUY'S HOSPITAL.—In accordance with the recommendation of the University of London, the Medical School of Guy's Hospital will open as usual on Oct. 1st, and no change will be made in the ordinary work of the school. The examinations for the entrance scholarships in arts and science will be conducted on Sept. 22nd, 23rd, and 24th as arranged.

LONDON SCHOOL OF TROPICAL MEDICINE.—The Duncan Medal awarded to the student who obtains the greatest aggregate of marks during the session has been gained by Captain A. C. Munro, I.M.S., in respect of the forty-sixth session, May—July, 1914. Captain Munro has also gained the Lalcaca medal in recognition of his having attained the greatest aggregate of marks during the medical year 1913–14.

ST. BARTHOLOMEW'S HOSPITAL MEDICAL SCHOOL.—The dean writes to say that the school will reopen on Oct. 1st, as already announced. The fact that the staff of St. Bartholomew's forms the 1st London (City of London) Base Hospital will in no way curtail their duties at St. Bartholomew's, nor the educational work of the school, and the new medical session will be carried on as usual with a full complement of teachers.

ST. GEORGE'S HOSPITAL MEDICAL SCHOOL.—The winter session will commence as usual on Oct. 1st, and the examination for the entrance scholarships in anatomy and physiology will be held on Sept. 22nd, 23rd, 24th, and 25th, but in view of the absence on duty with the navy and army of practically all the recipients of prizes in this school, it has been decided to postpone the prize distribution and the annual inaugural address, which was to have been delivered by the Master of Christ's College, Cambridge, on Oct. 1st. It has also been decided to postpone the annual dinner for past and present students, which was to have been held on the same evening, to some later date.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Parliament and the War.

BOTH Houses of Parliament sat from August 25th to August 31st to deal with matters arising out of the war. They have adjourned again until Sept. 9th.

HOUSE OF COMMONS.

WEDNESDAY, AUGUST 26TH.

Vaccination in the Territorial Force.

REPLYING to Mr. CHANCELLOR, Mr. TENNANT (Under Secretary of State for War) said: A circular has been issued recently informing general officers commanding that members of the Territorial Force who have conscientious objections to vaccination should not be vaccinated. It is considered that the danger of an outbreak of small-pox among a body of insufficiently vaccinated troops is a very real one, and every effort is consequently being made to persuade men to undergo vaccination, and those who object are being informed that unless they submit to vaccination they are not likely to be of service in the field.

Dental Treatment for Recruits.

Mr. NORTON-GRIFFITHS asked the Under Secretary of State for War whether he was aware that a large number of men presenting themselves as recruits had failed to pass the medical examination on account of bad teeth, although fit in every other respect, and whether he could take some steps to arrange for these men to be looked at by a properly qualified dental surgeon, so that in cases where the defects were slight and could be easily remedied good men might not be precluded from joining the colours.—Mr. TENNANT replied: Instructions have already been issued to all medical examiners of recruits that no man who is organically sound is to be refused on account of bad teeth, unless his appearance leads the medical officer to believe that the loss of teeth is a distinct cause of the man's malnutrition. Many highly qualified dental surgeons and well-known dental institutes throughout the country are in communication with our recruiting officers and are patriotically giving their services for the free treatment of intending recruits whose acceptance for the army can be assured provided their dental defects are first remedied.

THURSDAY, AUGUST 27TH.

Asylum Officers with the Colours.

Mr. JOWETT asked the Secretary of State for the Home Department whether asylums officers who had been called to the colours since the present war would have their years of service as asylums officers before they were called up aggregated and reckoned with their future period of service in the same capacity if they returned to their duties after the war was over.—Mr. MCKENNA replied: The answer is in the affirmative.

Medical Officers in Territorial Units.

Mr. SANDERS asked the Under Secretary of State for War whether his attention had been called to the case of country doctors and veterinary surgeons who were called out with Territorial units and whose pay was 15*s.* 6*d.* a day, while they lost their private practice, whereas a civilian practitioner newly joined for war service got 24*s.* a day and £60 bounty at the end of the war; and whether he would take steps to remedy this inequality of treatment.—Mr. H. BAKER (on behalf of Mr. TENNANT) said in reply: All such officers commissioned in peace draw under the terms of their contract the pay and allowance of the Regular Army, varying according to the ranks which they hold. The rate quoted, 15*s.* 6*d.* a day, is that of a captain of the Royal Army Medical Corps, but field allowance of 3*s.* 6*d.* a day is also allowable, so that the total drawn is 19*s.*, and not 15*s.* 6*d.* It is necessary to give higher rates to those commissioned on emergency, but there is no intention of making this universal.

Mr. BRIDGEMAN: Is it not the case that the former class are getting less than the civilian practitioners newly joined?—Mr. BAKER: They are serving under a running contract under which they have engaged. It is always necessary when you take on specialists to deal with them on special terms in time of war.

Sanatorium Benefit.

Major HOPE asked the honourable Member for St. George's-in-the-East, as representing the Insurance Commissioners, whether an employed contributor who was recommended for sanatorium benefit and made his own arrangements to go to the King Edward VII. Sanatorium at Midhurst, was entitled to recover any part of the fees payable at that sanatorium.—Mr. WEDGWOOD BENN wrote in reply: Insurance Committees are under no obligation to defray the cost of treatment for tuberculosis obtained otherwise than under the general arrangements made by them. Further, where, as is usually the case, the whole of the committee's income available for the purpose is already ear-marked towards the cost of the accommodation reserved by them under those arrangements, the committee will not be in a position to contribute to the cost of other accommodation privately obtained. If, however, the honourable and gallant Member has any particular case in mind I will make inquiry on receipt of the particulars.

FRIDAY, AUGUST 28TH.

The Milk-Supply in Scotland.

Mr. PRATT asked the Secretary for Scotland what special steps were being taken to secure a sufficient supply of pure milk for infants and young children, especially in the urban and more populous districts of Scotland, during the continuance of the war.—Mr. MCKINNON WOOD answered: No complaints as to the shortage of milk-supply have reached me, but I will communicate my honourable friend's question to the Local Government Board for Scotland.

MONDAY, AUGUST 31ST.

Refugees and Disease.

Answering Sir E. CORNWALL, Mr. HERBERT SAMUEL said that although there was no reason to fear immediate danger of an epidemic occurring in this country in consequence of the arrival of refugees from the continent the Local Government Board was fully alive to the need of taking precautions. As soon as it was found that a considerable number of refugees were arriving the Board sent a medical inspector to make a special examination of those arriving, and two days ago it sent a reminder to all local authorities of their duties in regard to the prevention of small-pox. The Local Government Board was exercising every vigilance to safeguard the health of the people.

BOOKS, ETC., RECEIVED.

Allen, George, and Unwin, Limited, London.
The Foundations of Strategy. By Captain H. M. Johnstone, R.E., retired. Price 5s. net.

Arnold, Edward, London.
The Brain in Health and Disease. By Joseph Shaw Bolton, M.D., D.Sc., F.R.C.P. Lond. Price 18s. net.

Butterworth and Co. (India), Limited, Hastings-street, Calcutta.
Handbook of Obstetrics for Students and Junior Practitioners in India. By Kedarnath Das, M.D., Teacher of Midwifery, Campbell Medical School. Price 14s. net.

Churchill, J. and A., London.
Essays and Addresses. By the late James Campbell Brown, D.Sc., LL.D. With Portrait and 22 Illustrations. Price 5s.

Griffin, Charles, and Co., London.
A Surgical Handbook for the Use of Students, Practitioners, House Surgeons, and Dressers. By Francis M. Caird, M.B., F.R.C.S. Edin., and Charles W. Cathcart, M.B., F.R.C.S. Edin. & Eng. Sixteenth edition, revised and enlarged. Price 8s. 6d.
Dairy Chemistry: A Practical Handbook for Dairy Chemists and Others having Control of Dairies. By H. D. Richmond, F.I.C. Second edition, revised. Price 15s. net.

Kelly and Walsh, Hong-Kong. Marshall Brothers, London.
Medical Missionary Language: Study As It Is and As It Ought To Be. By C. G. S. Baronsfeather, M.A., M.B., LL.B. Price 5s. net.

Kimpton, Henry, London.
Diseases of the Nose, Throat, and Ear, Medical and Surgical. By William Lincoln Ballenger, M.D., Professor of Otology, Rhinology, and Laryngology, College of Physicians and Surgeons, Department of Medicine, University of Illinois, Chicago. Fourth edition. Price 28s. net.

Lewis, H. K., London.
Public Health Laboratory Work. By Henry R. Kenwood, M.B., F.R.S. Edin., D.P.H., F.C.S. Sixth edition. Price 10s. net.
Mechano-Therapeutics in General Practice. By G. de Swietochowski, M.D., M.R.C.S. Price 4s. net.
The Vaccination Question in the Light of Modern Experience by an Appeal for Reconsideration. By C. Killick Millard, M.D., D.Sc., Medical Officer of Health for Leicester. Price 6s. net.

Milford, Humphrey, London, Toronto, Melbourne, and Bombay.
Studies Concerning Glycosuria and Diabetes. By Frederick M. Allen, A.B., M.D. Price 38s. net.
The Care and Feeding of Children. By John Lovett Morse, M.D. Price 2s. 6d. net.

Murray, John, London.
Nature and Nurture in Mental Development. By F. W. Mott, M.D., F.R.S., F.R.C.P., LL.D. Edin. Price 3s. 6d. net.

St. Andrews Ambulance Association, 176, West Regent-street, Glasgow.
First Aid in Accidents and Sudden Illnesses. By Duncan Macartney, M.A., M.D. Price 1s.; post free 1s. 2d.

Sanitary Publishing Company, Chancery-lane, W.C.
Meat and Food Inspectors' Examinations: Model Answers and Questions. Compiled by G. T. Billing and A. H. Walker. Second edition. Price 5s. net.

Saunders (W. B.) Company, London.
Bedside Hæmatology. By Gordon H. Ward, M.D. Price 15s. net.
Serology of Nervous and Mental Diseases. By D. M. Kaplan, M.D., Neurological Institute, New York City. Price 15s. net.
Clinical Medicine. By Wm. Hanna Thomson, M.D., LL.D., formerly Professor of the Practice of Medicine, New York University Medical College. Price 21s. net.
Anoci-association. By Geo. W. Crile, M.D., Professor of Surgery, and Wm. E. Lower, M.D., Assistant Professor of Genito-Urinary Surgery, Western Reserve University. Price 13s. net.
General Bacteriology. By Edwin O. Jordan, Ph.D., Professor of Bacteriology in the University of Chicago. New (fourth) edition. Price 13s. net.
The Practice of Surgery. By Jas. G. Mumford, M.D., Lecturer on Surgery, Harvard Medical School. New (second) edition, with 682 Illustrations. Price 30s. net.

Shaw and Sons, Fetter-lane, London.
Handbook of Fevers. By J. Campbell McClure, M.D. Glasg. Price not stated.

Smith, Elder, and Co., London.
Saint Bartholomew's Hospital Reports. Vol. I., Part I. Edited by F. W. Andrews and others. Price not stated.

Stanford, Edward, Limited, 12–14, Long Acre, W.C.
British Rainfall, 1913. Compiled under the direction of Hugh Robert Mill by R. C. Mossman and Carle Salter. Fifty-third annual volume. Price 10s.

Thacker, Spink, and Co., Calcutta and Simla.
Tropical Hygiene for Anglo-Indians. By the Hon. Surgeon-General Sir Pardey Lukis, K.C.S.I., and Major R. J. Blackham, C.I.E., R.A.M.C. Second edition, thoroughly revised and largely rewritten. Price not stated.

The Scientific Press, Limited, London.
Skin Diseases. By David Walsh, M.D. Edin. Price 1s. net.
The Tuberculosis Handbook. By A. H. G. Burton, M.D., D.P.H., &c., Medical Officer of Health for the Metropolitan Borough of Deptford. Price 1s. 6d. net.

Watts and Co., Johnson's Court, E.C.
The Family Chain: Marriage and Relationships of Native Australian Tribes. By J. Hopkins, F.R.C.S. Price 1s.

Wright, John, and Sons, Bristol; Simpkin, Marshall, London.
Manual for Women's Voluntary Aid Detachments. By P. C. Gabbett, M.R.C.S., Lieut.-Col. I.M.S., retired. Second edition, revised and enlarged. Price 1s. net.

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to The Lancet *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

Barnes, Helen P., M.B., B.S. Lond., has been appointed House Surgeon and Senior Resident Officer to the Bristol Royal Hospital for Sick Children and Women.

Bond, C. Shaw, M.B., B.C., M.R.C.S., L.R.C.P. Lond., has been appointed Medical Officer and Public Vaccinator for the Bramshott (Hampshire) District.

Burrows, Arthur, M.D. Lond., B.S., M.R.C.S., L.R.C.P. Lond., has been appointed Radiologist to the Manchester Infirmary.

Crawford, Robert, M.B., Ch.B. Glasg., has been appointed a Medical Referee under the Workmen's Compensation Act, 1906, for the Sheriffdom of Fife and Kinross, to be attached more particularly to the Kirkcaldy District.

Gowland, William Percy, F.R.C.S. Eng., has been appointed to the Chair of Anatomy at the University of Otago, Dunedin, New Zealand.

Little, H. N., B.C. Cantab., L.R.C.P. Lond., M.R.C.S., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Dunstable District of the county of Bedford.

Matheson, J., M.B., C.M. Aberd., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Greenwich District of the county of London.

Salisbury, Walter, M.B., B.S. Lond., has been appointed Assistant Resident Medical Officer at the Queen Charlotte's Lying-in Hospital, Marylebone-road, N.W.

Wales, H., M.B., B.C. Cantab., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Gargrave District of the county of York.

Williamson, Cecilia F., F.R.C.S. Irel., has been appointed Assistant Bacteriologist to the East Suffolk Hospital, Ipswich.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

Banbury, Horton Infirmary.—House Surgeon. Salary £120 per annum, with board and residence.

Birmingham Union.—Dudley-road Infirmary: First Assistant Medical Officer, Second Assistant Medical Officer, and Fourth Assistant Medical Officer. Salaries at rate of £225, £180, and £160 per annum respectively. Erdington Infirmary and Cottage Homes: Assistant Medical Officer. Salary at rate of £180 per annum. Selly Oak Infirmary: Assistant Medical Officer. Salary at rate of £160 per annum. Apartments, rations, laundry, and attendance in each case.

Bootle County Borough.—Medical Inspector of Scholars and Assistant Medical Officer of Health. Salary £300 per annum.

Bristol Royal Hospital for Sick Children and Women.—Female House Physician Salary £100 per annum, with board, rooms, attendance, and laundry.

Bristol Royal Infirmary.—Dental House Surgeon. Salary at rate of £100 per annum, with board, apartments, and laundry.

Camberwell Infirmary.—Assistant Medical Officer. Salary £190 per annum, with apartments, board and washing.

Cancer Hospital, Fulham-road, S.W.—Two House Surgeons for six months. Salary £100 per annum each.

Carlisle, Cumberland Infirmary.—Resident Medical Officer. Salary at rate of £80 for first six months and £100 for second six months, with board, lodging, and washing.

Cheshire Education Committee.—Fourth Assistant to the Chief School Medical Officer. Salary £350 per annum.

Colchester, Essex County Hospital.—House Surgeon. Salary £100 per annum, with board, residence, and washing.

Derby, Derbyshire Hospital for Sick Children.—Female Resident Medical Officer. Salary £80 per annum.

Devonport, Royal Albert Hospital.—House Surgeon, unmarried. Salary £150 per annum, with board and laundry.

Dover, Royal Victoria Hospital.—House Surgeon, unmarried. Salary £100 per annum, with board, lodging, and washing.

Dumfries, Crichton Royal.—Locum Tenens for six months. Salary at rate of 5 guineas a week, with board, lodging, laundry, and attendance.

Dumfries and Galloway Royal Infirmary.—Assistant House Surgeon. Salary £65 per annum, with board and washing.

Durham County Hospital.—House Surgeon. Salary £150 per annum, with board and lodging.

Eastbourne County Borough—Female Assistant Medical Officer of Health and Assistant School Medical Officer. Salary £350 per annum.

Edinburgh, Royal Asylum, Morningside.—Assistant Physician. Salary £175 per annum.

Exeter, Royal Devon and Exeter Hospital.—Assistant House Surgeon for six months. Salary at rate of £200 per annum, with board, apartments, and washing.

GREAT YARMOUTH HOSPITAL.—House Surgeon, unmarried. Salary £140 per annum, with board, lodging, and washing.

GREENWICH UNION INFIRMARY AND WORKHOUSE.—First Assistant Medical Officer, unmarried. Salary £175 per annum, with apartments, rations, and washing.

GUILDFORD, ROYAL SURREY COUNTY HOSPITAL.—House Surgeon. Salary £100 per annum, with board, residence, and laundry.

HALIFAX ROYAL INFIRMARY.—Second and Third House Surgeons, both unmarried. Salaries £120 and £100 per annum respectively, with residence, board, and washing.

HAMPSTEAD GENERAL AND NORTH-WEST LONDON HOSPITAL.—Two Female Resident Casualty Officers for six months. Salary at rate of £50 per annum, with board, residence, and laundry.

HARRIS, PARISH OF, Outer Hebrides.—Two Medical Practitioners, one for North and one for South Harris. Salary £300 per annum &c., tax free.

HEREFORD, HEREFORDSHIRE GENERAL HOSPITAL.—House Surgeon, unmarried. Salary £150 per annum, with board, residence, and washing.

HULL ROYAL INFIRMARY.—Assistant House Surgeon. Salary at rate of £100 per annum, with board and lodging.

HULL, VICTORIA CHILDREN'S HOSPITAL, Park-street.—Female Resident House Surgeon. Salary £50 per annum, with board and laundry.

KENSINGTON BOARD OF GUARDIANS WORKHOUSE AND INFIRMARY.—Second Assistant Resident Medical Officer. Salary £160 per annum, with apartments, board, and washing.

KENT EDUCATION COMMITTEE.—Temporary School Medical Inspector. Salary at rate of £300 per annum.

KING EDWARD MEMORIAL HOSPITAL, Ealing, W.—Resident Medical Officer for six months. Salary at rate of £80 per annum, with board, residence, and laundry.

LAMBETH PARISH INFIRMARY WORKHOUSES, Brook-street, Kennington-road, S.E.—Sixth Assistant Medical Officer. Salary at rate of £150 per annum, with residential allowances.

LEICESTER ROYAL INFIRMARY.—Assistant House Surgeon for six months. Salary at rate of £100 per annum, with board, apartments, and washing.

LIVERPOOL ROYAL SOUTHERN HOSPITAL.—Two House Physicians and Three House Surgeons for six months. Salary at rate of £60 per annum, with board and residence.

LIVERPOOL UNIVERSITY FACULTY OF MEDICINE.—Johnston Chair of Bio-Chemistry. Salary £600 per annum.

MAIDSTONE, WEST KENT GENERAL HOSPITAL.—Assistant House Surgeon, unmarried. Salary £100 per annum, with board, lodging, &c.

MANCHESTER, HULME DISPENSARY, Dale-street, Stretford-road.—House Surgeon. Salary £180 per annum, with apartments, attendance, coal, and gas.

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN, Park-place, Cheetham Hill-road.—House Surgeon. Salary £120 per annum, with apartments and board.

MANCHESTER ROYAL EYE HOSPITAL.—Junior House Surgeon. Salary £80 per annum, with residence, board, and washing.

MERSTHAM, SURREY COUNTY ASYLUM, Netherne.—Assistant Medical Officer, unmarried. Salary £150 per annum, with board, lodging, and laundry.

MIDDLESBROUGH, NORTH RIDING INFIRMARY.—Senior House Surgeon for six months. Salary at rate of £100 per annum, with board, apartments, and laundry.

MILE END OLD TOWN INFIRMARY.—Junior Assistant Medical Officer. Salary £140 per annum, with board, lodging, and washing.

NEW HOSPITAL FOR WOMEN, Euston-road, N.W.—Obstetric Assistant to end of year. Board, lodging, and laundry provided. Also Clinical Assistants to Out-patient Department. Also Anæsthetist.

NORTH RIDING OF YORKSHIRE COUNTY COUNCIL EDUCATION COMMITTEE.—Assistant School Medical Officer. Salary £250 per annum.

NOTTINGHAM CITY ASYLUM.—Junior Assistant Medical Officer, unmarried. Salary £200 per annum, with board, apartments, and laundry.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon, unmarried. Salary £180 per annum, with apartments (not board), attendance, light, and fuel.

NOTTINGHAM GENERAL HOSPITAL.—Senior House Physician. Salary £120 per annum, with board, residence, and laundry.

PETERBOROUGH INFIRMARY.—House Surgeon, unmarried. Salary at rate of £150 per annum, with residence, board, and laundry.

POPLAR HOSPITAL FOR ACCIDENTS, Poplar, E.—Senior Resident House Surgeon. Salary at rate of £150 per annum, with board and residence. Also Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board and residence.

PORTSMOUTH CORPORATION MENTAL HOSPITAL.—Assistant Medical Officer, unmarried. Salary £250 per annum, with board, apartments, attendance, and washing.

PRESTON ROYAL INFIRMARY.—Resident Medical and Surgical Officer. Also Assistant Resident Medical and Surgical Officer. Salaries £150 and £120 per annum respectively, with board, residence, and laundry.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone-road, N.W.—District Resident Medical Officer for four months. Salary at rate of £60 per annum, with board, residence, and washing. Also Assistant Resident Medical Officer for four months. Salary at rate of £50 per annum, with board, residence, and washing.

READING, ROYAL BERKSHIRE HOSPITAL.—Second House Surgeon. Salary at rate of £80 per annum, with lodging, board, and laundry.

ROTHERHAM HOSPITAL.—Assistant House Surgeon. Salary £110 per annum, with board, lodging, and washing.

ROYAL LONDON OPHTHALMIC HOSPITAL, City-road, E.C.—Senior House Surgeon. Salary at rate of £100 per annum, with board and residence.

ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN, S.E.—Junior Resident Medical Officer. Salary at rate of £70 per annum, with board and washing.

ST. MARY, ISLINGTON, INFIRMARY, Highgate-hill, N.—Junior Assistant Medical Officer for six months. Salary at rate of £140 per annum, with board, apartments, and attendance.

ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN, Plaistow, E.—Assistant Resident Medical Officer. Salary at rate of £100 per annum, with board, residence, and laundry.

ST. PANCRAS.—Senior Assistant Medical Superintendent of South Infirmary, Cook's-terrace, Pancras-road, and Senior Assistant Medical Officer of the house adjacent. Salary at rate of £175 per annum, with board and apartments.

SALFORD ROYAL HOSPITAL.—Resident Surgical Officer. Salary at rate of £120 per annum. Also House Physician. Salary at rate of £110 per annum. Also House Surgeon, Junior House Surgeon, and Casualty House Surgeon. Salary each at rate of £100 per annum. All for six months, with board and residence.

SALFORD UNION INFIRMARY.—Resident Assistant Medical Officer, unmarried. Salary £150 per annum, with apartments, attendance, and rations.

SALISBURY (GENERAL) INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with apartments, board, and lodging. Also Assistant House Surgeon. Salary £75 per annum.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Senior and Junior House Surgeons. Salaries £100 and £80 per annum respectively, with board, residence, &c.

SHEFFIELD, EAST-END BRANCH OF THE CHILDREN'S HOSPITAL.—House Surgeon. Salary £120 per annum, with board and residence.

SHEFFIELD EDUCATION COMMITTEE.—Assistant School Medical Officer. Salary £300 per annum.

SHEFFIELD UNIVERSITY, DEPARTMENT OF PATHOLOGY.—Junior Demonstrator of Pathology. Salary £200 per annum.

SHERBURN HOSPITAL, near Durham.—Medical Officer. Salary £300 per annum and house.

SHREWSBURY, ROYAL SALOP INFIRMARY.—House Physician, unmarried. Salary at rate of £110 per annum, with board and apartments.

TRURO, ROYAL CORNWALL INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with rooms, board, and washing.

WARRINGTON, LANCASHIRE COUNTY ASYLUM, Winwick.—Assistant Medical Officer, unmarried. Salary £250 per annum, with board, apartments, attendance, and washing.

WELSH HOSPITAL FOR THE EXPEDITIONARY FORCE.—Four Medical Officers and Four Medical Students as Dressers.

WEST BROMWICH AND DISTRICT HOSPITAL.—Assistant Resident House Surgeon and Anæsthetist, unmarried. Salary £100 per annum, with board, residence, and washing.

WEST HAM AND EASTERN GENERAL HOSPITAL, Stratford, E.—Resident Medical Officer. Salary £160 per annum. Also Senior House Physician and Senior House Surgeon. Salary £120 per annum. Also Junior House Physician and Junior House Surgeon. Salary £100 per annum. Board, residence, and washing provided in each case.

WEST LONDON HOSPITAL, Hammersmith-road, W.—Three House Physicians and Three House Surgeons for six months. Board, lodging, and laundry provided.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House Surgeon and Resident Medical Officer, both for six months. Salary at rate of £125 per annum, with board, rooms, and laundry.

WOMEN'S HOSPITAL FOR CHILDREN, 688, Harrow-road, W.—Dental Surgeon. Salary 25 guineas per annum.

WOOLWICH TUBERCULOSIS DISPENSARY, 185, Eglinton-road, Woolwich, S.E.—Temporary Assistant Medical Officer. Salary £25 per month.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies for Certifying Surgeons under the Factory and Workshop Acts at Ballyshannon, in the county of Donegal; at Belleek, in the county of Fermanagh; at Sligo, in the county of Sligo; and at Ballyhaise, in the county of Cavan.

Births, Marriages, and Deaths.

BIRTHS.

BEATTY.—On August 27th, at Craigvar, Pitlochry, the wife of Samuel Beatty, M.B., C.M. Edin., of a son.

GRAHAM.—On August 27th, at Upper Wimpole-street, W., the wife of Cecil Graham, F.R.C.S., of a daughter.

RAINEY.—On August 29th, at Wakefield House, Compton-street, Eastbourne, the wife of E. Holmes Rainey, F.R.C.S., of a daughter.

WATERFIELD.—On August 27th, at Staithe House, Beccles, the wife of Noel E. Waterfield, F.R.C.S., Sudan Medical Service, of a son.

WILSON.—On August 28th, at Holland Park-avenue, W., the wife of J. Horne Wilson, M.D., of a son.

MARRIAGES.

HACKNEY—BYWATERS.—On August 26th, at the Marylebone Registry Office, Dr. Henry Charles Coutts Hackney, only son of Henry C. Hackney, Esq., of "Ridgwood," Beckenham, to Dorothy Kate, younger daughter of Arthur J. Bywaters, of Maida Vale, W.

HARRISON—HULKE.—On August 26th, at Harwich, very quietly owing to the war, Staff-Surgeon William Rhodes Harrison, Royal Navy, to Irene Medora, only daughter of Mr. and Mrs. Frederick B. Hulke, of Admiralty House, Deal.

DEATHS.

HAMILTON.—On August 28th, at his residence, Magherabuoy, Portrush, co. Antrim, Robert Hamilton, F.R.C.S. Eng., L.S.A. (retired), late of Liverpool, aged 87 years.

HICKS.—On August 30th, at Amburst-road, N.E., George Borlase Hicks, L.R.C.P. Edin., M.R.C.S. Eng., L.M. (retired), in his 87th year.

HILL.—On August 24th, at his residence, St. Domingo, Hoylake, Cheshire, Charles Alexander Hill, M.B., B.C. Camb., D.P.H., of Rodney-street, Liverpool.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

HEALTH OF OFFICERS AND MEN.

INFORMATION that can be made known consistently with the public interest regarding the progress of operations, movements of troops, and matters of general interest is communicated in due course to the Press and to the News Agencies through the Official Press Bureau, at No. 40, Charing Cross. It will not be made known in any other manner. When any information is received as to the health or safety of an officer it is at once telegraphed from the War Office to his next-of-kin. It is also communicated to the press and the news agencies for publication. In the case of Territorial Force officers serving at home the notification will be made from the Territorial Force Record Office. Information received as to the health or safety of any soldier is communicated to the next-of-kin by the Military Record Office in which the man's history is kept, and is published in the press. All inquiries as to casualties, &c., should be addressed to the record offices concerned, and not to the War Office.

BRITISH HOSPITAL IN ANTWERP.

The Press Bureau has just announced that the British community in Antwerp has organised and equipped a hospital for the care of wounded soldiers of the allied armies. The hospital has been established in the new buildings of the Church of England Missions to Seamen and is under the control of, and officially recognised by, the Belgian Red Cross Society.

HEALTH OF CEYLON.

ACCORDING to the Ceylon Blue-book for 1913, just presented to Parliament, the estimated population on Dec. 31st last was 4,262,100, there being a proportion of 113 males to 100 females. The birth-rate for 1913 was 39 per 1000, which is slightly above the average, and the death-rate was 28 per 1000. The infantile mortality was 189 per 1000 births, which compares favourably with the 215 per 1000 in 1912. The chief causes of death were fever, diarrhœa, dysentery, pneumonia, and phthisis. Deaths from enteric fever showed a welcome decline—viz., 394, as against 461 in 1912 and 651 in 1911. The deaths from dysentery were 4190, as against 5237 in 1912; and from phthisis 4167, as against 4306 in 1912. Deaths from ankylostomiasis show an increase—2196, as against 1843 in 1912. This disease is especially prevalent amongst estate coolies in the low country, and is receiving the attention of the inspecting medical officers, who have visited a number of estates and have prescribed both prophylactic and curative treatment. Parangi has been treated successfully with salvarsan. In addition to the three hospitals and the clinic for tropical diseases in which the treatment was adopted previously, it has now been introduced in ten other hospitals and will shortly be extended to six others. There were 69 deaths from cholera during the year, due chiefly to an outbreak which occurred in Colombo in the last quarter and which resulted in 54 deaths. Only one death was registered from small-pox, as against 15 in 1912 and 89 in 1911. There are now 78 Government hospitals in the colony, besides 423 outdoor Government dispensaries and 321 estate dispensaries supported by the planters. The new anatomical block for the Medical College was opened by the Governor on Nov. 3rd, 1913. During the session 1913–14 336 students attended the college, of whom 134 were medical and 202 apothecary. The report as to the general condition of the colony is that "it is one of continued prosperity. The staple agricultural products—coconuts, paddy, tea, rubber, cocoa, and cinnamon—are flourishing. The standard of comfort has risen. The villager now requires a better house and better furniture. He is better clothed and fed. If the spread of civilisation has increased his facilities for making money, it has likewise increased his powers of spending it, and has, perhaps, occasionally diverted it into undesirable channels."

CUSTOM AND COURTESY.

To the Editor of THE LANCET.

SIR,—An insured patient of mine, who has been some time under treatment as she is waiting her turn for admission into St. Mary's Hospital for a major operation, came and informed me a few days ago that she had been visited and examined by a doctor sent to her by her society—the "Prudential"—on a few hours' notice to her and *none whatever to me.*

On remonstrating with the doctor concerned he made the frankest apology.

A simultaneous letter of protest to the "Prudential" has called forth this reply:—"We much regret that our action in regard to your patient should have been regarded by you as a breach of courtesy, but would mention that it was in accordance with *our customary practice* that the panel doctor was not advised of our course of procedure"!

I have made formal complaint of this "customary practice" to the London Insurance Committee, but I hope that, if they have not been doing so hitherto, other panel practitioners will equally resent this "customary" impertinence of the "Prudential" and get it put a stop to.

In this case the society stopped all sick pay before sending the doctor, and the poor girl, who is dependent upon it, had not had a penny for a fortnight, just when she most needed good feeding to fortify her for the operation.

I am, Sir, yours faithfully,
HENRY BAZETT.
Paddington-green, W.

MADEIRA DRAINAGE AND WATER-SUPPLY.

A CONSULAR report states that the total population of the island of Madeira at the end of December, 1913, was computed to be 180,667. There were 6858 births during the year and 3631 deaths. The public health was good. Hitherto Funchal has not possessed any drainage system worthy of the name, nor an organised system for distribution of water to the population. Water was only obtainable from landowners who happened to have springs on their properties, and if these springs existed on low-lying agricultural lands they were always subject to filtrations of all kinds, and if on the hills the water was brought to town in open watercourses which were liable to every kind of abuse. It may almost be averred that under such conditions it is only the magnificent climate of Madeira that has allowed the town of Funchal to be in any way habitable. There have been many epidemics in the past, and these may without doubt be attributed to the absolute lack of any organised sanitation. Now, however, a proper system both of drainage and water-supply is being carried out, the contract being entrusted to a British firm. A large reservoir is being constructed from which a network of pipes will be laid down for supplying drinking-water and also water for flushing and other domestic purposes, and there is every reason to believe that Funchal within two years will be as well drained as any town in the world.

KILOMETRES AND MILES.

To the Editor of THE LANCET.

SIR,—Some of your readers will probably require just now rapidly to convert kilometres into miles. A rough way is to multiply the kilometres by 0·6, the full figures are really 0·62138 (example, 100 kilometres multiplied by 0·6 equals 60 miles). A nearer approach to accuracy may be obtained by multiplying the number of kilometres by 10 and dividing by 16 (example, 100 kilometres multiplied by 10 equals 1000; divided by 16, equals 62 miles 880 yards, the real distance being 62 miles 243 yards).—I am, Sir, yours faithfully,

London, August 26th, 1914. F.

BIVOUAC COCOA AND MILK.

WE have received from Messrs. Thew, Hooker, and Gilbey, manufacturers of milk products, of 6, Holborn Viaduct, London, E.C., samples of their "bivouac" cocoa and milk suitable for use as rations in the field. A neat tin case contains six rations or packets of the powdered preparation each sufficient to make a breakfast cup full of a nourishing and stimulating fluid. It contains in good proportion all classes of food as will be seen from the following analysis we have made: Carbohydrates (cane and milk sugar), 52·00 per cent.; proteins, 13·23 per cent.; fat, 11·30 per cent.; and mineral matter, 3·50 per cent. This preparation affords an easily portable food and is an agreeable and convenient form of nourishment. If there is no water at hand it can be eaten as chocolate.

Mr. W. L. Thompson.—We do not understand our correspondent's request.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

The following magazines, journals, &c., have been received:—
Journal of Laryngology, Rhinology, and Otology, Journal of Pathology and Bacteriology, Therapist, Boston Medical and Surgical Journal, Journal of Tropical Medicine and Hygiene, American Journal of Surgery, Montreal Pharmaceutical Journal, Inter-state Medical Journal, Clinical Medicine, Maryland Medical Journal, St. Paul Medical Journal, Child, South African Medical Record, Canadian Practitioner and Review, British Journal of Dermatology, Paris Médical, Duodecim, Revista de la Sociedad Médica, Annaes Paulistas de Medicina e Cirurgia.

Medical Diary for the ensuing Week.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

Monday.—10 a.m., Dr. Simson: Diseases of Women. 2 p.m., Medical and Surgical Clinics. X Rays. Mr. T. Gray: Operations. Dr. Pritchard: Bacterial Therapy Department. Mr. B. Harman and Mr. Gibb: Diseases of the Eye.

Tuesday.—10 a.m., Dr. Simson: Gynæcological Operations. 2 p.m., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

Wednesday.—10 a.m., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 2 p.m., Medical and Surgical Clinics. X Rays. Mr. Souttar: Operations. Dr. Simson: Diseases of Women. Mr. Gibb: Diseases of the Eye.

Thursday.—9 a.m., Dr. Bernstein: Bacterial Therapy Department. 2 p.m., Medical and Surgical Clinics. X Rays. Mr. T. Gray: Operations. Mr. B. Harman: Diseases of the Eye.

Friday.—10 a.m., Dr. Simson: Gynæcological Operations. 2 p.m., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

Saturday.—10 a.m., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Eye Operations. 2 p.m., Medical and Surgical Clinics. X Rays. Mr. Souttar: Operations.

LONDON HOSPITAL MEDICAL COLLEGE (University of London), London Hospital, Mile End-road, E.

Demonstrations in Clinical Medicine:—

Monday.—2.15 p.m., Dr. Wall: Pulmonary Tuberculosis. (Clinical Theatre.)

Tuesday.—2.15 p.m., Dr. Grünbaum: Diseases of the Blood. (Clinical Theatre.)

Wednesday.—2.15 p.m., Dr. Miller: Abdominal Diseases. (Out-patient Department.)

Thursday.—2.15 p.m., Dr. Thompson: Diseases of the Nervous System. (Clinical Theatre.)

Friday.—2.15 p.m., Dr. L. Smith: Common Cardiac Conditions. (Clinical Theatre.)

Saturday.—10.15 a.m., Dr. Hutchison: Demonstrations on Selected Cases. (Wards or Clinical Theatre.)

Demonstrations on Selected Surgical Cases and on Cases of Interest in the Wards of the Hospital:—

Monday.—2 p.m., Mr. Milne.
Tuesday.—2 p.m., Mr. Lett.
Wednesday.—2 p.m., Mr. Howard.
Thursday.—2 p.m., Mr. Warren.
Friday.—2 p.m., Mr. Walton.

THE THROAT HOSPITAL, Golden-square, W.

Monday.—5.15 p.m., Special Demonstration of Selected Cases.
Thursday.—5.15 p.m., Clinical Lecture.

ROTUNDA HOSPITAL POST-GRADUATE COURSES, Dublin.

Monday.—10 a.m., Obstetrical Lecture: Missed Labour (continued). 11 a.m., Examination of Patients and Minor Operations.

Tuesday.—10 a.m., Major Operations.

Wednesday.—10 a.m., Obstetrical Lecture: Abortion. 11 a.m., Examination of Patients and Minor Operations.

Thursday.—10 a.m., Major Operations.

Friday.—10 a.m., Gynæcological Lecture: Uterine Infection 11 a.m., Examination of Patients and Minor Operations.

For further particulars of the above Lectures, &c., see Advertisement Pages.

EDITORIAL NOTICES.

It is most important that communications relating to the Editorial business of The Lancet should be addressed *exclusively* "To the Editor," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of The Lancet *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

The Index and Title-page to Vol. I. of 1914, which was completed with the issue of June 27th, were given in The Lancet of July 4th.

VOLUMES AND CASES.

Volumes for the first half of the year 1914 are now ready. Bound in cloth, gilt lettered, price 16*s.* carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

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Will Subscribers please note that only those subscriptions which are sent direct to the Proprietors of The Lancet at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach The Lancet Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to The Lancet Offices.

Subscribers, by sending their subscriptions direct to The Lancet Offices, will ensure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

The Colonial and Foreign Edition (printed on thin paper) is published in time to catch the weekly Friday mails to all parts of the world.

The rates of subscriptions, post free from The Lancet Offices, have been reduced, and are now as follows:—

For the United Kingdom.		To the Colonies and Abroad.	
One Year	£1 1 0	One Year	£1 5 0
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Subscriptions (which may commence at any time) are payable in advance. Cheques and Post Office Orders (crossed "London County and Westminster Bank, Covent Garden Branch") should be made payable to the Manager, Mr. Charles Good, The Lancet Offices, 423, Strand, London, W.C.

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Subscribers abroad are particularly requested to note the rates of subscriptions given above.

The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied.

Sole Agents for America—Messrs. William Wood and Co., 51, Fifth Avenue, New York, U.S.A.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

The Lancet Office, Sept. 2nd, 1914.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Aug. 27	29 90	N.W.	...	116	69	57	58	61	Cloudy
" 28	30·26	N.E.	...	107	74	57	58	60	Cloudy
" 29	30·31	N.	...	115	79	58	59	61	Fine
" 30	30·27	S.W.	...	111	77	60	61	64	Overcast
" 31	30·28	N.E.	...	103	72	60	62	66	Fine
Sept. 1	30·34	E.	...	117	75	63	61	65	Cloudy
" 2	30·32	E.	...	112	76	57	58	63	Fine

Communications, Letters, &c., have been received from—

A.—Messrs. Allen and Hanburys, Lond.; Mr. R. J. Albery, Lond.; Mr. T. Avashia, Kutiana.

B.—Messrs. J. Beal and Son, Brighton; Bristol Royal Naval Hospital; Bristol Royal Hospital for Sick Children, Secretary of; Dr. W. Briggs, Blackburn; Captain Bennett, R.A.M.C., Cambridge: Mr. W. T. Beswick, Lond.; Mrs. Batley, Christchurch; Messrs. Burroughs Wellcome and Co., Lond.; Blackburn, Medical Officer of Health of; Mr. C. Birchall, Liverpool; Messrs. R. and J. Beck, Lond.; Dr. G. S. Brock, St. Andrews; Messrs. E. J. Burrow and Co., Cheltenham; British Red Cross Society, Lond., Secretary of; Dr. C. Hubert Bond, Lond.; Board of Education, Lond., Secretary of; Mr. W. H. Brown, Lond.; Birmingham University, Clerk of; Mr. Clark Bell, New York.

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I.—International News Co., Lond.; I. G.

J.—*Journal of the American Medical Association*, Chicago.

K.—King Edward Memorial Hospital, Lond., Chairman of; Kent County Council, Maidstone, Chief Medical Officer of; Messrs. R. A. Knight and Co., Lond.; Mr. E. Knight, Lond.; Mr. William Kirkby, Manchester; Mr. James Keith, Bexhill-on-Sea.

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U.—United States Patent Office, Washington.

V.—Victoria Hospital, Hull, Secretary of.

W.—Wolverhampton General Hospital, Secretary of; Messrs. Wilson and Mathieson, Leeds; Messrs. Whiffin and Sons, Lond.; Woodhall Spa Co., Secretary of; Women's Hospital for Children, Lond., Secretary of; Messrs. W. Wood and Co., New York; Mr. A. Wilson, Lond.; Dr. Humphrey J. Wheeler, Lond.; Messrs. Williams and Norgate, Lond.; West London Hospital Post-Graduate College, Dean of; Dr. Walter L. Woollcombe, Plymouth; Walsall and District Hospital, Secretary of; Messrs. F. Williams and Co., Lond.; Dr. John H. Watson, Burnley; Mr. J. H. White, Lond.

Y.—Yōst Typewriter Co., Lond.

Z.—Dr. T. Zangger, Zürich.

Letters, each with enclosure, are also acknowledged from—

A.—Dr. M. A. Ansari, Delhi; Ashwood House, Dudley, Secretary of; A. J. A.

B.—Mr. F. Bartenstein, Lond.; Sir Lauder Brunton, Bart., Lond.

C.—Dr. F. G. Caley, Lond.; Messrs. J. and A. Carter, Lond.; Coventry Corporation, Treasurer to the.

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The Lettsomian Lectures

ON

DYSENTERY.

Delivered before the Medical Society of London, 1914,

BY F. M. SANDWITH, M.D. DURH.,
F.R.C.P. LOND.,

GRESHAM PROFESSOR OF PHYSIC; LECTURER ON TROPICAL DISEASES,
ST. THOMAS'S HOSPITAL, ETC.

LECTURE II. (PART I.)*

AMŒBIC DYSENTERY.

> THE physician must be able to tell the antecedents, know the present and foretell the future ; must meditate these things, and have two special objects in view with regard to diseases, namely, to do good or to do no harm. The art consists in three things—the disease, the patient, and the physician. The physician is the servant of the art, and the patient must combat the disease along with the physician.—Hippocrates, "Epidemics," Book I.

THE ENTAMŒBÆ OF THE HUMAN INTESTINE.

This question is a complicated one, due partly to changes of nomenclature, and I therefore propose to devote a few minutes to placing on record the present position of our knowledge. In the preparation of this part of the lecture I have received much practical assistance from the well-known protozoologist, Dr. C. M. Wenyon.

As I stated in my first lecture, amœboid organisms in the human intestine were first satisfactorily described by Lösch in 1875. He gave the name Amœba coli to amœbæ which he had seen in the stools of a patient presenting dysenteric symptoms in St. Petersburg. From the figures and description given by Lösch it would appear that the organism observed by him is identical with the one which is now known to be the cause of amœbic dysentery. But for some reason which is not quite clear it is now generally assumed that he was dealing with the non-pathogenic entamœba of man, and in consequence the name Entamœba coli is now employed for this species. Many observers after Lösch recognised the possible pathogenicity of the human entamœbæ, and frequently demonstrated that dysenteric lesions could be produced in animals (cats, dogs, and monkeys) by the rectal injection of fæces from dysenteric patients.

In 1891 Councilman and Lafleur published a very exhaustive account of amœbic dysentery, and fully recognised its cause in an amœboid organism which they named Amœba dysenteriæ. There can be no doubt that these observers were dealing with the entamœba which is now recognised as the cause of amœbic dysentery throughout the world, and if we still adhere to the view that Lösch was observing the non-pathogenic form, then the name Entamœba dysenteriæ is the proper name for the common dysentery-causing entamœba of man. In 1895 Casagrandi and Barbagallo studied human entamœbæ, and gave a description (under Lösch's name Amœba coli) of the common non-pathogenic form, the one which is now recognised as Entamœba coli.

The Developmental Cycle.

Finally, Schaudinn came into the field and demonstrated clearly, what others before him had suspected, that the human intestine was liable to infection from two distinct organisms, one pathogenic and the other harmless, and that much of the confusion connected with the subject of amœbic dysentery was due to a failure to recognise this fact. Schaudinn re-described the Entamœba coli of Casagrandi and Barbagallo, who had previously recognised the encysted forms of Entamœba coli, and had fully appreciated their importance in the matter of survival outside the body of man and of conveyance of infection to a new host. They had observed that within the cyst the Entamœba coli multiplied, and that when the cyst came into a new host it ruptured and there emerged eight small, young entamœbæ which brought about infection. Schaudinn added little to this account except that he described a developmental process as taking place within the cyst, which was of the nature of a self-fertilisation, termed autogamy, and which preceded the division of the entamœba into eight daughter cells. This autogamy process for Entamœba coli has received no confirmation and many authorities even question its existence.

On the subject of the pathogenic entamœba Schaudinn confirmed much of the work which had previously been done by others, and added further details relating to the developmental cycle. Unfortunately his researches were made on insufficient material containing degenerating entamœbæ, and they therefore cannot be regarded as correct. On the strength of his observations Schaudinn created for the pathogenic entamœba the name Entamœba histolytica, which is now generally employed. He described Entamœba histolytica as reproducing in the large intestine of man, by a simple division into two parts or by a process of gemmation whereby small buds having a diameter of 3–6 μ were separated from the parent organism. These buds were supposed either to grow into adult entamœbæ again or to become enclosed in very tough brown capsules, in which case they acted as spores, escaped from the intestine and brought about infection of a new individual. Hartmann has examined many of the preparations on which Schaudinn's account was based and finds that he was dealing with degenerating forms, which led him to deduce an erroneous cycle of development.

It is not to be wondered at that Schaudinn failed to recognise in his preparations the organism described by Councilman and Lafleur as Amœba dysenteriæ, for it had been studied in a far greater amount of material than Schaudinn had at his disposal. Councilman and Lafleur observed only the free amœboid forms and did not encounter the encysted forms which could convey the infection.

The next step in advance was made by Viereck (1907), who studied amœbic dysentery in West Africa and found that the organism producing the disease differed from that described by Schaudinn in that there occurred encysted forms which were very much like the encysted forms of Entamœba coli. They were, however, smaller, being 10–12 μ in diameter, instead of 15–20 μ, and led to the production of only four daughter entamœbæ within the cyst instead of eight. These encysted forms differed so much from Schaudinn's small brown spores that Viereck concluded that he was dealing with a distinct entamœba, which he called Entamœba tetragena.

Observers all over the world then began to look for Viereck's encysted forms (tetragena cysts), and it soon became evident that wherever amœbic dysentery occurred, there the causative entamœba produced Viereck's cysts and never the small brown spores described by Schaudinn. The suspicion has since gradually gained ground, till at the present time it amounts to a conviction, that Schaudinn must have been wrong in his account and that the development described by Viereck, which led him to regard his entamœba as a new species, was simply the first true account of the development of the pathogenic entamœba of man, which had been studied by numerous observers in all parts of the world, and had been first named Amœba dysenteriæ by Councilman and Lafleur and, later, Entæmœba histolytica by Schaudinn. The true name for the pathogenic entamœba of man should therefore, by priority, be Entamœba dysenteriæ. It should, however, never be forgotten that Schaudinn was the first clearly to recognise two distinct human entamœbæ, one pathogenic and the other non-pathogenic, and that this did a great deal to clear up the existing confusion.

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The Parts Played by the Two Forms of Amœbæ.

At the present time the most accepted view is that the large intestine of man is liable to infection by two distinct entamœbæ. One of these, Entamœba coli, is a harmless organism, living merely on the intestinal contents and never penetrating the mucous membrane. It reproduces by simple division, and possibly by a multiple segmentation into eight, also in the intestine, and occasionally becomes enclosed in transparent spherical cysts, having a diameter of 15–20 μ, and within which in the next host it ultimately divides into eight daughter entamœbæ. These cysts are passive bodies and escape from the intestine naturally with the fæces, and, being resistant, they protect the entamœbæ within till chance shall bring them into the intestine of a new host.

The second entamœba, the Entamœba dysenteriæ (E. histolytica, Schaudinn, or E. tetragena, Viereck), is a pathogenic organism which not only lives amongst the intestinal contents, but actually invades the tissues of the large intestine, leading to all the troubles and symptoms associated with amœbic dysentery. This organism reproduces in the intestine by simple division like Entamœba coli, and also sometimes becomes encysted in transparent cysts having a diameter of 10–12 μ. Within the cyst there are produced in the next (human) hos four daughter entamœbæ, and, as in the case of Entamœba coli, the cysts are responsible for the carriage of infection from one individual to another. As the entamœbæ themselves survive only a short time outside the host, the importance of these encysted forms is evident, for it is by their agency that amœbic dysentery is kept going. While living in the intestine of cases of active dysentery the entamœbæ are large organisms 20–30 μ or more in diameter, and in this condition they invade the tissues and produce the extensive undermined ulcers so characteristic of the disease.

During the height of the dysenteric attack, when there is active invasion of the tissues, encysted forms are not produced, but as the dysenteric process abates, possibly by way of protecting themselves against antibodies, the entamœbæ begin to encyst. Prior to encystment, however, the characters of the entamœbæ change somewhat, and instead of comparatively large organisms there appear smaller forms having a diameter of only 10–20 μ. This small type differs also in the character of its cytoplasm, so much so that Elmassian, in 1909, was led to describe it as a distinct entamœba under the name of Entamœba minuta. It is now known that these represent the pre-encysting generation of the pathogenic entamœba. Persons who have apparently recovered from an attack of amœbic dysentery may have entamœbæ of the "minuta" type multiplying in the intestine apparently without there being any active invasion of the tissues.

During this time the entamœbæ are constantly encysting, and the individual may be passing, with a little mucus, enormous numbers of the infective encysted forms in the stools. Such individuals are termed by E. L. Walker and A. W. Sellards "convalescent carriers," and they are not only in a condition dangerous to themselves, in that they are always liable to relapse, the "minuta" forms of the entamœbæ giving place to the large active tissue-invading forms ("histolytica" forms), which begin again their destruction of the wall of the large intestine; but they are exceedingly dangerous to other people, in that they may be distributing broadcast the infective cysts, which have only to gain entrance to the intestine, in the food or water, to bring about infection. Such individuals are, in fact, infinitely more dangerous than those who are suffering from acute dysentery and who are passing only the large non-infective "histolytica" forms. It is not known with certainty exactly how long such "convalescent carriers" may harbour the "minuta" forms of the pathogenic entamœba without themselves suffering a relapse of their old symptoms or ridding themselves of their infection. It may at least be for a period of several months.

Walker and Sellards have described, under the name of "contact carrier," another type of individual who is found to be infected with the "minuta" generation without ever having suffered from amœbic dysentery. They suppose that such persons have become infected by ingesting encysted forms, but that the entamœbæ, for some reason not understood, have not invaded the tissues and have remained in the cavity of the intestine as "minuta" forms, which reproduce there and encyst as in the "convalescent carriers." It may be concluded, therefore, that from the point of view of the already infected individual, the free entamœbæ are of importance because they are the tissue-invading forms, but that from the point of view of spread and dissemination of the disease the cysts only are to be feared. With a little experience it is easy to recognise and identify in fæces the encysted forms of either Entamœba coli or Entamœba dysenteriæ, but the identification of the free unencysted forms presents much greater difficulties, even to the expert.

Experimental Work.

It is impossible to enter here into the details of experimental work which has led to the view outlined in this lecture. It has been frequently shown that injection of the pathogenic entamœbæ into animals leads often to their infection and death from amœbic dysentery. Since the encysted stages of the entamœbæ have been recognised, more accurate experiments have been conducted. From the work of Darling, James, Wenyon, Walker, and others it has been shown that, in cats especially, the free forms of Entamœba coli injected per rectum and the encysted forms given per os do not lead to any dysenteric symptoms, whereas the free Entamœba dysenteriæ injected per rectum or the encysted forms given per os lead to intense infection of the large intestine, invasion of the tissues, and the production of a condition of affairs exactly comparable to that of a human being suffering from amœbic dysentery.

In a series of investigations undertaken at the

London School of Tropical Medicine Wenyon carried on the infection in cats for a series of passages. The initial infection was produced by injecting per rectum and per os the stool of a patient who had previously had amœbic dysentery, but had recovered. It was found, on routine examination, that there was a large infection of the "minuta" form and numbers of cysts were being passed. In fact, the patient was a "convalescent carrier." The first cat so treated acquired typical acute amœbic dysentery, and there were passed thousands of entamœbæ which were large and of the "histolytica" type. No cysts, however, could be found. The gut contents of this cat, injected per rectum into a second cat, reproduced the condition of the first. A third cat was infected from the second and a fourth from the third. All the animals died of the disease and post mortem they all showed ulceration of the large intestine, which on section was found to be invaded by countless numbers of the large entamœbæ. The entamœbæ were also found in the mesenteric glands, while in the fourth cat there were found in addition four abscesses of the liver containing numbers of large entamœbæ. In this cat there was thus reproduced not only the dysenteric condition of man but also liver abscess, which occurs as a complication in so large a percentage of cases of human amœbic dysentery.[1] The primary invasion of the intestinal wall by the entamœbæ can more easily be studied in the cat than in man on account of the possibility of obtaining material unaltered by post-mortem changes.

In the cat the entamœbæ enter the tubular glands of the large intestine and make their way to the deepest limits of these glands. Here they multiply and, by pressing on the cells and possibly by excreting some injurious toxic substance, they cause the cells to degenerate and separate. The entamœbæ then push their way between the cells and by means of their pseudopodia burrow in the submucous tissue. Bacteria are admitted and, together with the entamœbæ, bring about the tissue destruction so characteristic of the disease. The entamœbæ enter the blood-vessels, and it is probably by this route in the portal vessels that they reach the liver.

While producing experimental amœbic dysentery in cats by feeding them on material containing the "tetragena" cysts, Darling, in a similar manner, has been able to pass the infection from cat to cat. He has found that after a series of passages the entamœbæ tend to change from the "histolytica" type to the "minuta" type, and that there then appear in the fæces the "tetragena" cysts. He has therefore discovered in cats the same cycle of changes in the characters of the entamœbæ which occur in natural human infections.

Before leaving the subject of the intestinal entamœbæ of man reference must be made to some recent experiments carried out in the Philippine Islands by Walker and Sellards, who have shown conclusively by experiments conducted on men that the encysted forms of the two human entamœbæ are the infective agents, and that one is pathogenic and the other harmless. Of 20 men who ingested Entamœba coli 17 became infected, as proved by their stools, yet none developed the symptoms of dysentery. Of 20 men who ingested Entamœba histolytica (dysenteriæ), 17 became infected after one feeding, while another became infected after three feedings. It was shown that ingestion of encysted forms only led to the appearance of mobile entamœbæ in the stools. In one case ingestion of cysts only led to the appearance of free entamœbæ and, later, encysted forms, and, still later, free entamœbæ again, an alternation repeated several times. Ingestion of free entamœbæ (after neutralisation of the stomach contents) led to the appearance of entamœbæ in the stool. Of the 18 men who became infected with the pathogenic form, 4 developed amœbic dysentery. The incubation periods up to the time of onset of symptoms in the 4 cases were 20, 95, 87, and 57 days respectively. It is interesting to note that these 4 cases were all infected from either "contact" or "convalescent" carriers. The disproportion between the number of men (18) who became infected with the pathogenic entamœbæ and the number of these (4) who actually developed dysentery is worthy of remark in showing how easy it is for an individual to become a "contact" carrier without actually acquiring dysentery itself.[2]

It must be mentioned that upwards of 20 different species of entamœba have been described from the human intestine by various observers. It may very safely be stated that none of these have been sufficiently studied to exclude the possibility of their being other than modified forms or involution forms of one of the two entamœbæ described above. It is true that occasionally amœboid organisms, resembling the free-living amœbæ of the Amœba limax type, are encountered in the intestine, but these must be clearly distinguished from the entamœbæ. They are probably free-living forms which have obtained accidental entrance to the intestine in an encysted condition, and, finding the contents congenial, for some reason or another, have proceeded to grow and multiply there, without in any sense being parasitic and dependent upon the host, as are the true entamœbæ.

PATHOLOGICAL ANATOMY.

The primary lesion of amœbic dysentery is apparently an exudation into the submucous coat of the large intestine, first seen to the naked eye as red, slightly raised spots, not much larger than the head of a pin. When these congested spots grow in area a yellow central point appears, which is the earliest stage of ulceration, due to local necrosis of the mucous membrane. It is rare to see the early stages of ulceration, unless the patient has died from some other disease, but at the post-mortem examination of a case of acute dysentery it is sometimes possible to see all the various stages in the same intestine. The ulcers have a tendency to extend in a circular or ragged form around the bowel and are sharply limited to the large intestine. Another characteristic of amœbic dysentery is that the whole intestine is not uniformly affected, for there remain areas of quite healthy mucous membrane between the thickened and abruptly raised patches of ulceration. In a neglected case of severe amœbic dysentery the thickened intestine can be easily felt through thin abdominal walls. In gangrenous cases the ulceration extends to the serous coat and occasionally causes perforation of the lower bowel and peritonitis.

In at least half the dysenteric necropsies which I have performed or witnessed in Egypt and Turkey the whole of the large intestine has been attacked, with the exception of the heathy areas just mentioned, and in comparatively early cases the lesion was more advanced in the lowest part of the large intestine. Sir Leonard Rogers, after 12 years' experience of more than 100 dysenteric post-mortem examinations in Calcutta, finds that the ulcers are often limited to the upper parts of the large bowel, the sigmoid and rectum remaining free.

I have the opportunity of showing you pathological specimens of dysentery from different parts of the world, mostly borrowed from the museum of the London School of Tropical Medicine. The following is Professor Symmers's post-mortem note of an Egyptian, aged 30, who died in 1903 in the eighth week of dysentery, after the number of daily evacuations had been reduced from 14 to 4 by enemata of boracic acid and sulphate of copper.

CASE 1.—The whole of the large bowel from anus to ileocæcal valve showed numerous circular ulcers from $\frac{1}{4}$ to 1 inch in diameter, crateriform in appearance, with elevated and slightly undermined margins of a bright red colour. Most of these ulcers were covered by thick masses of yellowish matter, practically amounting to a false membrane. This dysenteric condition ceased with absolute abruptness at the very commencement of the small bowel, which was normal except for some slight prominence of the solitary lymph follicles.

Such a post-mortem appearance makes the physician despair of attempting any drug treatment, unless it is certainly amœba-cidal.

The microscopical appearances of early amœbic ulcers show a considerable small-celled infiltration of the submucosa, which elevates the mucous membrane to form the raised spots on the inner surface of the bowel. This infiltration consists of leucocytes and amœbæ, which latter have the power of burrowing between the muscular fibres, and so may reach the subserous coat. They may also penetrate the veins and enter the portal system, accounting eventually for inflammation or abscess of the liver.

Half a century ago dysentery used to be one of the chief diseases of Egypt, both among the natives and Europeans. The death-rate from that disease in the European hospital in Alexandria[3] was 16·7 per cent., while Griesinger at Kasr-el-Ainy Hospital in Cairo found 186 cases in 363 necropsies, of which he called 96 primary or idiopathic and 90 secondary. Dysentery is decidedly less common to-day, for the Kasr-el-Ainy statistics during the four years 1910–13 record that there were 11,108 in-patients in the medical wards, of whom 345 had dysentery and 53 of them died. To them we ought, perhaps, to add 233 other cases of bilharzial dysentery, because it is unlikely that they would have been differentiated in Griesinger's time. But after this addition the sum only amounts to 5·2 per cent. of the medical cases admitted to the chief hospital in Egypt.

CLINICAL DESCRIPTION.

Amœbiasis is a convenient name for specific lesions in various parts of the body, intestine, liver, brain, skin near anus, &c., and amœbic colitis has been proposed by Dr. Strong and Sir L. Rogers as a preferable term to amœbic dysentery, because it includes the sporadic mild cases, even when accompanied by constipation, in addition to those characterised by frequent evacuations and the constant presence of tenesmus, blood, and mucus. We now know that amœbic ulceration of the large intestine may continue for months unaccompanied by the classical signs of dysentery, and in such cases only careful and repeated examinations of the fæces will reveal the true nature of the disease. It is therefore important not to overlook this colitis in its latent phase.

The existence of tenesmus, often the symptom forcing the patient to seek medical aid, means that there are lesions in the proximity of the sphincter. If the lesions, on the contrary, either in true dysentery or in bilharzial infection, are limited to the colon, there will be no tenesmus. It is not rare to find a patient in this country who has recently returned from the tropics and is complaining of slight indigestion, constipation, and vague pains in the intestines. On palpation it may be found that there is tenderness over the colon but none over the small intestine. A dose of sulphate of magnesia, followed by a careful microscopical examination of fresh warm fæces by an expert, may reveal the presence of Entamœba histolytica and ensure the correct diagnosis of the malady.

The following case shows that one negative examination by the microscopist, especially in a cool laboratory, must not preclude the possibility of the presence of amœbæ:—

CASE 2.—In 1897 a thin Egyptian, aged 35 years, was transferred from the eye wards to my care in Cairo. Clinically, there was no doubt about the dysentery, and he passed, in the first 24 hours after transference, 27 typical motions. Yet Dr. Ruffer, who personally examined the stools on that day, reported "plenty of pus, no amœbæ." Two days later, when there were 10 motions, he reported "blood-stained liquid stool, containing no fæcal matter, but large quantities of slimy shreds, some of them blood-stained. Microscopically, a few red blood corpuscles and an enormous number of rather small amœbæ with clear protoplasm and vesicular nucleus. Temperature of room 60° F. (Jan. 16th). Amœbæ non-motile at that temperature.

The next day the report stated that amœbæ were present in fairly large numbers, and the fæces were still shreddy and slimy. On Jan. 18th, when the number of daily motions was reduced to eight, the stools were "not fœtid, fluid, with shreds of mucus, some slightly blood-stained. Pure culture of granular amœbæ, nucleus small without nucleoli, protoplasm granular, no movements. Temperature of room 60°." After Jan. 20th he never had more than one or two motions in the 24 hours, and began to put on weight. He was treated throughout, and apparently cured, by large doses of bismuth with tannic acid and opium in small quantities, and this may have been aided by large daily enemata of boracic acid and starch, in which I was then a believer.

The onset of amœbic dysentery is usually sudden and always begins with diarrhœa. Fever is not a marked feature, and when present is never high, so that I agree with the Panama experience that a temperature much above 101° F. usually betokens some complication.[4] The stools vary from day to day in number and in quality and, as I have said, in the presence of amœbæ. No naked-eye examination of fæces can be trusted to determine whether the patient is suffering from amœbic or bacillary dysentery, but I have learnt, partly from experienced hospital sisters, that a shrewd guess can often be made in this direction. For instance, if the mucus is of a deep red blood colour and purulent, not unlike the contents of a liver abscess, it is safe to prophesy that amœbæ will be found. It is impossible to tell by the pain or by the appearance of the patient whether a case is amœbic or bacillary. The pain is intestinal, and is specially great before and during an evacuation. A higher degree of leucocytosis, tenderness over the colon, and thickening of the large intestine are all in favour of the amœbic type. Mild cases, unrecognised as dysentery, or untreated by emetine or ipecacuanha, are those which are liable to develop hepatitis as a complication, or to become chronic, lasting several months, or even a year, and producing anæmia and emaciation. Fayrer tells of cases in his own practice where Europeans had suffered from relapses of dysentery for 10 or 12 years.

The cause of death in amœbic colitis is generally perforation and peritonitis, succeeding ulceration of the colon or appendix. The most frequent complication is abscess of the liver, and I have seen in Egypt two cases of abscess of the spleen.

Importance of Washing Stools.

Dr. Edward Goodeve (1816–1880), when professor of medicine in Calcutta, used to teach the necessity of watching the stools by carefully washing them and allowing the different parts to separate, so that sloughs and mucus can be distinguished from fæces. "The state of the bowel, the stage of the disease, and the nature of the morbid process may thus be ascertained with much accuracy" (Fayrer, p. 38). Unfortunately, Goodeve never published his observations on dysentery, and this may possibly account for the fact that fæces would seem not to be universally washed when a case of dysentery (or ulcerative colitis) is being treated. I gather that this is not part of the training of a British hospital, for I have seldom found a nurse or a young doctor in or out of hospital who had ever washed a specimen of fæces to look for mucus or worms. I should therefore like to take this opportunity of reiterating the importance of washing dysenteric stools under a tap of cold water, rejecting the top liquid after a minute's delay, and thus continuing the process patiently and slowly until all trace of fæces has disappeared. The mucus or slough which remains, or the whole motion if desired, can be conveniently kept for the doctor's inspection in a large glass Petri dish, as invariably used at the Albert Dock Hospital.

In acute dysentery the earliest evacuations almost completely remove fæculent matter, but not fæculent colouring. The washed stools then consist of rose-coloured mucus of gelatinous consistence. Such may be seen in private practice where the patient summons medical aid within a few hours, but in hospital cases the symptoms have usually been neglected for some days previous to admission.

> In a neglected case sloughs are generally passed on the sixth or seventh day. These vary in size up to that of a man's hand. In fair constitutions these sloughs often have much the appearance and consistence of a preserved oyster. They are oval and nearly a sixth of an inch in thickness. They are made up of the whole depth of the mucous membrane, frequently backed with some of the muscular coat, the submucous tissue being largely infiltrated with the products of inflammation.[5]

It is only by washing the stools and inspecting them daily that one accurately judge how the patient is progressing, and whether it is safe to increase the diet. We are also enabled to see whether the patient has been taking any forbidden article; an English patient on liquid diet once asked me if he might suck some oranges, and two days later I found that his washed stools consisted only of orange pulp which he had swallowed.

(*To be continued.*)

Down District Asylum.—The Inspector of Lunacy, in his report of the recent inspection of the Down District Asylum, states that "the admirable condition in which I find the institution is no doubt to be attributed to the careful attention which the committee give to every detail of the management, and to the able manner in which they are supported by Mr. M. J. Nolan, resident medical superintendent, who brings to his work remarkable zeal and efficiency, and spares no pains in the discharge of his onerous duties."

THE PRINCIPLES WHICH GOVERN THE ULTIMATE RESULTS OF HARE-LIP AND CLEFT PALATE OPERATIONS.

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The vital issue in the controversy with regard to the surgical treatment of hare-lip and cleft palate that has been waged so earnestly on both sides of the water during recent years, when reduced to first principles and stripped of all confusing differences of surgical operative technique, which are after all of secondary importance, resolves itself into proper discrimination between the following surgical operation methods: (1) Compression (forcing the sides of the bony palate in early infancy); (2) flap reversing operations (Lane, Davies Colley); (3) flaps of bone and muco-periosteum (Ferguson); and (4) muco-periosteal flat sliding operations as in the von Langenbeck-Warren types.

Final results.—The standard of value by which the decision in making selection is to be determined must be the final result. Therefore it is this aspect of our subject that demands earnest attention at this time even to the subordination of all other considerations, for it is obvious that a method is only valuable in proportion to its effectiveness in this respect. Study of the literature pertaining to hare-lip and cleft palate operations reveals a strange confusion concerning the question of the actual results of the methods that the various writers advocate.

Estimation of benefit.—Unquestionably eminent and duly conscientious surgeons have been misled, and thus their statements have been influential in misdirecting the efforts of a large following with more or less ultimate general disappointment, simply because their estimation of the effect of the surgical measures employed and recommended was not sufficiently far-reaching.

Common point of view.—After a somewhat extensive opportunity for observation during the many years that I have practically made this division of practice my life work, and with more or less intimate personal acquaintance with the advocates of some of the different methods of operation for the correction of these defects, I am convinced that there can never be a proper settlement of the vexed problems involved until a common point of view concerning the purposes and influences of the several operative procedures has been established.

For example, if the mere covering of a palate fissure with tissue is to be the standard of success, then all the generally recognised methods must be entitled to appreciation, because this result undoubtedly can be accomplished in a more or less considerable proportion of cases by any of them. If on the other hand effective speech improvement be the determining factor, at once a wide range of distinction must be recognised, the determination of which is dependent upon many modifying factors. Again, if favourable or unfavourable developmental conditions and their influence upon cosmetic effect, general growth, and health, as well as involved nervous states, are to be included with speech improvement, as they certainly ought to be, then the right of each method to continued recognition must stand or fall according to the rating of its effect upon the individual. Since the *raison d'être* for every such operation depends upon its possibilities in restoring to those who bear the mark of these sad afflictions, speech, increased health, comfort, usefulness and happiness, their measure of surgical effectiveness must be according to all of these considerations and all that their acquirement may involve or supply.

It is at once apparent that in broadening our point of view we have opened up an almost unlimited field for discussion, but, fortunately, the most vital factors in control of these desiderata are inexorably affected by the dependence of post-operative physiologic activities upon the character and nature of the surgical treatment; thus by process of elimination the number of operative methods which may be considered desirable are correspondingly reduced.

The standard of staphylorrhaphy.—The principles which should govern the choice of operation in cleft palate cases may be enumerated as follows: 1. Never correct a deformity by surgical or other forcible means if such defect may be made to correct itself in natural course of development. 2. Never destroy any structure that may be required for the perfection of future developmental processes. 3. Never misplace or so disarrange the form or situation of any tissue in such manner as to impair its future functional usefulness. 4. Never exceed the reparative possibilities of tissue in flap formation by endeavouring to close completely at one operation the palate fissures of cases in which this is inadvisable. 5. Aim to improve, by operation if necessary, such operative conditions as cannot safely be overcome immediately.

Destruction of the premaxilla.—The first two considerations would seem to bar not only the old and already discarded methods by which the premaxilla was removed or partially destroyed, or otherwise forcibly injured in order to facilitate the closure of the lip fissure, but also the plan of treatment by which the sides of the palate fissure are forcibly brought together in early infancy and held in contact by wires and metal plates. Surgeons everywhere have long since learned that lip fissures can be closed without such destruction of the premaxilla and the unavoidable injury or loss of the tooth germs which it encloses—an effect that is unavoidably associated with this treatment. The hideous examples of the deformed mouths and faces that these patients present in later life are only too eloquent in their silent condemnation of this procedure.

Defects of wiring and compressing the maxillary bones.—Compression of the upper maxillæ in early infancy also endangers the developmental processes upon which the future form of the nares, the palate, the upper dental arch, and the face depend. Such compression cannot fail to cause an unnecessary degree of deflection of the nasal septum and a marked narrowing of the nares. Wires employed for retention purposes when passed through the upper maxillæ of an infant inevitably destroy from one to four or more of the developing tooth germs; therefore these teeth do not erupt. Without the eruption of the full number of teeth there cannot be a normally shaped dental arch or palatal vault. It is obvious, then, that with intranasal deformity there must be a tendency to nasal disease, that with arrested maxillary development there cannot be a symmetrical face, and with a contracted palatal vault, as well as an irregular dental arch, the best speech function is impossible. Figs. 1, 2, 15, 17, 19, and 21 show the results of this treatment in these cases, and many similar examples might be shown if necessary to prove that such effects are not uncommon.

Flap reversing operations.—Judged in the light of recognition that physiologic action in the performance of the speech function is necessarily dependent upon the restoration of palate tissues in natural anatomical relation, it would seem that flap-reversing operations for palate fissure closure, by which the muco-periosteum is turned upon itself in such manner as to reverse its normal situation upon one side of the palate in order that it may be laid across the opening and sutured to a similar flap raised but not turned over upon the opposite side, could not give the best results. While this method may, and doubtless often does, simplify the actual difficulty in operative performance, such treatment does not ensure as close an approximation to normal palatal conditions as when these tissues are retained in natural form and the flaps brought together by sliding them toward the centre and taking advantage of the slope of the sides of the palatal arch, as in the von Langenbeck-Warren type of operation. There can be little doubt of the importance of the difference in speech effect that these distinctions presage in surgical selection.

Ferguson operation.—The Ferguson operation, by which bone and muco-periosteal structures are carried together from chisel or saw cuts through the bony palate upon each side, appears to offer the best possible means of adjustment at the central portion of the palate where the hard and soft palates are united. This ought to be most favourable to speech, but the objection to this method lies in the fact that if the bone on either of the flaps should be destroyed by sloughing there could not very well be regeneration of the lost portion of the palate, and the situation of such a case would be practically hopeless. Inasmuch as it is sometimes necessary to perform operations the effect of which shall be constructive rather than complete in very difficult cases, this objection is a serious one.

Von Langenbeck–Warren operation.—The von Langenbeck operation, with certain modifications that have suggested themselves in the course of my work, has given me my best results; but any specific method of performing staphylorrhaphy alone is after all insufficient to meet the demands of these cases.

Systematic treatment.—Only by systematic treatment from the very beginning in infancy can the greatest benefits be conferred upon these individuals. It is the development of a complete system and the perfection of technique rather than new or original operations that I have long believed were most to be desired in the care of these patients. The system that I have adopted and the modifications of the von Langenbeck operation that I employ have been fully described and illustrated in my work "The Surgery of Oral Diseases and Deformities," and may briefly be described as follows.

Adhesive strip across lip.—The adjustment of an adhesive strip from the malar region upon one side across the lip fissure in infant cases to the same region upon the opposite side of the face calls into play the child's muscles which would otherwise increase the deformity, and employs them as an aid in the process of narrowing the fissure and correcting the undue prominence of the premaxilla. This also tends to straighten the deflected triangular nasal cartilage; at the same time better breathing and nourishment-taking are facilitated and the infant usually thrives better.

FIG. 1.

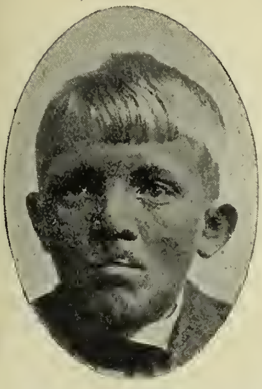

FIG. 2.

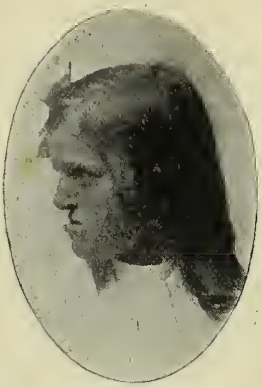

FIG. 1.—Boy 9 years old. An attempt was made to close the palate fissure by compression in early infancy. This failed, and many subsequent palate operations by other operators also failed as a result of the first one. I have recently closed the remaining palate opening, but the deformity will be difficult to overcome.

FIG. 2.—Girl 6 years old. An operation to close the palate fissure by compression and wiring in early infancy failed. Several later attempts by other operators also failed. As a result of this early treatment the entire upper palatal arch is less than the size of a shilling in diameter, and all the teeth but four due at this age were destroyed by the wires.

FIG. 5.

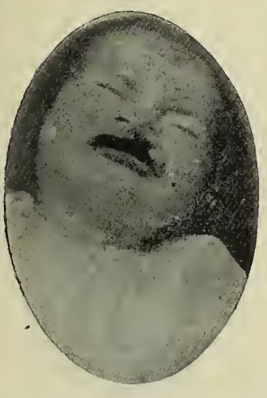

FIG. 6.

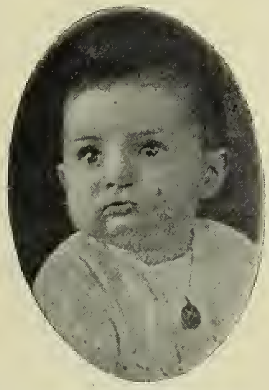

FIG. 5.—Infant with single hare-lip and wide fissure through both hard and soft palates, showing characteristic deformity of nose and mouth.

FIG. 6.—Same baby at 8 months old, after lip and hard palate have been closed as described.

FIG. 9.

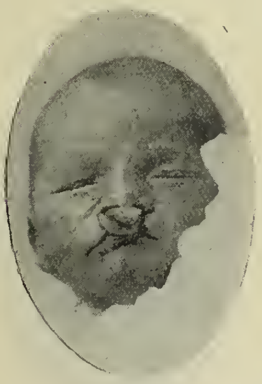

FIG. 10.

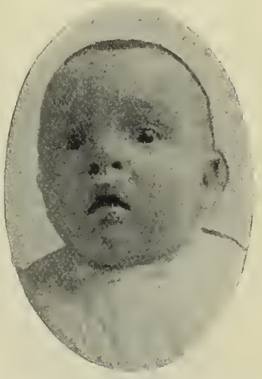

FIG. 9.—Infant with double hare-lip and cleft palate, typical projection of the premaxilla, arrested development of the columns of the nose and philtrum of the lip.

FIG. 10.—Same baby, 18 months old, after operative treatment in accordance with the described method by operation upon the lip at 2 months old, the hard palate at six months, and the soft palate one year later. The tendency to correct development of the nares and the freedom in the roll of the upper lip are important features.

FIG. 3.

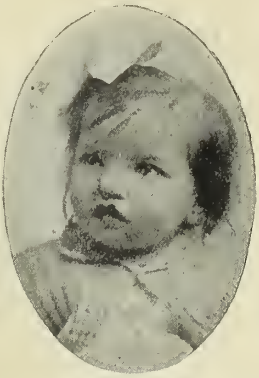

FIG. 4.

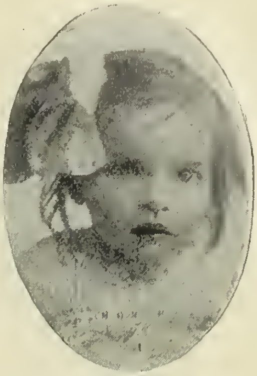

FIG. 3.—Infant with hare-lip, but normal palate.

FIG. 4.—Same child as shown in Fig. 3 after the lip fissure has been closed. Continued development may be expected to be normal because the nose and palate were not affected. It is this condition which should be approximated as nearly as possible in the treatment of cases in which the palate is involved.

FIG. 7.

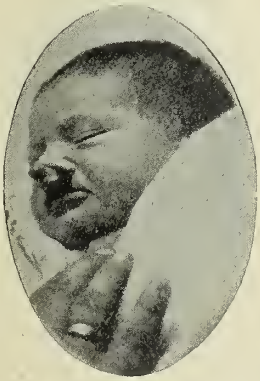

FIG. 8.

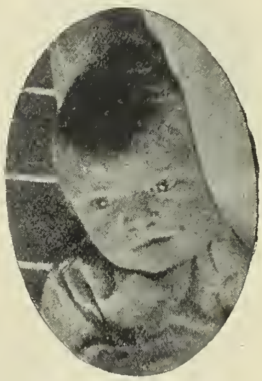

FIG. 7.—A marked case of double hare-lip and cleft palate.

FIG. 8.—Same baby as shown in Fig. 7 after lip and hard palate have been closed.

FIG. 11.

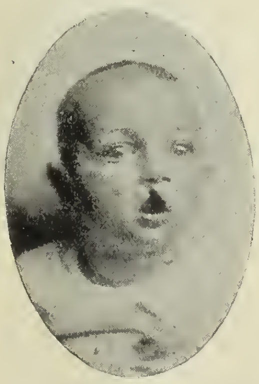

FIG. 12.

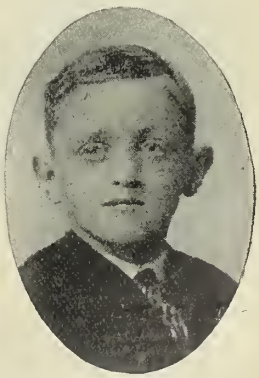

FIG. 11.—Infant with single hare-lip and cleft palate.

FIG. 12.—Same child at 6 years old. The lip was closed at about 2 months, the hard palate between 5 and 6 months, and the soft palate at 2½ years. The symmetrical development of face, nose, mouth, and jaws at 6 years old seems to prove that this would not have been possible had any growing structures been seriously damaged in the course of the early operations.

FIG. 13.

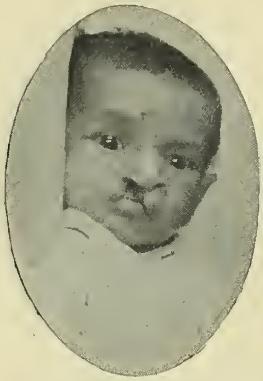

FIG. 14.

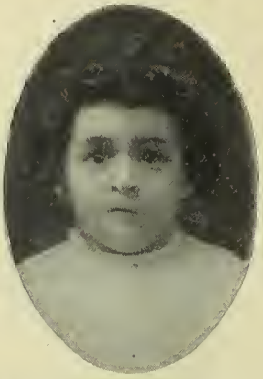

FIG. 13.—Infant with very wide fissure through lip and hard and soft palates; also marked nasal deformity.

FIG. 14.—Same child shown in Fig. 13, at 4 years old, after the lip and palate operations have been completed. The final operation was performed when she was 2 years old. Tendency towards correct development may be noted.

FIG. 17.

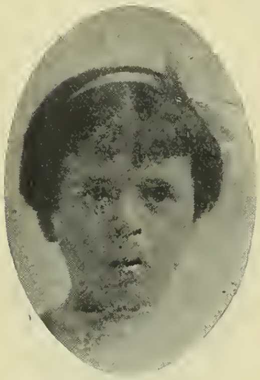

FIG. 18.

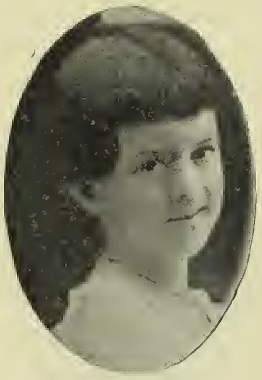

FIG. 17.—Picture of a little girl, showing the effect of imperfect early lip and palate operations.

FIG. 18.—Same child as shown in Fig. 17, after closure of the palate fissure and re-operation upon the lip and nose.

FIG. 21.

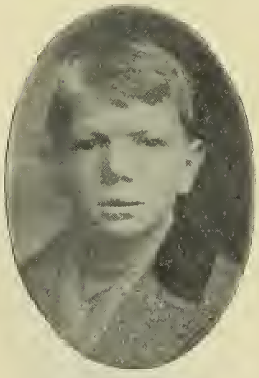

FIG. 22.

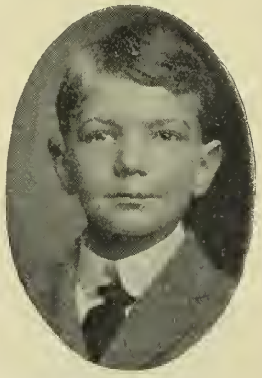

FIG. 21.—Boy 9 years old. Previous history shows that an operation was performed in early infancy in which an endeavour was made to close the palate by the use of wires through the jaws and lead retaining plates. This failed disastrously, and was followed by four other operations with only partial success. The difficulties were enormously increased by the effect of the early infancy operation.

FIG. 22.—Same boy as shown in Fig. 21, after lip and nose have been re-constructed and the palate fissure closed by two operations. It was necessary for me to re-adjust the malposed parts and partly close the palate fissure at the first operation, and to complete the closure one year later. Since this picture was taken he has been for several years under treatment by his dentist, who has been endeavouring to bring the malposed teeth into proper alignment.

FIG. 15.

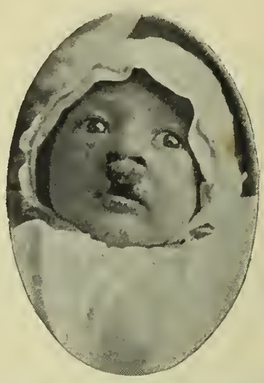

FIG. 16.

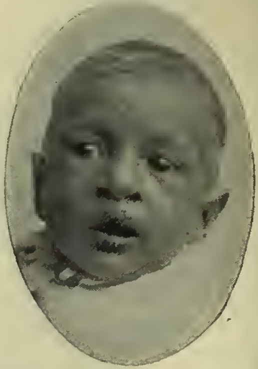

FIG. 15.—Infant with double hare-lip and cleft palate. The history of this case before coming to me shows that a few days after birth an attempt was made to close the palate fissure by the use of silver wire and lead plates. The wires sloughed out and there was a general infection, as a result of which the child was in a very critical state for several weeks before recovery.

FIG. 16.—The same baby after I have closed the lip and hard palates. It will be seen that it was impossible to get as perfect a result as might have been obtained had the first operation not been performed.

FIG. 19.

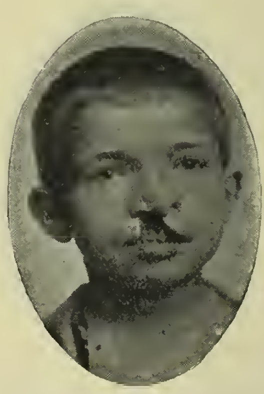

FIG. 20.

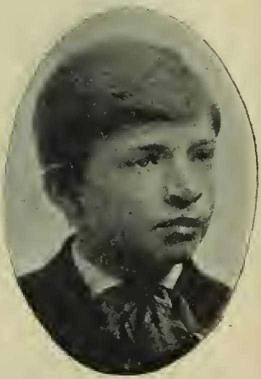

FIG. 19.—Boy 12 years old. Previous history shows that an attempt was made to force the sides of the palate together by the use of wires. This and a series of other operations at various times all failed.

FIG. 20.—Same boy as shown in Fig. 19, after both lip and palate have been completely closed.

FIG. 23.

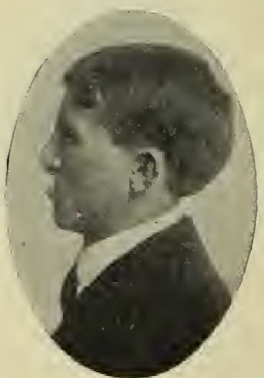

FIG. 24.

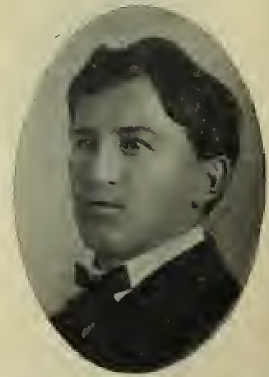

FIG. 23.—Shows the usual tendency to increased deformity that follows when the lip and palate structures have been malposed in early infancy.

FIG. 24.—Same man as shown in Fig. 23, after the philtrum of the upper lip and the columna of the nose have been re-adjusted and the associated parts brought forward.

It also becomes accustomed to the restraint and does not fret or fight the sutures so much after the lip operation has been performed. By this treatment one operative step leads to the next in such manner as to reduce its difficulties, and normal post-operative development is facilitated. Figs. 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, and 14, which show pictures of cases in infancy and from 4 to 6 years old, illustrate the actual developmental results of this method.

Operative steps.—The von Langenbeck operation and such modifications of it as I have found most useful may be detailed as follows. Among the most notable features is the absolute control of the field of operation which is afforded by the mouth-gag that I use. This is a Whitehead gag changed to give a better view of the anterior part of the mouth. After paring the fissure borders the muco-periosteal palatal flaps are raised with periosteal elevators of different sizes and bent at different angles, so that the periosteum may be separated from the bone surfaces with the least possible amount of traumatism. Since the slope of the sides of the palate upon each side of the fissure vary in different individuals the direction of the force applied, which is largely governed by the form of the periosteotome, is an important matter. My staphylorrhaphy needles are of different sizes and curves in order to meet the requirements of suture insertion in the anterior, middle, and posterior portions of the palate with the least possible injury to the flap tissue.

One aluminium bronze wire retention suture, with small very thin silver button plates to secure it upon each side, is placed through the central portion of the soft palate. The silver plates are secured by lead shot clamped upon the wire and are so situated as to have the resistance of the thickest part of the muscular tissue of the soft palate. The intervening tissue is less likely to cut and slough if swelling occurs than it would be if included within the loop of a complete suture. The coaptation sutures are of formalised pyoktannin gut. This retains its integrity long enough to permit union to take place, and after that its disappearance is an advantage. There is much difference of opinion with regard to lateral incisions in these cases, and the correct decision in this respect quite naturally depends upon the width of the fissure and the character of tissue involved. But entirely aside from the question of the relief of tension, which is undoubtedly given by liberation of palate tissue in this manner, I am firmly convinced that better speech results are favoured bv incisions on each side downward and backward behind the molar teeth, following as nearly as possible the lines of the muscular raphé, and the carrying of the soft palate muscles bodily towards the central line.

Nasal form important.—Next to the form and character of the tissue that may be obtained as a covering for a palatal fissure by urano-staphylorrhaphy, the most important feature is to secure a good nose. Not infrequently in cases in which the speech improvement has been disappointing, although the appearance of the result of the palate closure was all that could be desired, I have found that an unusually large naris or other nasal defect has been largely responsible for this disadvantage. Much benefit has been given these patients by surgically raising the floor of the nose, reducing the defective form of the cartilaginous wing upon the affected side, and such general intra- and extranasal reconstruction as seemed to be required to aid this portion of the speech apparatus. The effect of this treatment is often exceedingly gratifying to both operator and subject, and it should receive more general attention than has hitherto been deemed necessary. (Figs. 17, 18, 19, 20, 21, 22, 23, and 24.)

Speech relation of age and operation.—There is much to be said upon both sides of the question as to whether the best speech is obtained by palate closure before the child begins to speak or afterwards when wrong speech habits must be overcome. Theoretically it should always be necessary to have the palate fissure closed before the child begins to talk. Practically this is not always so, and the decision depends upon many modifying factors. In order to be on the safe side I make every effort to provide as perfect a palate as possible at a sufficiently early age to make sure that no adverse speech habits have been acquired. Therefore all operative procedures are completed, if possible, before the child is 2 years old, and preferably at 18 months or even earlier. Nevertheless it is true that some of my best results, as evidenced by freedom from the characteristic cleft palate speech sounds, have been secured with patients whose ages at the time of the palate operation varied from 9 to 60 years, and some of the most imperfect speech results have been with patients that were completed before they were 2 years old. The natural conclusion from this, especially when one considers another class of cases in which there is defective speech of similar character due to imperfect form in development of hard or soft palate, although without any indication of a cleft, is that perfection or imperfection in form is of paramount importance and often a more active factor in determining the speech results after cleft palate operation than the speech habit difficulties which have been hitherto considered of first importance.

Milwaukee, Wisconsin, U.S.A.

CASES OF RECOVERY FROM DETACHMENT OF THE RETINA.

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AT a meeting of the Ophthalmological Society in January, 1902, I read notes of a case of recovery from detachment of the retina, and doubts as to the permanence of the cure were expressed by more than one member of the society. I remember that one gentleman said it would be interesting to know what the condition of the eye was in two years. I now republish the case with a further history giving the required information, together with notes of two other cases.

A woman, aged 27 years, first consulted me on Dec. 7th, 1892. She then had a high degree of myopia and large posterior staphylomata in both eyes. Vision: R.E. 6/18 c. $-\frac{2\cdot25\text{ cyl.}}{12\quad\text{sph.}}$; L.E. 6/18 c. $-\frac{2\cdot25\text{ cyl.}}{13\quad\text{sph.}}$. I saw her again on June 23rd, 1894, when the eyes were in the same condition. On August 23rd, 1899, she came with a history of sudden dimness of vision in the left eye, commencing five days previously. She had lost the upper half of the field. There was a large detachment of retina at its lower part, and some vitreous opacity. There was no change in R.E. The patient was ordered to lie down the greater part of the day, and to rub oleate of mercury 10 per cent. into the temple and forehead.

August 30th: There was a good deal of improvement. She could distinguish objects, such as keys, pencils, &c., all over the upper part of the field. Dec. 20th, 1899: L.E. could read J. 14 at 4 inches; field taken by hand movements full all round. May 1st, 1901: Complained of an obscuration in the upper part of the field of the right eye. There was a doubtful history of injury some weeks before. The retina was detached at its periphery below and to the inner side; V. 6/18 corrected. I sent her into Guy's Hospital. On May 2nd she was admitted to hospital. She was ordered to lie down the greater part of the day; to have a vapour bath followed by inunction of 11 drachms of unguentum hydrargyri daily, a mouth wash of chlorate of potash, myrrh, bicarbonate of soda, and borax. On admission, vision, R.E., counted fingers at 12 inches; straight lines appeared wavy, and the ceiling appeared to move in waves. May 13th: Signs of mercurialisation; inunction stopped; vapour baths continued. After bath patient complained that she was almost blind. May 27th: Vapour baths discontinued. June 1st: Patient felt and saw better. Allowed up part of the day. Objects appeared wavy when seen at certain angles. June 10th: Left the hospital seeing better. No note of sight in report, and no field appears to have been taken. She was told to continue lying down the greater part of the day, and not to attempt to use her eyes. No other treatment. June 19th: There was no further change. June 25th: R.E. remained about as it was till June 22nd, when the patient lay down as usual in the afternoon. She went to sleep, and on getting up some hours later found her sight as good as it ever had been before the detachment of the retina occurred, and the bladder, as she called it, which obscured the upper part of the field had disappeared. Ophthalmoscopic examination showed some floating shreds in vitreous and the old posterior staphyloma, but no sign of detachment could be made out. July 17th: R.V. = 6/36 c. $-\frac{2.25\ \text{cyl.}}{11\ \ \text{sph.}}$. Field chart 1.[1] July 31st: R.V. = 6/36 corrected; J. 1 at 8 inches with $\frac{2{\cdot}25\ \text{cyl.}}{6\ \ \text{sph.}}$. Field chart 2. August 21st: V. unchanged. Field chart 3. Jan. 23rd, 1902: 6/24 c. $-\frac{2{\cdot}25}{10\ \text{sph.}}$; J. 1 at 8 inches c. $-\frac{2{\cdot}25}{6\ \text{sph.}}$. Field chart 4: No sign of detachment. Notes were made on Dec. 20th, 1905, May 15th, 1907, and finally Jan. 2nd, 1913. They are practically the same. The last says: R.E. 6/18 c. $-\frac{2{\cdot}25\ \text{cyl.}}{10\ \text{sph.}}$. No sign of detachment. The left eye, sight of which was lost from retinal detachment commencing in 1899, was somewhat shrunken, soft, lens opaque and calcareous, total posterior synechia, and no perception of light.

The following are notes of two other cases of recovery from retinal detachment, and with the case already mentioned include all I remember having seen.

On April 29th, 1884, a woman, aged 30, consulted me complaining of an opaque spot floating before the right eye. There was a blood clot in the retina about half the size of the optic disc and situated above and rather to the left of it; she was myopic, but there were no choroid changes. On May 6th the clot was less; on June 4th it was reduced to about a quarter of its original size. The right had V. 6/18 with $-\frac{30\ \text{cyl.}}{12\ \text{sph.}}$. The left 6/12 c. $-\frac{30\ \text{cyl.}}{12\ \text{sph.}}$. August 12th: The clot had disappeared, but there was floating vitreous opacity and a grey, ill-defined cloud at the lower part of the fundus, probably retinal detachment. Vision unchanged. Ordered mercurial inunction to temple. Eye to be bandaged at night. Atropine drops once a day. Oct. 21st: Retina detached at lower part. Vision: R. 6/24 c. $-\frac{30\ \text{cyl.}}{14\ \text{sph.}}$; L. 6/12 c. $-\frac{30\ \text{cyl.}^*}{14\ \text{sph.}}$. I did not see the patient again till Jan. 14th, 1897, nearly 13 years. The vision was then exactly the same as at her last visit, but with a rather stronger cylinder. There is no note of the detachment. On April 5th, 1898, the vision of the right eye had improved to 6/18 with correction, otherwise there was no change. I did not see her again till May 23rd, 1911, another interval of 13 years. Vision was then R. 6/6 c. $-\frac{2\ \text{cyl.}}{5\ \text{sph.}}$; L. 6/6 c. $-\frac{2{\cdot}50\ \text{cyl.}}{4\ \ \text{sph.}}$ I remembered about the detachment of the retina and looked carefully for it, but could find no sign of it.

A woman, aged 67, consulted me on August 6th, 1890. Three weeks before—in the left eye—she had noticed bright flashes followed by a cob-web, which soon disappeared and was followed by a dark cloud which appeared in the lower part of the field. Large detachment of retina above and to the outer side corresponding with loss of field. R.E., vision 6/12, c. – 1·25 cyl. axis vert 6/6. Treatment, rest, atropine drops, and iodide. October, 1898: Detachment was now below, began about the diameter of the disc below it. The patient had rested six hours a day for two months. July 23rd, 1902: L., field full. Detachment represented by a few pigment spots and some shreds in the lower part of the vitreous. Vision, 6/60°; R.E., 6/12, c. + 1·25 cyl. axis horizontal 6/9. June 7th, 1904: Left eye large vitreous hæmorrhage. R.E., 6/18, c. – 1·25 cyl. axis 70° 6/9. The blood gradually disappeared. On August 24th, 1904, L. vision 6/36; could read J. 6 at 10 inches c. + 3. On March 25th, 1907, R.E. vision 6/18, c. – 1·25 cyl. 6/9; L.E. 6/36, J. 6 c. + 4. On Sept. 25th, 1911, there was no change.

Remarks.—During the last few years the science of ophthalmology has been advanced by leaps and bounds, but it seems to me that in many ocular affections the treatment, so far as it is effective, is about where it was 30 years ago. The cases under consideration are examples of a disease the treatment of which leaves much to be desired, and so far as results are concerned is no better now than it was many years ago. All operative treatment is in my experience worse than useless. I have never seen a case in any way benefited by any of the operations that have been recommended, but I have seen some which have been made worse. The treatment that seems to me to hold out the best, if only a slight hope of cure, is by rest in the horizontal position continued for weeks, and measures which may be supposed to cause removal of fluids—such as sweating, purgation, absorbents, and abstinence from fluid nourishment as far as it is possible to live without it.

I have reported the cases as recoveries from detachment of the retina, which is a fact; but I have grave doubts as to whether the result was due to the treatment adopted or was merely coincident with it.

Brook-street, W.

PERSISTENT LOW ARTERIAL BLOOD PRESSURE IN CARCINOMA OF THE TONGUE WITH AMYLOID DISEASE.

BY H. D. ROLLESTON, M.D. CANTAB., F.R.C.P. LOND.,
SENIOR PHYSICIAN, ST. GEORGE'S HOSPITAL.

THE following case in which the systolic arterial blood pressure was persistently low (never above 90 and usually under 75 mm. Hg) seems to be worthy of publication.

A male, aged 62 years, an accountant in South Africa, was sent home by charitable friends for radium treatment for inoperable carcinoma of the tongue. The disease had started as a small patch on the left side of the tongue three and a half years previously, and had progressed very rapidly during the preceding year so that speech and swallowing had become increasingly difficult. There was no history of syphilis or of excessive smoking. When admitted to St. George's Hospital on Jan. 30th, 1914, he was thin and bronzed, spoke with difficulty, and could swallow fluid food only. The tongue was extensively involved by carcinoma, the left anterior portion being much eroded and the organ practically fixed. At the back the growth had extended to the left anterior pillar of the fauces and to the soft palate. The condition was quite inoperable, and it was thought to be useless to employ radium; but in view of his long journey with this object it was obviously advisable to give him the treatment; and from this he appeared to get some temporary relief. There was some slight enlargement of the cervical glands, but these did not increase in size. The heart was normal. There was general bronchitis on admission, but this cleared up, though there were often some rhonchi over the root of the right lung. There was constantly albuminuria associated with œdema of the feet, at first transient and mainly after he had been up, and slight purpura on the hands. The specific gravity of the urine varied from 1002 to 1022. Casts were not found. There was never any fever, relatively little pain, and weight was remarkably maintained. On admission the weight was 7 st. 4 lb. and 4 days before death 7 st. 4½ lb. The liver and spleen were never found to be enlarged. In June œdema of the legs became more prominent and the albuminuria increased. In July there was not much change until the 17th, when he collapsed and was in great pain. The right leg became livid and cold. He died the next day.

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[1] Charts not published.

* Old system.

At the necropsy, performed by Dr. R. S. Trevor, there was very extensive carcinomatous invasion of the tongue and soft palate, but no secondary growths or gummatous lesions in any part of the body. The inferior vena cava, the right external iliac and the right femoral veins were distended with recent ante-mortem blood-clot. The right leg from the knee downwards was swollen, bright-red in colour, and showed commencing gangrene. The heart, 8 oz., was small and showed brown atrophy. The intestines, kidneys, spleen, and adrenals were amyloid. The liver did not give any amyloid reaction with iodine. Except for the lardaceous change the adrenals appeared healthy.

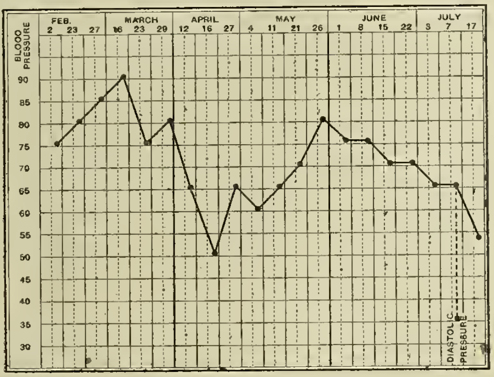

Chart of blood pressure.

Remarks.—The persistent low arterial blood pressure was presumably due to the general asthenia and the amyloid disease, and is unique in my experience, as I have not seen a blood pressure as low as 70 mm. Hg except in cases of advanced Addison's disease and in cardiac failure shortly before death. In otherwise healthy persons during the fever of pneumonia I have seen a systolic blood pressure of 80 mm. Hg. As is shown on the chart, the diastolic blood pressure taken by the auscultatory method on July 7th, ten days before the final collapse, was 35 mm. Hg, with the normal difference of 30 mm. between the systolic and diastolic pressures.

Upper Brook-street, W.

THE PRICE OF DRUGS.—The Pharmaceutical Committee who are advising the Government on the question of the rise in price of various drugs, are holding frequent meetings. The committee consists of Messrs. Edmund White, E. T. Nethercoat, C. A. Hill, John C. Umney, and W. J. U. Woolcock. Information is in the hands of the committee to the effect that the prices of certain drugs are inflated by reason of the action of particular dealers; and recommendations will probably be made that the Government should exercise its powers under the recent Act in order to prevent such inflation.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF GANGLION OF RING FINGER.

BY M. C. S. LAWRANCE, M.B., B.CH. VICT.

THE following case may prove of interest to the readers of THE LANCET.

A woman consulted me some months ago for severe pain in the ring finger of her right hand, which commenced at the tip and spread up her arm, and was so severe as to wake her up at night. It would last several hours, and always commenced with a knock or blow of some sort. She had had the trouble for years, but only lately had it become at all acute.

On examining the finger I could find nothing abnormal in its size, but it was very tender to the touch at the extreme tip, and the nail presented a curious appearance, being raised down the middle by a longitudinal ridge exactly like the ridge produced by folding a piece of paper. I suggested removing the nail, and as she was willing I did so under quinine and urea hydrochloride local anæsthesia and found a small ganglion at the very insertion of the extensor tendon. I scraped this out with a small spoon and she has been completely cured. The skin of the finger sloughed rather badly where I had made the injection, but by using scarlet-red ointment she had quite a good scar and complete movement in her finger.

I discovered later that this particular anæsthetic is apt to cause sloughing where the connective tissue is not abundant, and that it would have been better to have used cocaine. It seems to me a very rare condition to find a ganglion in such a position, and also very curious that it should have been the cause of so much suffering.

Earlestown, Lancs.

A FAMILY HISTORY OF POLYDACTYLISM.

BY A. BANKS RAFFLE, M.D. DURH.

THE following family history of polydactylism presents some features of interest.

A woman having an extra finger on each hand married. She had eight children, none of them showing any abnormality of this kind. One of her daughters had 12 children. Of this family the eldest son and the eldest daughter, the first and third children respectively, both showed the same deformity as their grandmother. The son had two boys, both of whom reproduced the abnormality; the daughter had two female children, one of whom had an extra phalanx. None of the collaterals presented anything of the kind.

This case is in marked contrast to the one reported by me some years ago, in which the polydactylism appeared in one generation without any history in the family, the five older children all showing it, whilst the youngest did not. A note on these two cases from some of the profession who make a speciality of these matters would be of interest.

Red Lion-street, W.C.

Reviews and Notices of Books.

Diagnosis in the Office and at the Bedside; the Use of Symptoms and Physical Signs in the Diagnosis of Disease.

By HOBART AMORY HARE, M.D., B.Sc., Professor of Therapeutics, Materia Medica, and Diagnosis in the Jefferson Medical College of Philadelphia. Seventh edition. Thoroughly revised. Illustrated with 165 engravings and 10 plates. London: Henry Kimpton. 1914. Pp. 548. Price 18*s.*

IN the first edition of this work, published in 1896, the author pointed out that his object was to place before the physician and student the subject of medical diagnosis as it is met at the bedside. The symptoms used in diagnosis were therefore first discussed, and their application to determine the character of the disease followed. The present volume has been brought thoroughly up to date.

The plan adopted is a good one for study after a general knowledge of medicine has been acquired. At the beginning of the book a sound warning is given that in attempting to diagnose a case it is essential that the physician should base his opinion not upon one or two symptoms, but upon a series of them, which when properly considered and put together lead to a right conclusion. An opinion based on one sign or symptom can only result in error.

Amongst the more recent subjects discussed is the estimation of arterial tension. The auscultatory method—by listening with a stethoscope over the tracheal artery whilst the movements of the index of the sphygmomanometer are watched with the eye—is strongly recommended. This enables the physician to estimate the diastolic pressure as easily as the systolic, and thus an advantage is gained over the plan usually employed of ascertaining the greatest oscillation of the column of mercury or of the needle, a point which it is not easy accurately to determine.

This manual will be found useful by senior students and by practitioners as an adjunct to the ordinary text-books. It contains a large number of excellent illustrations which add to the value of the letterpress.

Surgical Diseases and Injuries of the Genito-urinary Organs.

By J. W. THOMSON WALKER, M.B., C.M. Edin., F.R.C.S. Eng., Hunterian Professor of Surgery and Pathology, Royal College of Surgeons of England, 1907; Surgeon to the Hampstead General and North-West London Hospitals, &c. With 24 colour and 21 black and white plates and 279 illustrations in the text. London, New York, Toronto, and Melbourne: Cassell and Company, Limited. 1914. Pp 879. Price 25*s.* net.

WE welcome the appearance of this work, which contains a clear exposition of a section of surgery that has made enormous progress during recent years. It deals with a subject with regard to which many students learn comparatively little during their curriculum, so that it becomes necessary for them to seek for knowledge when in practice. For those who wish to obtain a clear, full, and exact knowledge of the present state of the surgery of the genito-urinary organs no better work can be named. To the student also this book will prove of assistance, enabling him to understand the conditions of any patient suffering from disease of the urinary or genital system whom he may encounter in his hospital work, and it should be of great use in preparing for examinations. The author lays stress on the diagnostic value of the cystoscope and of the X rays, and he demonstrates that the use of collargol injected into the ureters and pelvis of the kidney may furnish us with much information.

A few points in a good book present themselves for criticism. The author does not in most cases indicate very clearly which treatment out of many is in his opinion the best; he describes the various methods that have been employed, but does not indicate which should be chosen. It is always desirable that in works of instruction rather than of theory there should be a certain amount of dogmatism in the advice given, for the student is not in a position to judge between the various methods which are put before him. The number of illustrations is large and they are all good. The coloured plates, especially those showing cystoscopic appearances, are deserving of particular mention.

Dental Microscopy.

By A. HOPEWELL-SMITH. Third edition. With 43 illustrations, eight lithographic plates, and coloured frontispiece. London: John Bale and Danielsson. 1914. Pp. 216. Price 15*s.* net.

THE author is so well known as an expert on dental microscopy that one naturally welcomes a publication in which he gives the methods he adopts in his work. The preparation of the normal tissues are fully dealt with in the opening chapters, and then follow excellent accounts of bacteriological methods, of the injection of capillaries, and of photo-micrography. In the frontispiece and the eight lithographic plates the author has furnished his readers with some neatly executed drawings of the dental tissues. This book we can with confidence recommend to all those interested in the subject of dental microscopy.

Clinique des voies Urinaires—Hôpital Necker. Notions Pratiques d'Electrothérapie appliquée à l'Urologie.

By Dr. COURTADE, of the Clinic of Urinary Diseases at the Hôpital Necker. Paris: F. Gittler. 1914. Pp. 212. Price 10 francs.

THIS is a practical and comprehensive treatise on the suitable methods of electrotherapy in diseases of the urinary system. The first four sections give a useful account of the method of producing the various forms of current and the various physiological effects produced by each. The remaining six sections deal with their application in disease, the pathology of which is sketched out. The action of the application on the diseased condition is well described.

A Manual of Surgical Anatomy.

By CHARLES R. WHITTAKER, F.R.C.S. Edin., F.R.S.E., Senior Demonstrator of Anatomy, Surgeons' Hall, Edinburgh, &c. Second edition, revised and enlarged. With 63 figures in the text. Edinburgh: E. and S. Livingstone. 1914. Pp. 343. Price 6*s.* net.

IN reviewing the first edition of this little book we pointed out one or two instances of careless writing, and we are glad to see that in this issue they are for the most part corrected. There is, however, still a confusion in the topography of the sole of the foot, owing to the author picturing the dissection with the foot reversed from its normal position.

For the rest the book is greatly improved, and much new matter has been introduced. In particular we are glad to see a description of the neglected recto-urethralis muscle, and a better account of pelvic anatomy generally. There is no doubt that the sphere of utility occupied by the first edition of this work will be far better filled by the present improved edition, which is a thoroughly useful work.

MISCELLANEOUS VOLUMES.

A small *Handbook for Infant Health Workers* (London: John Bale, Sons, and Danielsson, Limited. 1914. Pp. 57. Price 1*s.* 6*d.* net), by Mr. R. MANWOOD H. WALFORD, contains some considerations and instructions that may be commended to health visitors and to intelligent parents. The caution to be on guard against the mother taking drugs when suckling is valuable. The directions for artificial feeding, when such is really necessary, are simple. Not everyone will fully endorse the author's remarks concerning the use of the various forms of condensed milk, though he calls attention to the necessity, after 3 months of age, for taking antiscorbutic precautions in respect thereof, such as grape or orange juice. He applies the same caution to the use of sterilised milk. On pp. 34 and 35 he recommends as a treatment for thrush "to tie up a piece of formalin" in muslin or gauze for the infant to suck. Formalin is a 40 per cent. solution of formaldehyde gas in water. Probably paraform is meant, more especially as that substance is a constituent of the formamint lozenge, which is suggested as an alternative.—— A useful little ready reference note-book for nurses is Miss VIOLET YOUNG'S *Outlines of Nursing* (London: The Scientific Press, Limited. 1914. Pp. 32. Price 1*s.* net). It appears to be written, as Miss Margaret Fox, matron of the Prince of Wales's Hospital, points out in the preface, out of a real knowledge of what nurses are likely to need to recall at times when they are unable to refer to larger works—necessary details as to applications, enemata, splints, anæsthetics, surgical asepsis, sterilising, and so forth.—— *The Midwives' Pocket-Book*, by HONNOR MORTEN, L.O.S. Diploma (London: The Scientific Press. Pp. 113. Price 1*s.*, revised edition), contains a good deal of useful information for the midwife. It deals with training schools, the C.M.B. examination, the various obstetric positions and the anatomy of the pelvis, and gives rules for conducting a midwifery case.

That books of the "Aids" type for the study of medicine are well esteemed by the medical student is proved by the number of editions to which they attain. The *Aids to Forensic Medicine and Toxicology*, by Dr. WILLIAM MURRELL and Dr. W. G. AITCHISON ROBERTSON, and the *Aids to Dental Anatomy and Physiology*, by Mr. ARTHUR S. UNDERWOOD (London: Baillière, Tindall, and Cox. 1914. Pp. respectively 153 and 136. Price 2*s.* 6*d.* net each), have severally reached their eighth and third editions. As a means of systematising and coördinating knowledge already acquired and of testing the extent of that acquisition they may be helpful; but if relied on as sources of information the result is likely to be pernicious.——A practical little book for candidates for examinations of the Sanitary Inspectors' Examination Board, the Royal Sanitary Institute and the Board of Education examination in hygiene is the *Meat and Food Inspectors' Examinations* (London: The Sanitary Publishing Company, Limtied. 1914. Pp. 180. Price 5*s.* net), which consists of model answers to the questions set by these bodies, by G. T. BILLING and A. H. WALKER. The first edition was favourably reviewed in THE LANCET of July 23rd, 1911. In the second edition now before us much new material has been added or substituted so as to bring the book up to date.—— *Tuberculosis: Its Cause, Prevention, and Cure* (New York: Thomas Y. Crowell. 1914. Pp. 326. Price $1.25), by Dr. EDWARD O. OTIS, of Boston, is intended for laymen. It discusses in 16 chapters the prevalence, nature, and cause of the disease, inheritance and immunity, its curability and prevention, with the relation of the crusade and the Government thereto, as well as the workshop as a factor in its dissemination. Useful information is given also in regard to injurious occupations, sanatoria, outdoor sleeping, climate, health resorts in Europe and elsewhere, the importance of notification and isolation, dust, the progress of the crusade in various countries, and other matters.

JOURNALS AND MAGAZINES.

The Philippine Journal of Tropical Medicine, Vol. IX., Nos. 1 and 2.—Number 1 contains eight original articles, the first of which gives an account of some experiments carried out by Dr. M. A. Barber, of the Biological Laboratory, Bureau of Science, Manila, from which he concludes that ordinary red ants are possible carriers of Asiatic cholera infection, since they are omnivorous feeders and will penetrate to any food not properly protected from them. Cockroaches, if they have fed on human cholera discharges, may harbour the vibrios in their intestines, and these organisms may appear in enormous numbers in the insect's fæces at least two days after they have fed, and may occur in smaller numbers as long as 79 hours after ingestion.—Dr. Victor G. Heiser, Director of Health in the Philippines, contributes an interesting paper on the reappearance of plague in the Philippine Islands after an absence of six years.—Mr. William H. Boynton, of the Veterinary Division of the Philippine Bureau of Agriculture, furnishes two articles, one being a preliminary report on some experiments as to the cultivation of the virus of rinderpest *in vitro*, the other giving a description of an atypical case of rinderpest in a caraboa (a species of buffalo).—In conjunction with Mr. Boynton, Dr. A. R. Ward, chief of the Veterinary Department of the Philippine Bureau of Agriculture, and Mr. Frederick W. Wood conducted some experiments on the transmission of rinderpest. The two last-named experts also describe a simultaneous method of inoculating cattle and caraboas with antirinderpest serum from animals which have been recently immunised.—The next two articles deal with entamœbiasis, and are contributed by Dr. David G. Willets, of the Biological Laboratory, Manila, the first treating of intestinal parasitism, particularly of entamœbiasis in patients attending the Philippine General Hospital; the second is a preliminary note on the treatment of entamœbiasis with ipecacuanha, emetine, and neosalvarsan, in patients at the above-named hospital.—Dr. R. B. Gibson, jointly with Isabelo Concepcion, of the Laboratory of Physiology of the Philippines University, supplies an article on nerve degeneration in fowls fed on unhusked rice (palay). As a result of their experiments these experts think that the substitution of "rough rice" for the polished variety cannot be completely protective against beri-beri in all individuals, but they do not mean to say that this substitution has not practically eliminated beri-beri where the change has been carried out; they contend, however, that in view of the accumulated evidence the addition of other foodstuffs to a diet of unpolished rice is essential to meet the normal nutrition required by the body.——The second number of Vol. IX. of the journal is devoted entirely to the report of a joint commission of representatives from the College of Medicine and Surgery, University of the Philippines, the Bureau of Science, and the Bureau of Health, on a sanitary survey of the San José Estate and adjacent properties on Mindoro Island, with special reference to the epidemiology of malaria. The locality has for years had an evil reputation, and to place it in a satisfactory sanitary condition and maintain it subsequently in this state will require much well-directed energy and money. As a specimen of the prevailing local conditions it may be mentioned that all the inhabitants, about 300 in number, of one of the barrios or settlements were found to be "dirty, lazy, and diseased." The children had a spleen index of 98 per cent.; a skin disease index of 100 per cent.; a very high incidence of tuberculosis and intestinal diseases, and an infantile mortality rate that was simply appalling. The reporter on this barrio expresses his firm belief that every man, woman, and child in it is infected with malaria, and that everyone of them without exception has scabies; in most instances there is at least one other skin disease also present. The village is surrounded by swamp marshes and is without drainage, the cost of which would in the circumstances be so great in the opinion of the reporter as to be "unjustifiable."

Journal of Anatomy and Physiology. Conducted by Sir William Turner, K.C.B., Professor Alex. Macalister, Professor Arthur Thomson, Professor Arthur Keith, and Professor Arthur Robinson. Vol. XLVIII., Part 4. July, 1914. London: Charles Griffin and Company, Limited. Annual subscription 21*s.* post free.—Embryology is well represented in this issue. Work based upon wax plate reconstructions occupies the bulk of the volume. In connexion with this method of reconstruction Professor E. Fawcett describes and figures a new plate roller, the use of which will do away with much of the mess that usually accompanies the preparation of plates.—The very beautiful stereo-microphotographs of the embryos described by Professor J. T. Wilson, of Sydney, in the last number are included here, and the perfection of their reproduction increases the regret that they are isolated from their text.—Mr. N. C. Rutherford has an important and excellently illustrated Contribution to the Embryology of the Fore-limb Skeleton, based upon the reconstruction models of human embryos of 20 and 30 mm., and the examination of serial sections of embryos from 8 mm. to 25 mm. The author has taken special technical precautions, and it would be well if all who use the wax plate method would follow his example and state exactly what limitations they had placed upon the reproduction of developing and ill-defined tissues. The subject matter is admirably summed up in the author's conclusions, several of which are highly suggestive.—The subject of The Second Visceral Arch and Groove in the Tubo-Tympanic Region is dealt with by Mr. J. Ernest Frazer. The paper forms a continuation of the other valuable contributions made by the author to the study of the development of the branchial region; and it is well illustrated by drawings of reconstruction models of embryos from 12–50 mm.—Dr. J. K. Milne Dickie describes some excellent reconstructions of the Head End of a 20 mm. Human Embryo. The description is comprehensive and forms a valuable picture of the development attained at this stage.—Normal adult human anatomy is represented by Mr. H. Blakeway's paper on the Anatomy of the Palate. This article is written with a regard to the surgery of the region and is a good account of normal naked-eye anatomy, while the drawings reproduced are everything that can be desired as accurate representations of topographical anatomy.—Dr. Douglas E. Derry gives a detailed description of a case of Parietal Perforation in the Skull of an Ancient Egyptian; the causation of this curious perforation is obscure. The same author also describes a New Mylometer.—Dr. Douglas G. Reid continues his studies of the peritoneal folds, and deals especially with the so-called Jackson's Membrane and the Genito-mesenteric Fold.—Comparative anatomy is represented by the valuable study conducted by Miss Jean Meiklejohn on the Intra-cardiac Ganglia of the Rat's Heart. Although the paper deals only with a description of serial sections of an individual rat's heart, the results have been confirmed by the examination of a very wide series of animals. This number contains the index of Vol. XLVIII.

Donations and Bequests.—The late Mr. Frederick George Ivey (a partner in the firm of Messrs. Samuel Hanson and Son, London) left £500 to the City of London Lying-in Hospital, and £500 to St. Bartholomew's Hospital, and after a few special bequests left the residue of his property in equal shares to about 30 charitable institutions, including Lord Mayor Treloar's Cripples Hospital and College and Dr. Barnardo's Homes.—The late Mr. James Grimble Groves, Pendleton, formerly M.P. for South Salford, has left legacies *inter alia* to the Salford Royal Hospital, £1000 for the endowment of a bed; to the Pendlebury Hospital for Children, £1000 for the endowment of a cot; and to the Altrincham Provident Hospital and Dispensary, Market-street, Altrincham, £1000 for the maintenance of the cot which he provided there some years ago.—In consideration of the fact that the London Hospital recently admitted 300 wounded soldiers, Mr. J. A. Fielden has contributed £5000 to the hospital.—Mr. George David Richardson, of London, who died at Southend on August 16th, has left £4000 to the City of London Hospital for Diseases of the Chest, £3000 to the London Hospital, £1000 to the Alexandra Hospital for Children with Hip Disease, Bloomsbury, London, £1000 to the Great Northern Hospital, £1000 to the Royal Hospital for Incurables, Putney, £500 to St. Bartholomew's Hospital, and £1000 to the Royal Surgical Aid Society.

BRITISH MEDICAL ASSOCIATION.

EIGHTY-SECOND ANNUAL MEETING AT ABERDEEN.

THE SECTIONS.

PATHOLOGY AND BACTERIOLOGY.

Wednesday, July 29th.

President, Dr. W. S. Lazarus-Barlow (London).

The President opened a discussion on

The Action of Radiations on Cells and Fluids.

He pointed out that the action of rays must be considered from two widely contrasting points of view, both having important bearings on clinical medicine. On the one hand, the effect of relatively large quantities of radiations was important owing to the probability that radium (and he included mesothorium and X rays) were destined to play a fundamental part in the treatment of new growths. On the other hand, the effect of minute quantities was important, because a claim had been made for their efficacy and the treatment of certain diseases on balneological lines. He pointed out that owing to the better facilities most of the information available in the Middlesex Cancer Research Laboratory dealt with the effect of relatively large quantities, but the fact that he had found minute quantities of radium in carcinoma tissues and in gall-stones associated with primary carcinoma of the gall-bladder, and further that radium was very widely distributed in nature, he held to be indicative that even quantities so small as one hundred-millionth of a milligramme of radium might play a hitherto unsuspected part in disease and health. He reminded the meeting that the experiments of many authors showed that small doses of radiations were capable of inducing cell stimulation, whereas large doses induced cell degradation and death. He held that these experiments proved that radium might be applied in the work of the bacteriologist, hæmatologist, and the pathologist, whether dealing with the cell in health or the cell in disease, and he also touched upon the utility of radium and radiations to the work of the physiologist or pathological chemist, instancing the disintegrative power on H_2O, and the synthetic power in producing ammonia. He had recently examined the effects of radiations upon normal cells of the rat, notably the dry squamous epithelium of the tail, the moist squamous epithelium within the sphincter ani, and the columnar epithelium of the rectum, by inserting the upper part of a tube containing $RaBr_2$ into the rectum and allowing the lower part to protrude from the anus. He ensured that each of these varieties of epithelial cells should be brought into direct action of a constant series of radiations for a definite length of time. At various times after the rats were killed and examination was made for histological changes. Two distinct varieties of exposure were made: (1) with a tube containing 38 mgr. of radium bromide, and (2) with a tube containing 92 mgr. One series of rats was subjected to 38 mgr. for 30 minutes, another series to 92 mgr. for 13½ minutes, and the rats were killed on the first, second, third, seventh, eighth, and ninth days after. From the tables that he had drawn it would appear that after a single exposure with radium the results were different: (*a*) according to the type of epithelial cell under consideration, and (*b*) according to the arrangement of the "quantity X time," factors which went to make up the single application of radium. He showed also that a striking difference occurred in the behaviour of the two varieties of squamous epithelium. The dry squamous cell was seen to be more vulnerable that the moist squamous cell. All these points were determined by the effect of radium in stimulating mitosis. He suggested, however, that differentiations might be made between certain of the life processes of columnar cells, moist squamous cells, and dry squamous cells by means of radium; and that the recognisable histological differences between the types of fibrous tissue designated as subcolumnar (submucous) or subsquamous (subcutaneous) were to be associated with differences in their inflammatory responses to a physical agent. He grouped columnar cells with submucous tissue and squamous cells with subcutaneous tissue as complexes that must necessarily be dealt with in matters of treatment with radium—

e.g., columnar cells, carcinoma, and squamous cell carcinoma), and he deduced from his experiments that in order to produce the maximum injury to epithelial cells and the minimum damage to subepithelial tissues different procedures must be adopted. Indications differed according to the size and situation of the growth; if the growth was small and submucous tissue was in close relation the "time factor" should probably be kept as low as possible, whereas if the growth was large and submucous tissue was relatively at a distance the "quantity factor" should be kept as low as possible, whilst the "time factor" should be raised. In dealing with a total action of radium dose eight times as great as those previously dealt with, he showed that the "time and quantity factors" played the contrasting parts already mentioned. He exposed one rat to 92 mgr. of radium for 108 minutes and another to 38 mgr. for 240 minutes, these doses being identical, considered on the lines of ionisation. The two rats were killed on the ninth day after ionisation, and showed widely different induced changes in the tissues. In the tissues exposed to 92 mgr. for 108 minutes the mucous membrane persisted, though there were inflammatory changes, whereas in the 38 mgr. for 240 minutes specimen the inflammation was such that the mucous membrane in contact with the radium tube and a little beyond had entirely sloughed away. But whereas in the case of the mucous and submucous portion a smaller quantity of radium acting for a greater length of time produced the more profound destructive changes, the exact converse occurred in the cutaneous and subcutaneous portion, where it was seen that the inflammatory reaction and destruction of squamous cells was greater in the case of the rat exposed to the 92 mgr. for 108 minutes. He concluded that undesirable damage was better eliminated by keeping the "quantity factor" of the radium dose high and the "time factor" low in the case of the columnar cell complex, but in the case of the squamous cell complex it was better eliminated by keeping the quantity factor of the radium dose low and the "time factor" high.

Dr. J. O. WAKELIN BARRATT (London) said that the study of radio-activity in relation to living cells raised a large number of extremely interesting biological inquiries, the investigation of some of which involved an extension of the limits of our knowledge of the developmental and functional processes occurring in living cells. The difficulty which was encountered in a large group of investigations was not so much to discover changes in cells as the result of irradiation but to ascertain the significance of such changes as were observed. In the course of his own observations on the effect of various types of radiation upon living cells he had found this difficulty a very real one. An outline of the various types of such changes had already been given in the opening paper; he confined his observations to a very brief reference to a few of the difficulties of investigation which appeared to be, for the moment, the most pressing. Some of the appearances produced by irradiation, which were perhaps the least easy to interpret, were those caused by the formation of darkly staining material, sometimes in relatively abundant amount, in the cell nucleus. At first sight the impression was obtained that this represented paraplastic material, but no conclusive evidence existed that the cell nucleus stored up substances destined for its own use or for that of the body generally, nor was it possible to assign any other structural or functional significance to this darkly staining intranuclear substance. In the cytoplasm changes might occur which were capable of interpretation as evidence of functional disturbance. When such changes, however, were of rapid onset as the result of irradiation another interpretation appeared to be permissible—namely, that the changes in question did not represent a disturbance of function of the cell in the strict sense of the term, but indicated a process following upon death of the cell such as might conceivably be impossible of occurrence during the life of the cell; or it might be that if a similar end result obtained during life the mechanism of its production might be different from that taking place after death of the cell. Thus, in the few cases in which the appearances presented by cells after irradiation appeared capable of interpretation as due to disturbance of cell function, there might arise the difficult problem of ascertaining whether these changes really arose during the life of the cell or only came into being when the cell was no longer living. A further important inquiry was the extent to which acute or subacute changes, following upon irradiation, represented, not functional disturbances or events occurring after cell death, total or partial, but disordered processes of cell growth or indicated disturbance of processes which were incidental to cell reproduction. The consideration of problems of this character was, however, unfortunately as yet, in the absence of fuller knowledge of the nature and significance of developmental and reproductive cell changes, of necessity speculative or conjectural. In this connexion it was of considerable interest to recall the circumstance that in the case of mouse carcinoma the rate of growth of the tumour might be profoundly modified as the result of irradiation. He hoped that, in view of the importance attaching at the present moment to problems of new growth, the above brief survey of some of the difficulties and limitations which attended research into the biological results of exposure of living cells to radiation might be of some slight service by way of indicating a few of the many directions in which investigation was likely to be profitable in the immediate future.

Dr. H. BECKTON (London) stated that while α radiations on the one hand, by their action upon the cells of excised tissues caused diffusion of nuclear chromatin and disappearance of Altmann's granules (Beckton and Russ), β and γ radiations, on the other hand, produced no recognisable histological changes either in excised tissues (whether examined immediately after irradiation or after autolysis for several days subsequent to irradiation) or in small living tadpoles and vorticellæ irradiated to the point of death; and concluded that the marked degenerative changes observed by Morson in the treatment of malignant disease by radium in tubes were dependent upon the intervention of the tissue fluids of the living body.

Mr. A. C. MORSON (London) demonstrated by means of lantern slides some of the different types of malignant growth which were susceptible to irradiation. He also showed the effect of irradiation upon the cancer cell, and pointed out the change which in his opinion must be aimed at so that the patient would derive most benefit from this kind of treatment. His views were based on the experimental work which had been carried out by Russ and Wedd in the laboratories of the Middlesex Hospital, and by Haaland and others in the laboratories of the Imperial Cancer Research Fund, on the immunity produced in normal mice against the growth of cancer by the inoculation of radium-irradiated cancer cells. He was of opinion that the complete destruction of malignant cells within a short space of time by means of radium irradiation did not lead to as satisfactory a result from the clinical standpoint as when the cells were not given an immediate lethal dose, but in some way altered so that they persisted in the body for some months.

Mr. S. RUSS, D.Sc. (London), drew attention to another aspect of radium dosage—namely, if when one type of radiation was used to cause a definite effect on two types of cells and the factor of relative sensibility was found, was this same factor found when they passed to another type of ray? Preliminary observations on these lines indicated that this was not so. He had made a comparison between the cells of Jensen rat sarcoma and staphylococcus pyogenes aureus as regards their susceptibility to the α, β, and γ rays. When submitted to the α rays the cells of the rat sarcoma appeared to be about four times as sensitive as the staphylococci; on passing to the β rays this factor was about 6, and with the γ rays was reduced to about 12.

Dr. C. PRICE-JONES (London) and Dr. J. C. MOTTRAM (London) had made observations on the influence of radium on *in vitro* cultures of mouse carcinoma and rat carcinoma. They distinguished between the spread of tissue at the periphery which could occur in normal non-radiated tissues and the actual increase in mitosis. They decided that growth of *in vitro* cultures consisted of two processes—(*a*) spreading of area of the original mass by extrusion of cells, and (*b*) division of cells by mitosis, and concluded further that spreading might occur quite independently of mitosis. Also that the spreading was uninfluenced by β and γ radiations, but mitosis was profoundly influenced. They thought also that an increase in superficial area in an *in vitro* culture must not necessarily be regarded as growth in the sense of a multiplication of cells by mitosis.

Dr. J. F. GASKELL (London) referred to some experiments made years ago on the development of hens' eggs under a daily dosage of X rays. These experiments tended to show that any radiation first caused a stimulation, then a diminution, finally followed by a compensatory stimulation.

The PRESIDENT, in his reply, pointed out that it was beginning to be clear that the effects of the α, β, and γ rays on tissue cells were different. He agreed with Dr. Gaskell that stimulation occurred with small doses, retardation with large doses, but much depended on the type of cell. On ascaris ova the result was first stimulation, followed by retardation, and after a time followed by a compensatory over-production. Concerning the introduction of radioactive substance in the body fluids, he emphasised the danger of dealing in a way with these emanations, and commented on the boldness of the clinical therapist as compared with the experimental workers.

Dr. C. BROWNING (London) opened a discussion on

Biochemistry of Immunity Reactions.

He gave a general survey of our present knowledge of the subject, recognising the impossibility of covering anything like the whole ground satisfactorily in the time at his disposal. He preferred to use the term "antibody reaction" to immunity reaction, because whether immunity or hypersusceptibility phenomena followed, such reactions *in vivo* might depend on quantitative conditions purely. He pointed out that the results of immunity reactions were in general specific, but the characteristic feature was the fact that the antiserum which brought about the reaction acted only along with the specific antigen, and differed from other sera in that respect alone. Though antigens in constitution were generally foreign proteins, the substances which, according to Abderhalden, stimulated antagonistic ferments included such simple bodies as saccharose, and formed a group distinct from other antigens. He pointed out that the evidence was opposed to the view that isolated lipoids present in protein might affect the antigenic power of the latter. He drew a comparison between normal nutrition and the production of antibodies, and showed that there was no resemblance between them, since in normal nutrition no foreign protein could pass through the intestinal epithelium. The study of the interaction of antigens with antibodies was complicated by the fact that these bodies had never been isolated, but reacted in a complicated mixture of colloids, &c. Discussing specificity, which he described as the prime characteristic of antibody reactions, he pointed out that it could not be explained by such a physical process as adsorption, and, indeed, at times was extremely restricted, as, for example, in the agglutination of particular strains of B. coli, but, on the other hand, a complement deviation test carried out with the same antiserum showed wide group relationships. He pointed out further that chemically altered proteins—e.g., acetylated serum—generated antibodies which reacted only with this compound; species-specificity thereby being lost, and further, that the serum of an animal gave rise to antibodies distinct from those generated by its tissues. No efficient substitute for an antibody had yet been discovered, though colloidal silicic acid could cause hæmolysis together with complement. Discussing complement, it was evident that a true artificial complement had not been produced, nor was there any evidence of its lipoid nature. He held that Abderhalden's reaction still required much investigation. Experiments with hæmolytic sera showed that the production of diffusible ninhydrin reacting bodies did not run parallel with other antibody effects such as hæmolysis—e g., rabbit serum acting on egg-white caused a positive ninhydrin reaction, which was not intensified 7 to 10 days after an immunising dose of egg-white. The production of positive reactions when serum was placed in contact with inorganic substances, such as glasswool, necessitated caution in diagnosing derangement of function of organs by this test.

Dr. F. H. THIELE and Dr. D. EMBLETON (London) brought forward evidence that complement was really a ferment, and held that the whole idea of its acting quantitatively and combining with antigen must be given up. They said that this idea arose simply from the method of estimating its minimal dose. Its activity depended solely on its concentration. If its activity were estimated carefully it was found to act exactly like an enzyme and to follow the laws of unimolecular reaction. The amboceptor acted quantitatively and was evolved from the complement. Its action was that of a sensitiser and determinant of complemen reaction. The toxicity of bacteria was due to the action o the ferments of the tissues of the infected host on the invading bacteria. There was no such thing as true primary toxic endotoxin. On careful examination of clinical material it was seen that there was no true specificity of bacteria and they had conclusively proved that in the serum of animals, dying from any kind of bacterial infection whatsoever, the same toxic substance could be demonstrated This toxic substance was derived from the bacterial protein by proteolytic degradation. The pathogenicity of bacteria depended on the fermentative activity of the tissues of the infected animal to the invading bacteria, and by altering the balance any non-pathogenetic bacterium could be made pathogenic or *vice versâ*. The authors finally discussed the evolution of immunity and showed that it was a gradual process whereby the disharmonious protein was finally acted on in the same way as the protein pabulum of the animal—that is, that the animal had become educated to deal with disharmonious protein as if it were harmonious.

Mr. R. L. MACKENZIE WALLIS (London) dealt with the production of the so-called "protective ferments" of Abderhalden and their relation to immunity. He called attention to the various observations upon which the claims of Abderhalden were based. The results obtained by various observers, including the speaker, in pregnancy and various pathological conditions were detailed, and the bulk of the evidence pointed to the value of the two tests—viz., the polarimeter and the dialysation test—in differential diagnosis. Not only was the principle of value in diagnosis, but it opened up new fields for research. The importance of the tests in the study of the toxæmias of pregnancy was illustrated by reference to some results of the speaker. In conclusion, a new method of isolating the active substance was given which tended to show that the methods of Abderhalden would be more easily applicable.

Major A. G. MCKENDRICK dealt with the action of the compound lysins. A record of an experiment on the action of human serum on horse cells was shown in the form of a chart. The system of coördinates were percentages of amboceptor and complement, and contour lines were drawn through points at which the degree of lysis was constant. He pointed out in the first place that the phenomenon of complement diversion (Neisser and Wechsburg) was present in series of observations in which the ratio of amboceptor to complement was constant, as, for example, in a series prepared by diluting an unheated serum by various proportions of salt solution. This observation controverted the explanation given by Neisser and Wechsburg, and accepted by Ehrlich, and also the theory put forward by Arrhenius, who held that the phenomenon was only apparent when amboceptor was in excess of complement. He pointed out in the second place that the contour lines were continuous, and showed no sign of a limit such as would be required by theories based on the idea of saturation of receptors. As none of the theories at present in vogue agreed with the facts, he had investigated the curves geometrically. A formula had been obtained from which these contour lines could be easily calculated, but which did not at present yield a physico-chemical interpretation. He thought that this difficulty might be due to the fact that in all his experiments he had used a constant quantity of red cells, whereas the phenomenon without doubt depended on the ratio of amboceptor to antigen. The formula had this advantage and use, that it satisfied the two conditions which he emphasised: (1) that the contour lines of equal lysis were continuous into the region of diversion, and (2) that "diversion" might be observed in series of observations with diluted sera in which the ratio of amboceptor to complement was constant.

THURSDAY, JULY 30TH.

A joint session of the Sections of Pathology, Bacteriology and Pharmacology, and Therapeutics was held.

Dr. THOMAS LEWIS (London) opened a discussion on

The Pathology of Heart Function.

He confined his remarks to those curious disorders of the heart's action which were disturbances of the regular sequence of chamber contraction. He pointed out that it was now recognised that the action of the human heart might be disturbed by sinus arrhythmia, heart-block, extrasystole, simple paroxysms of tachycardia, auricular flutter, uricular fibrillation, and alternation of the ventricle, and ccepting this as the foundation for discussion he held that he analysis of disordered heart action had ended, except for few of the rarest and least important disturbances. The econd stage of inquiry was concerned with a search for the auses of the named disorders. He discussed the doctrines f Engelmann's school and compared them with those of askell; he laid stress on the consideration that valuable s was the knowledge of the amphibian and reptilian heart, nd guiding us to a truer appreciation of the more fully leveloped organ, we should never forget that our real business vas with the mammalian heart, and that the basis of pathoogical argument should be a basis of mammalian anatomy and hysiology. He then discussed the question of heart function n its relation to disordered heart beat, and put forth the hesis that we had no direct knowledge of disordered 'rhythmicity," or disordered "conductivity," &c., in the uman heart, using these terms in their special senses, and hat Wenckebach's classification of irregularities of the eart, based as it was upon Engelmann's hypothesis, rested pon an insufficiently secure foundation. He pointed out hat the functional hypothesis had been responsible for many misconceptions, whereas Gaskell's argument, pointing as it lid to specific regions of the heart, gave a safer direction, yet ne questioned whether a purely physiological or purely anatomical basis could serve us in the end After putting forward the view that it was only safe to discuss the pathology on a basis of physiological fact rather than on a basis of physiological hypothesis, he proceeded to discuss some separate disorders of cardiac mechanism, and first dealt with the auriculo-ventricular heart-block. He had no doubt in his own mind that the sequence of the contractions of auricle and ventricle were wholly and normally maintained through the medium of the auriculo-ventricular bundle, and that structural damage, which completely broke this slender tract, was responsible for a number of instances of complete dissociation. Experimental heart-block, he pointed out, could be obtained in one of three different ways: (1) by direct interference with the conducting tracts; (2) by stimulation of the vagus nerve, directly or indirectly; and (3) by the introduction of poisons into, or by altering the metabolites of the circulating blood; and showed that heart-block could be, and was, induced in the human subject by similar disturbances, such as calcareous or gummatous mass invading the tract, or by pressure of the vagus, or in asphyxia when the heart was dying; but it was a moot point whether a long-continued heart-block of high grade could be produced in the human subject by purely nervous or purely chemical influences. Consequently he felt that persistent heart-block of high grade was invariably the result of a local tissue damage, or that there was some cause of heart-block with which we were as yet totally unacquainted. On the other hand, temporary heart-block was to be explained on the grounds of nervous influence or chemical change. In some instances all the evidence supported the conclusion that heart-block produced in one of the three named ways was induced by change in the junctional tissue. He did not think that the suggestion that heart-block could come from a deficiency in the ventricle or inability of this chamber to respond to impulses sent to it by the auricle would be entertained, but that the cause was always to be sought for in the connecting strands. This was supported by his electrocardiographic work. Consequently he put forward for discussion the view that auriculo-ventricular heart-block was conditioned by interference, be it through direct, nervous, or chemical channels, with the auriculo-ventricular conducting system, and especially with the auriculo-ventricular node and bundle. He next dealt with premature contractions and allied disorders of the heart's rhythm, such as paroxysmal tachycardia, auricular flutter, and fibrillation. He held that there was no essential distinction differentiating the run of two or more extrasystoles from a paroxysm of tachycardia which might last for many hours, but that there was clear ground for the belief that the essential influence, which produced the one or the other, was the same, though perhaps exerted in different degree. Clinical and experimental evidence showed the same want of definite boundary between the paroxysmal tachycardia and auricular flutter, here the distinction being chiefly one of heart-rate passing through all gradations. The same conclusion he then applied to paroxysmal tachycardia or flutter and the more complex conditions called fibrillation. He argued from all these facts that all the disturbances of the heart's action, at present under consideration, had the same essential pathology, whose simplest expression was the solitary premature contraction. He said that the key of the most important problems of cardiac pathology would be found when the cause of the solitary extrasystole was discovered. He then passed on to consider the cause of extrasystoles occurring in disease, and to the cause of allied disorders, and confined himself to (1) the relation between the extrasystolic beat and the physiological beat; and (2) the relation of nervous impulses to the extrasystolic contraction. He held that there were clear distinctions between the extrasystolic and the physiological beat, and in his argument he brought forward the following points: (1) The most remarkable character of the extrasystole was its prematurity; (2) the absence of rhythmic tendency; (3) those influences which prompted spontaneous rhythms did not necessarily promote premature contractions; (4) a reaction to the heart nerves was different in the two cases, especially with regard to the vagus; (5) the naturally rhythmic centres were not the centres from which extrasystoles commonly arose; and (6) the physiological rhythm was fastest when propagated from tissue which lay nearest to the superior cava. These arguments supported his proposition that certain of the preparatory processes which preceded the normal contraction on the one hand and the extrasystolic contraction on the other were essentially different, and that those which preceded the latter were of a kind foreign to the physiological heart. He then discussed the various views concerning the rôle of the heart nerves in causing extrasystoles, and summed up with a conclusion that it had not yet been shown that simple interference with the nerves of the heart was alone sufficient to induce any of these disorders as grew to be regarded as of extrasystolic origin. He held that it had not yet been shown that abnormal nerve impulses playing upon a normal heart might be responsible for extrasystoles from the higher types of disorders, but that it had been shown that nervous impulses playing upon a supersensitive or irritable organ could provoke those curious contractions. He then discussed the experiments of Rothberger and Winterberg and those of Goodman Levy. Given certain conditions, sympathetic influences enhanced the pre-existing tendency to extrasystolic treatment and pointed primarily to a disturbance of the heart and not abnormality of the nervous system, and clinical and pathological evidence supported this view.

Sir JAMES BARR (Liverpool) doubted everything that had been done in recent years by the cardiologists, and spent a long time in disparaging the scientific work that had been done from Gaskell's time up to the present. Because every point in the research had not been satisfactorily elucidated, as had already been explained by Dr. Lewis, he refused to accept the definite knowledge that had already proved of such value in its application to clinical work. He made such wild statements as "A good many heart specialists in his time were nearly all dead from heart disease or cerebral softening, possibly because they had taken their own physic." Whilst continuing throughout with his destructive criticism, he found time to elaborate the theory which ascribed excitability to the presence of various chemical products, though it was necessary to quote, in support, other workers in whom he appeared to have almost as much confidence as in himself. To the lime salts especially he attributed effective muscular contraction, and quoted the work of Sidney Ringer and Blair Bell to show the activity of calcium ions. Then he discussed the circulation in general, and advised heart specialists to leave the heart alone and devote their attention to the circulation in the arterioles and capillaries. He then discussed and propounded an elaborate formula for determining the velocity of the blood, and ended by insisting upon the fact that he, with a stop-watch, could calculate the velocity of the blood in the capillaries and veins, and that electrocardiographs or other elaborate appliances were not needed except to impress the patient with the doctor's importance.

Dr. IVY MACKENZIE (Glasgow) associated himself with Dr. Lewis in the opinion that such abstract terms as rhythmicity, irritability, conductivity, &c., should be abolished from the nomenclature of cardiac pathology. He emphasised the necessity of recognising the causes of cardiac failure which were operative outside the heart. Chief among these, he said, were the causes of high blood pressure due to increased arterial and cardiac tonus, as well as those causes of cardiac failure due to affections of the lungs and chest wall. He stated that it was only a proportion of cases of cardiac failure in which interference with the regulation produced the cardiac failure.

Professor J. A. MacWilliam (Aberdeen) said that while the normal heart beat could be shown to issue from the vicinity of the sino-auricular node there was no certain proof that the rhythm actually originated in the specialised or primitive muscular fibres of the node. The linking functions of the nodal structures as mediating between the cardiac nerves and the cardiac muscle were important. Excitability of the cardiac muscle to induction shocks did not necessarily run parallel to the development of spontaneous beats or to responsiveness to physiological contraction impulses arriving from other parts. There was no experimental support to the idea that failure in ventricular sequence might result from a depression of ventricular excitability. He stated that in the condition of fibrillation, alterations in conductivity were in question as well as an exaggeration of irritability—i.e., of that condition which led to the exhibition of premature contractions in various grades. No explanation had as yet been available as to the beneficial effects in many cases of the conversion of persistent auricular flutter into the graver functional disorganisation of working of the cardiac muscle known as fibrillation. Auricular flutter might under experimental conditions be sometimes excited by nervous influences—e.g., removal of vagus control, vagus stimulation under certain abnormal conditions (perfusion with saline fluid containing foreign blood, &c.).

Dr. W. T. Ritchie (Edinburgh) submitted that the conception of the cardiac irregularities held by Wenckebach had advanced our knowledge very materially, and that the time had not yet come to discard Wenckebach's hypotheses. The evidence hitherto brought forward to disprove the functional importance of the auriculo-ventricular bundle as the sole pathway for the conduction of stimuli to the ventricles was not conclusive. In regard to auricular fibrillation, this disorder was probably in part a result of defective conductivity. Further investigation was required regarding the histological features of hearts which during life had been investigated by modern methods.

Dr. A. Goodman Levy (London) said that the occasional ventricular extrasystole occurring in otherwise normal hearts had been regarded as of no pathological significance; whilst generally true, this view should not be invariably adopted. He stated that we must be prepared to find various toxæmic conditions favouring extrasystolic beats which might be only simple manifestations of the more distressing ventricular tachycardias and leading through them, on occasion, to ventricular fibrillation and sudden death. Chloroform in small doses and barium salts might be instanced as such toxic agents, and they presented a similarity in rendering the ventricles "irritable" and liable to exhibit premature contractions when stimulated in certain definite ways. Deaths occurred from the use of adrenalin under chloroform, and ventricular fibrillation was the cause of death under chloroform in general, and that we might look for an extension of this group of irritants, not only among drugs, but likewise in some toxic substances of body origin. The simple extrasystoles which resulted from raising the blood pressure might be regarded as symptomatic and of no important significance, for they did not tend to pass into more prolonged sequences.

Dr. T. W. Griffith (Leeds) commented upon the influence of atropine and nitrite of amyl on the two cardiac functions of rhythmicity and conductivity respectively. In several cases of partial heart block the injection of one-fiftieth of a grain of atropine was followed in a few minutes by the unexpected result that the auricular rate per minute was diminished. This, however, in a few minutes more was followed by an increase in the auricular rate, which went up from about 70 to over 100. The condition of partial heart block disappeared a few minutes after the injection. During the phase of slow auricular action this might, of course, be attributed to the lessened demand made upon the conductive functions of the junctional tissues, but as it persisted during the phase of rapid auricular action it was clear that conductivity was imposed by the action of the drug. Furthermore, as the manifestations of heart block began to reappear while the auricular rate still remained high, it was clea that atropine acted upon the two functions referred t separately. In regard to nitrite of amyl it was also notice that the heart block which had been abolished by the dru began to return before the rapidly acting auricle showed an diminution in its rate. He referred to a case of complet heart block which had lasted for a considerable time, whic suddenly changed to a two-to-one heart block, and finall disappeared completely without this having been produce by the use of any drug, as an answer to one of Dr. Lewis' statements. In another case of partial heart block the condition of auricular flutter had on two occasions manifeste itself for a short period, and had disappeared without th use of any drug.

Dr. F. W. Price (London) said that the essential cause o heart failure lay in the cardiac muscle, one or more of it fundamental functions being impaired. Valvular defects diseased conditions of the blood-vessels, and disturbances o the cardiac rhythm—such as auricular fibrillation—might b considered from two points of view—namely, (1) was th lesion or abnormal rhythm indicative of some myocardia affection? and (2) what effect did it have upon the heart' action? The belief was practically universal that sinu irregularities were of no pathological significance. In hi opinion, when extrasystoles were considered by themselves there was no evidence for supposing that they were eithe indicative of an impaired heart or that they added to th gravity of any existing morbid condition. Pulsus alternans when not associated with abnormal cardiac rhythm, was a indication of extreme exhaustion of the heart muscle, an when the condition was continuous death usually followe within a few months, or at most in a few years. Auricula fibrillation was, in the vast majority of cases, indicative o some myocardial affection; and, further, the change in th heart's action was such that as a rule a marked effect on th cardiac efficiency resulted. He stated that Mackenzie had pointed out that in the consideration of the integrity of th myocardium the most important question of all was the efficiency of the working power of the heart, and that the best method of testing this was to see how the heart responded t effort. He put forward the view that rest was of comparatively greater value in cases in which auricular fibrillation was absent than in cases in which it was present, and further, that digitalis was of comparatively little value in the vast majority of the former group of cases—apart from those exceptional cases in which auricular fibrillation developed during the administration of the drug. In cases of auricular fibrillation accompanied by a rapid pulse it was of the utmost importance to continue the administration of the drug in doses which suited the patient best.

Friday, July 31st.

Dr. W. J. Penfold (London) opened a discussion on

The Variability of Bacteria,

and showed that not only the fermentation appeared but also that the culture and serum reaction were subject to variation. He said that variation and selection had been shown to grow in the blood in the course of infection, and in the laboratory the precise features in the environment effecting the selection had been individually examined. He brought forward evidence to show that the facts so far established affected (*a*) bacterial classification, and (*b*) the recognition of bacteria; standards adopted by the pathologist and clinical bacteriologist, and also the vaccinists whether engaged in immunising patients or in producing systems for a passive immunisation.

Dr. M. C. W. Young (Edinburgh) then demonstrated some specimens which she had on exhibition in the museum illustrating the possibility of artificially modifying a particular type of bacterium and attempted to explain how these modifications were induced. Her object was to bring out the fact that bacterium of any particular type formed merely one stage in a most complicated life-history, part of this history being protozoal in character. Her object was to draw attention only to the protozoal stages which presented themselves either in culture or in artificial media, or in natural serum or pleuritic fluid. She claimed to have demonstrated the existence in apparently sterile fluids of a protist material and a large and well-defined sporoblast in which there developed a bacterium-like body which passed in its natural surroundings back to the rotozoal stages of the cycle, unless the media were xhausted, under which conditions aerobically it grew as a acillus of the subtilis or mesentericus type. In serum or leuritic effusions observed by the dark ground illuminator he had frequently found roundish amœbulæ-like bodies which could be observed to develop into bacilli of the ubtilis type. Similarly she had seen arising from sporolasts staphylococci and streptococci. She had experimented with numerous types of bacteria, and each one had been ransformed into the subtilis type with more or less ease. he had used as media broths of various alkalinity made by dding varying quantities of a 5 per cent. solution of sodium ydrate to ordinary peptone broth. On certain media she ad observed non-motile forms to pass spontaneously into motile forms. She had experimented with anthrax bacillus nd obtained four apparently different staphylococci. She howed a pink staphylococcus which could be transformed irectly into a bacterium on certain media, especially on glucose agar; a subcultivation of this on glucose resulted n the death of the bacillus, but from the culture a coccus ould be obtained. She also dealt with her experiments with he tubercle bacillus of various types, and had obtained marked differences by heating the spores which she claimed o have been derived from the tubercle bacilli. From the human and bovine bacilli she had also obtained a yeast and orula. All her cultures and illustrations were exhibited in he museum.

The **President** called attention to the fact that minute quantities of radium might exist in normal tissues, and he had found experimentally that ordinary laboratory broth sometimes contained an appreciable amount of the element. In view of the pronounced agglutination that Russ and Chambers noted in the cultures of B. diphtheria exposed to radium emanation, the speaker thought the possible effect of variations in the radium content of the culture medium in bringing about some of the bacterial variability ought to be borne in mind.

Dr. E. C. **Hort** (London) drew attention to the necessity for abandoning artificial media for the preparation of vaccines for purposes of treatment. He said the great point was to approximate as near as possible to the natural media of the body in order to imitate the natural processes of cure of infections. For this purpose Dr. Hort and Dr. Ingram had used, in numerous diseases, whole normal human blood as medium of growth and the results had been full of encouragement.

Dr. **Crofton** instanced variations in acne bacillus and leprosy bacillus. He emphasised the importance of autogenous vaccine owing to greatest variation of all—viz., in toxicity—and the necessity of using fresh human blood in cultures.

Dr. **Wilson** mentioned some cases of bacterial variation coming under his observation. In examining the fermentative characters of strains of B. coli isolated from the urine in cases of cystitis and pyelitis he had found a number of colon bacilli which in most cases were unable to form gas from sugars and alcohols, but a few of them were able to produce gas from alcohols but not from sugars. These "anaerogenes" strains occurring naturally were very similar to strains produced artificially by Penfold by giving B. coli on sodium monochloracetate media. He had also observed a B. coli which was able to ferment lactose at room temperature, but which had no action on the sugar at body temperature. As regards morphological alterations he had observed that the streptococcus fecalis when grown on the Drigalski-Conradi medium attained a very large size and became distinctly ovoid in shape. Some experiments showed that this alteration was due to the action of the lactose and crystal violet in the medium. Recently he had isolated a bacillus of the proteus group from a subcutaneous abscess. This micro-organism grew profusely at 37° C., and had the usual morphological and staining characters. When grown at 39° C. the growth was scanty and the culture when stained by Neisser's method showed very well-marked metachromatic granules. This bacillus was Gram-negative and was in no way related to the B. diphtheriæ, yet the appearance of the films was indistinguishable from that prepared with the Klebs-Löffler bacillus. He said that in an outbreak of cerebro-spinal fever in Belfast in 1907–08, out of some 70 strains examined all except five fermented maltose and glucose, but a few failed to ferment both the sugars. In other respects the cocci resembled the diplococcus of Weichselbaum. At the same time Houston and Rankin showed that the opsonins for the cocci isolated from cerebro-spinal fever had little effect on cocci obtained from cases of posterior basic meningitis. In the course of time the meningococci suddenly acquired the character of readily absorbing opsonin and agglutinin from a normal serum, whereas at the start it required a specific serum to produce an opsonic or agglutinative effect.

Dr. C. H. **Benham** (Hove) said that the bacteriologist had this advantage over other observers in that he was able to watch the process of evolution in miniature; the rapidity with which micro-organisms subdivided, as shown by the researches of Dr. Thiele, was so great that it was easy to understand how rapidly these extraordinary variations in type could occur. If the discussion had no other result he hoped that it would lead bacteriologists to pay greater attention to the nature of the medium on which their strains were grown, and he suggested to bacteriologists the desirability of trying their strains of bacteria on media prepared in other laboratories as well as their own, in order to see whether they had the same characteristics under these circumstances. From the point of view of immunisation the discussion certainly emphasised the need for the use of media which approximated as nearly as possible to the tissues of the human body, and also the necessity for using the first subculture for immunising purposes, a point which had been known by vaccine therapists as a rule of thumb for some years. The observations of both Dr. Penfold and Dr. Young were of such importance that he hoped their papers would be read by bacteriologists throughout the world.

Dr. J. H. **Teacher** (Glasgow) described variation in a diphtheroid organism, the original cultures of which were obtained from the uteri or placenta of guinea-pigs which had aborted. He said that the first cultures, whether on agar or serum agar, were quite characteristic to naked-eye and microscopical examination. The culture looked like diphtheria, but by the second day the colonies spread out in delicate crenated margins with white painted centres. They were discrete and hard and rubbed off solidly from the agar, breaking up with difficulty. The bacilli were like B. diphtheriæ but more septate, and on staining by Neisser's method they were less abundantly beaded. In subculture some of the cultures remained fairly constant, but in the majority the colonies lost their sharply defined characters and hardness, the result being a diffuse soft "mucousy" growth. The organisms might be coliform or even coccoid in character, but on inoculation of guinea-pigs the original characters constantly reappeared. In the first culture this process had been observed repeatedly in experiments extending over many months.

Dr. E. C. **Hort** (London) and Dr. W. W. **Ingram** (Dufftown) communicated a paper on

The Recognition of Hæmic Infections of the Urine (its Clinical and Experimental Value).

They said that it was a familiar experience that attempts at blood culture frequently failed even in cases that, owing to the presence of continued fever, were almost certainly suffering from an invasion of the blood stream by pathogenic organisms. Bacteriological examination of the blood in these cases was, in fact, so uncertain in its results that both clinicians and experimentalists were seriously hampered in their work. Clinicians, because they were often at a loss for a diagnosis in diseases where the causal organisms were well known; experimentalists, because they were in many cases unable to discover the causes of disease in which the infective agents were not known. Some other method than bacteriological examination of the blood was therefore much wanted as a supplementary method when this failed. We had for many years known that the causal organisms of typhoid fever and plague frequently occurred in the urine, and were apparently in many cases derived from the blood stream. A systematic study was therefore undertaken of the urine as an indicator of hæmic infection in typhus fever, the secondary infections of tuberculosis, purpura hæmorrhagica, scarlet fever, mumps, lobar pneumonia, bronchopneumonia, meningitis, acute rheumatic fever, infective endocarditis, acute gastric and duodenal ulcer, appendicitis, infective cholecystitis, and pernicious anæmia, as well as in numerous cases of obscure fever without physical signs other than continued fever. In order to illustrate the value of the method full details were given of 20 cases of lobar pneumonia and of 30 cases of typhus fever, special stress being laid on the use of the urine itself as the medium of growth, both for purposes of diagnosis and of preparation of vaccines for treatment. In the authors' experience hæmic infections of the urine were frequently missed if cultures were made on the ordinary laboratory media, which they also found unsuitable for the preparation of vaccines as being too far removed from the media of growth presented by the body. In lobar pneumonia it was found that a diagnosis of the type of infection could be made in a few hours, and in typhus fever it was found that a diagnosis could be made in a few minutes in doubtful cases. In all the cases of typhus fever in which the urine was examined a new organism was found which from inoculation into monkeys and from other tests might prove to be the cause of the disease.

Dr. L. FINDLAY and Dr. BLAIR M. MARTIN (Glasgow) communicated a paper on

The Effect of Daylight and Drying on the Human and Bovine Types of Tubercle Bacilli.

They had suggested the effects of drying alone, light alone, and the combined effect of light and drying upon pure cultures of the human and bovine types of bacilli. By placing weighed quantities of one month old cultures in small sterile test-tubes loosely plugged with cotton-wool and kept in a dark, well-ventilated cupboard, they found little appreciable loss of virulence of either type after seven days' desiccation. They also exposed at a window cultures on egg media sealed with paraffin to preserve water of condensation, and weighed quantities of growth were removed at the desired intervals. They found that within five days there was a definite lowering of the virulence of both types, but most marked in the human, which was avirulent in seven days. Similar cultures were exposed at the window in sterile tubes loosely plugged with cotton-wool, so that definite desiccation occurred. They concluded that with combined diffused daylight and drying within three days there occurred a marked diminution of virulence in both types, but especially with the bovine, and after seven days pathogenicity of both types had gone. They summarised their results as follows:—1. Desiccation *per se* had little effect on the virulence of either the bovine or human type of the tubercle bacillus. 2. Diffuse daylight was inimical to both types of the tubercle bacillus, but when the bacilli were in the dried condition the effect of daylight was more pronounced on the bovine type of the organism. 3. It would appear that the bovine type of the tubercle bacillus loses its virulence more rapidly than the human when distributed naturally in atmospheric dust, and herein might be found a partial explanation of the infrequency of pulmonary infections in man due to this variety of the organism.

Dr. J. CRUICKSHANK (Pollokshields) and Dr. J. MURRAY MOYES (Dumfries) communicated a paper on

The Presence and Significance of Nitrites in Urine.

The reagent that they had used was the Greiss Ilosvay (alpha naphthylamine and sulphanilic acid). They had tested some 600 specimens of urine and substantiated the statement that nitrites did not occur in normal urines, but in patients suffering from mental and other diseases varying quantities of nitrites were found. In about 12 per cent. of the patients in the Crichton Royal Institution nitrites were found, and there appeared to be no relation to the amount of nitrite and the reaction of the urine. In all the positive urines they found Gram-negative bacilli in varying amount, and coliform organisms were obtained in pure culture from these cases. The administration of urotropine in doses of 10 grains three times a day was tested on two patients excreting nitrite with the result that the nitrite rapidly diminished and ultimately disappeared. They stated that as a result of these investigations they were of the opinion that the most common cause of nitrituria was an associated urinary infection, and that the presence of bacilluria should be sought for in all cases. The organisms generally belonged to the coli group and possessed in marked degree the power to split the nitrate of urine into nitrite. The test for nitrite afforded a simple and fairly reliable method of detecting cases of urinary infection without the use of the microscope, provided that the infection was not of such degree as to render the urine markedly alkaline. The occurrence of bacillary nitrituria in a great variety of morbid conditions might in all probability be regarded as an indication of diminished resistance to infection.

Dr. J. M. MORGAN (Pollokshields) and Dr. J. H. TEACHER (Glasgow) communicated a paper on

Aneurysm of the Aorta due to Bacterial Infection.

It consisted really of a demonstration of specimens that were associated with the clinical aspects of the case. The five cases discussed were all due to ulcerative endocarditis, and syphilis appeared to be excluded. Their demonstrations concluded with an interesting statistical record of 1000 successive necropsies, which included 37 cases of aortic syphilis without aneurysm, 21 cases of aneurysms due to syphilis, 5 cases of infective aneurysms, and 22 of dissecting aneurysms. Whilst commenting upon the rarity of such infective cases they thought it desirous to call attention to the fact that aneurysm in the region of the sinuses of Valsalva might be infective and non-syphilitic in origin.

ERRATUM.—Mr. H. M. W. Gray asks us to make a verbal correction in our report of his opening remarks on Anoci-association before the Surgical Section published last week (p. 648). Instead of saying that the wound should be *tightly* sutured, as reported, he said that it should be *accurately* sutured.

THE REPORT OF THE SELECT COMMITTEE OF THE HOUSE OF COMMONS ON PATENT MEDICINES.

(*Concluded from p. 657.*)

THE first portion of this report, which was published in THE LANCET last week, dealt with the law respecting patent medicines in British dominions and foreign countries, and showed the inadequacy of the existing law. This portion of the report also treated of the attitude of the press to secret remedies.

EXAMPLES OF SECRET REMEDIES.

36. In order to show the character of a large class of secret remedies, and at the same time to exhibit the general justification of some of our recommendations, we think it desirable to give in detail a number of facts we have elicited in examination of witnesses. The following examples are taken almost at haphazard, but they are types of innumerable old and new preparations advertised widely throughout the country, and they are constantly being added to. We would draw special attention to the fact that three of the remedies mentioned below (*a*, *b*, and *i*) are the property of witnesses not selected by ourselves, but put forward by the Proprietary Articles Section of the London Chamber of Commerce as representative of the trade in secret remedies.

(*a*) "Mother Seigel's Syrup."—This is one of the most familiar and widely sold secret remedies. The proprietors are A. J. White, Ltd (Mr. White was an American, who died in 1899) of 35, Farringdon Road, London. When the present limited company was formed in 1897 with a capital of £1,000,000, the vendor's profit was £900,000. The capital has since been written down to £300,000. It employs 250 to 350 persons and pays from £30,000 to £40,000 per annum in wages, and a hundred million bottles are said to have been sold It cannot be sold, unless smuggled, in Germany (where it is prohibited by name except on a doctor's prescription), France, Austria, or Italy.

For many years this preparation bore the statement that "an old woman, Mother Seigel, on her last legs with dyspepsia, was given up by her relatives and was allowed to wander in the lanes round her native village in Germany, and that one day she chewed a leaf of a herb only found in those parts, and found immediate relief." Your Committee arrived at the conclusion that every detail of this statement was an invention. There never was a Mother Seigel or this wonderful herb, and the entire story appears to be a fabrication.

This remedy is advertised as "a cure for impurities of the blood," "a cure for dyspepsia and liver complaints," and "a cure for anæmia," and it is described as "a highly concentrated, purely vegetable compound." The statement that it is "purely" vegetable was, we were told by the proprietors, "apparently put in by the advertisement writer without proper consideration." It is incorrect, as the preparation contains hydrochloric acid and borax. It is made up in batches of 200 gallons, and consists, the proprietors state, of a mixture of eleven vegetable substances, and therefore, as previously explained, it cannot be exactly analysed.

We considered "Mother Seigel's Syrup" at great length, regarding it as in many respects a typical secret remedy. To the representative of the proprietors we put no fewer than 1607 questions, and we received much technical evidence concerning its contents from three analysts, and from the Government Chemist and his assistant. The analysis given in "Secret Remedies" was disputed by and on behalf of the proprietors, and was defended by the analyst put forward by the British Medical Association. We think it well, therefore, to give in full the following analysis made for us by the Government Chemist, as this also illustrates our remarks above upon the limits of analysis of preparations containing a number of vegetable extracts.

"The analysis of the sample gave the following results:—

	Per cent. by weight.
Water and volatile acid	57·5
Mineral matters (ash)	5·1
Reducing sugars (calculated as invert sugar)	16·2
Cane sugar	11·0
Organic solids other than sugar	10·2
	100 0

"1. *Organic Ingredients.*—The proportion of sugars in the sample represents about 40 per cent. of treacle. In addition to the sugars, the organic ingredients were found to include:—

Essential oil, having an odour of sassafras...	A small quantity.
Starch	do. do.
Acetic acid	0·66 per cent.
Capsicum, equivalent to about 1 per cent. of tincture of capsicum, B.P.	
Aloes	About 1 per cent.
Other vegetable extractive substances (after deducting 1·4 per cent. of extractives due to treacle)	7·8 per cent.

"We have not found it practicable to separate characteristic constituents, or to obtain characteristic reactions, which would serve to identify definitely any organic ingredients of the mixture other than those mentioned above.

"2. *Mineral Ingredients.*—These consisted of borax, with small quantities of chlorides, sulphates and phosphates, such as occur in the ashes of vegetable substances.

Total boric acid ...	2·12 per cent. (equivalent to 3·26 per cent. of crystallised borax).
Total chlorides ...	1·51 per cent. (calculated as hydrogen chloride).

"3. *Acids*—The volatile acid consisted mainly of acetic acid, with a little boric acid. The total free acid of the sample in terms of hydrochloric acid is 1·12 per cent., equivalent to 10·6 per cent. of the Pharmacopœia 'diluted hydrochloric acid.'

"The proportion of free acid, other than acetic acid, would correspond with 0·72 per cent. of hydrochloric acid, equivalent to 6·8 per cent. of the 'diluted hydrochloric acid' of the Pharmacopœia. Very little of this hydrochloric acid, however, would be actually present in the 'free' condition.

C. SIMMONDS.
JAMES J. DOBBIE.

"Government Laboratory, 21st December, 1912."

This official analysis and that of the analyst for the proprietors practically agree in the percentage of treacle (40 per cent. and 42 per cent.) and of vegetable extractive substances (7·8 per cent. and 8·42 per cent.). From the foregoing the fact emerges that 100,000,000 bottles of an American mixture, originally recommended by an elaborate falsehood, and containing—apart from about 10 per cent. of vegetable extracts, including aloes and capsicum, of whose names, therapeutic virtues, and money value we are ignorant—50 per cent. of water and 40 per cent. of treacle, have been sold at the retail price of 2*s.* 6*d.* for three fluid ounces.

(*b*) "*Daisy*" *Powders.*—These are the property of "Daisy, Limited, Leeds," a company with a capital of £15,000. employing about 40 persons. As at first sold, this medicine, which was originated in this form in 1893 by an unqualified retail druggist, was known as "Daisy Headache Powder," and contained 5 grains of acetanilide. The Board of Inland Revenue decided that this—which was exempt from stamp duty as a "pure drug"—could only be sold by pharmacists or persons holding a Patent Medicine licence, and many of the retailers of the powders were in too small a way of business to pay 5*s.* annually for this, even although the proprietors offered to pay half the cost. Therefore a second identical powder was put on the market, bearing the words "Head Powder," and "Daisy, Limited, Leeds," the label designed to lead the public to think it the same as the original powder. But the Board, after a long correspondence (which was shown to us), insisted that the packets bearing different names must contain different substances. Therefore a "Daisy Headache Powder" still contains 5 grains of acetanilide, but a "Head Powder" of "Daisy, Limited, Leeds," contains 8 grains of phenacetin.

The assets of this Company consist chiefly of the goodwill in the trade name "Daisy" (they informed us that they had also registered the word "Buttercup"), and their business consists in buying acetanilide and phenacetin by the ton, these costing respectively 9*d.* and 2*s.* 11*d.* a pound, and supplying them in 5 and 8 grain packets to retail at a penny apiece. When asked by our medical colleague whether headache might not be a warning symptom of serious diseases, and that therefore merely to remove the symptom might be a dangerous step, the proprietor replied: "I say headache is a pain in the head, and I say that a 'Daisy' powder will remove the ache." The official dose is 1 to 3 grains, and the Codex adds: "Doses of 5 to 10 grains are sometimes ordered, but may cause alarming symptoms." Professor Dixon, M.D., F.R.S., one of the highest authorities upon pharmacology, informed us that acetanilide is a dangerous drug, and he went so far as to say that it "ought never to be given under any circumstances."

(*c*) "*Fenning's Fever Curer.*"—This is advertised in the following terms: "The celebrated Remedy for the Prevention and Cure of Typhus, or Low Fever, Cholera, Diphtheria, Scarlet Fever, Fluxes, Yellow Fever, Influenza, Black Fever, Dysentery, Windy Spasms, Sore Throats, Griping Pains, Low Spirits, Diarrhœa, Small Pox, &c. Sore throats cured with one dose. Scarlet or Typhus Fever prevented or cured. Bowel complaints cured with one dose. Typhus or Low Fever cured with two doses. Diphtheria cured with three doses. Scarlet Fever cured with three doses. Cholera cured with five doses. Influenza cured with six doses." The Government Chemist informed us that this consisted of a dilute solution of nitric acid, flavoured with peppermint. It is sold at 1*s.* 1½*d.* for about 8 fluid ounces. The estimated cost of the ingredients is ½*d.*

(*d*) "*Antipon.*"—"One of the most valuable discoveries in modern therapeutics, solving once and for all the vexed question of the radical cure of obesity without harmful after-effects." A solution of citric acid in water, which we were informed would be without medical effect upon corpulency.

(*e*) "*Vitadatio*"—"Will cure the most severe cases of cancerous growths, tuberculosis, consumption, heart trouble, and tumours." We sent this to the Government Chemist. It is apparently a decoction of bitter herbs, containing only 1·48 per cent. of total solids, and no alkaloids or resins.

(*f*) "*Veno's Lightning Cough Cure.*"—"If it fails, no other medicine will ever succeed." According to the statement of the analyst of the British Medical Association, this contains about 8 per cent. of glycerine, with small quantities of alcohol, chloroform, and resin.

(*g*) "*Mer-syren.*"—"Composed of the active principles of certain rare plants which flourish in the valleys situated on the southern slopes of the Himalaya, between the immense gorge separating Nepaul from Bhutan on the East and Almorah on the North-West." Recommended by "Dr. Pearson, late principal Medical Officer, North Bhangulpore, India." No place named Bhangulpore is mentioned in the Imperial Gazetteer of India. A cure for "dropsy, insanity, small-pox, angina pectoris, diphtheria, erysipelas," etc. No substance but potato starch could be detected by analysis.

(*h*) "*Phosferine.*"—"The greatest of all tonics." A weak solution of quinine in phosphoric acid. Prof. Dixon informed us that this contains no phosphorus which can have a therapeutical effect, and that any other acid to make a solution of quinine would do equally well.

(*i*) "*Steedman's Soothing Powders.*"—These contain, according to the Government Chemist's report, 27·1 per cent. of calomel. The directions for use for children say: "One may be taken for three or four nights successively at any time when the child complains of being poorly." The powders vary in weight, and a child may thus get one grain of calomel for several nights in succession. The toxicologist put forward as a witness by the proprietors admitted that "that is a somewhat tall order." In connexion with this remedy we learned that the pamphlet entitled "Hints to Mothers," accompanying it, and professing to be "by an M.D. London" recommending these powders on every page, was revised by a reputable London doctor, at the request of an advertising agent; that the references to these powders were subsequently inserted without the doctor's knowledge; and that "M.D. London" only meant a doctor living in London, and not, as would naturally be inferred, an M.D. of the University of London. It was not clear to us whether the proprietors and the publishers of this booklet were both responsible for the misstatement.

(*j*) "*Matrozone.*"—Made in a northern seaport, and said to have a large sale in the North of England. The package contains two bottles, each holding one fluid ounce, and sells for 5*s.* 6*d.* The accompanying booklet says: "This treatment is the result of the patient investigation of a Minister of Religion. ...... When a young man pursuing his studies with a view to qualifying for the Medical Profession he was profoundly impressed by the death of a young wife," etc. Its claim is as follows:—"Matrozone Promotes Natural, Rapid, and Easy Confinement. Ensures Healthy, Beautiful, and Bright Children." One bottle contained 68·9 per cent. and the other 60·3 per cent. of alcohol, with total solid matter too small to be weighed, such as might come from diluting the alcohol with tap-water, with no trace of any alkaloid.

(*k*) "*Burgess's Lion Ointment.*"—Advertised to cure tuberculous tumours, piles, fistulas, rheumatism, gout, sciatica, etc. "They are vegetable preparations." The chief ingredient is lead oleate (diachylon plaster), and no vegetable extracts or active principles are present.

(*l*) "Dearborn, Limited," a company founded almost without capital, with one director and two shareholders, employs six persons—a secretary, a typist, two bookkeepers, and two packers. Its business consists in inventing fancy names for preparations (see Par. 38), buying these from well-known manufacturers, labelled with these invented names, and selling them as remedies for short hair, freckles, liver spots, etc., by means of correspondence passing between fictitious persons and real or fictitious correspondents, inserted as, but not marked as, advertisements in popular magazines. Sometimes these are followed by an avowed advertisement, to suggest that what precedes is not an advertisement.

(*m*) "*No-Germo.*"—This was put upon the market, with full-page advertisements in the press, three months ago. It was announced in the following terms: "The wonderful remedy invented by Gertrude, Lady Decies has achieved a well-deserved popularity by its success in curing the most stubborn Colds, Hay Fever and Influenza, Nettle-rash, Eczema, and other Skin diseases. It acts as a soporific in cases of Insomnia; it affords great relief in Asthma; it is a prompt and certain cure for Stings of Wasps, Mosquitoes, and other insects. It is very easy to use and perfectly safe." We requested the Government Chemist to furnish us with an analysis of this, but he felt unable to do so, as its composition had been divulged to him in confidence by the manufacturers in connexion with action by the Customs and Excise. He therefore nominated, with the sanction of the Treasury, Mr. E. J. Bevan, F.I.C., County Analyst of Middlesex, and the latter has furnished us with the following report:

> "'No-Germo' consists of an alcoholic solution containing camphor, ammonia and oil of cinnamon.
>
> "It is conceivable, but unlikely, that there may be traces of other bodies, but I have not been able to discover them. The liquid is slightly yellow, more so than could be accounted for by the amount of oil of cinnamon present, but the difference in colour is most probably due to the prolonged action of the ammonia on the oil of cinnamon.
>
> "Possibly the ammonia is present in the form of sal-volatile, but I am unable to say definitely.
>
> "Beside the sample sent officially, I have examined, in more or less detail, eight other samples that I purchased at various chemists' shops. There is a very large variation in the composition. For example, the alcoholic strength varies from 51·1 per cent. to 64·8 per cent., and there are similar variations in the oil of cinnamon, the camphor and the ammonia.
>
> "The average composition is set out below:—

Alcohol	58·3	per cent.
Oil of Cinnamon	0·5	,,
Camphor	1·03	,,
Ammonia	0·33	,,

> "The approximate cost of one bottle, selling at 2*s.* 3*d.*, is 3·64 pence, say 3¾*d.*"

Of the remedies discussed in this paragraph no person connected with those lettered *c*, *d*, *e*, *f*, *g*, *h*, *j*, *k*, and *m* took advantage of our general invitation to give evidence before us. We have, therefore, had no opportunity of hearing what they had to say in justification of their methods, or in criticism of the statements made to us by other witnesses in reference to the articles sold by them. Persons interested in the remedies lettered *a*, *b*, and *i* appeared before us, and it is only fair to state that they strongly contested the accuracy of the analyses furnished to us of the constituents of their remedies. In dealing with this latter group at some length we have no intention of suggesting that these are exceptionally bad cases. The fact these persons gave evidence creates a presumption that they were better able to face examination of their business and their goods than many others manufacturing secret remedies.

EXAMPLES OF FRAUDULENT CLAIMS.

37. The following are a few examples, which could be multiplied almost indefinitely, of fraudulent claims :—

> "The best remedy for consumption." (*Congreve's Elixir.*)
>
> "Cures Bright's disease." (*Munyon's Kidney Cure*, consisting of sugar only.)
>
> "It never fails to cure cancerous ulcers, syphilis, piles, rheumatism, gout, dropsy." (*Clarke's Blood Mixture.*)
>
> "Bright's disease, stone in the bladder, dropsy, eczema, scrofula ...... can be speedily cured." (*Warner's Safe Cure.*)
>
> "The absolute specific for all, or some, of their phases" of "syphilis and every form of venereal disease." (*Wallace's Specific.*)
>
> "Applied freely will cure lumbago or sciatica in one night." (*Levasco.*)
>
> "Cured not only rheumatism, but anæmia, eczema sciatica, St. Vitus's dance, Spinal weakness, etc." (*Pink Pills for Pale People.* These contain ferrous sulphate, and are one of the many variations of Blaud's pill—the *pilula ferri* of the British Pharmacopœia.)
>
> "The remarkable curative influence exercised in cases of Bright's disease." (*Beecham's Pills.* This statement was made for many years, but was dropped a few years ago.)
>
> "It will be sufficient to offer a few general remarks, and to indicate the method of cure [of syphilis], which is, beyond all, the question of supreme importance. Let it never be forgotten that even a slight delay in dealing with diseases of this type may be terribly fruitful of future trouble. In the first place, the advice of a properly qualified medical man is necessary, whatever the character of the disease, or whether it be hereditary or acquired. But the process of eradicating the poison from the system will be materially assisted by the aid of a perfectly safe, but reliable, searching, cleansing, purgative medicine; and nothing better for that purpose can be used than Beecham's Pills. They should be taken immediately, and continued for a considerable time after the cure is apparently complete." (*Beecham's Pills.* A part of this statement was characterised to us by Dr. W. Perrin Norris, formerly Director of Quarantine and practically Director of Public Health for the Australian Commonwealth, as "from our standpoint, one of the most serious, if not criminal, pieces of printed matter I have ever seen.")

INVENTED NAMES OF DRUGS.

38. A new and ingenious method of defrauding the public by the sale of secret remedies has recently been devised. This consists of inserting a "reader" advertisement—without the suffix "Advt." whenever the newspaper or magazine will consent to omit this—recommending for an ailment or a physical blemish a simple prescription containing one drug or preparation bearing a fancy name, "which any chemist will supply." This is an ordinary drug put up as a proprietary remedy under a fancy name, and sold, of course, at a fancy price. Sometimes these advertisements take the form of "Answers to Correspondents," or are given under the authority of a fictitious person, "Madame Lucie Robert," for instance. Examples of such fancy names are "pure colourless kalamax," "salith leaves," "stallax," "pheminol," "pergol," "pure bisurated magnesia," "boranium," "karox," "pilenta soap," "jettaline," "allacite of orange blossom," "tennaline," "carmarole," &c. These names are all invented words and should properly be printed with a capital initial letter, the proprietors having the exclusive right to their use as trade names. They are, however, printed in these disguised advertisements without capitals, to deceive the public into the belief that they are not proprietary articles, but are familiar drugs purchasable in small quantities at ordinary prices, whereas, in fact, they are only sold in a considerable quantity at a fancy price.

CHANGES IN NAME OR COMPOSITION OF REMEDIES.

39. It is not uncommon for the composition of a secret remedy to be altered without any change in the name. "Anti-kamnia," as we have said, was acetanilide in America, and is now phenacetin, and "Daisy" powders were similarly changed. "Powell's Balsam of Aniseed" was repeatedly proved in courts of law to contain morphine. It now contains none. The same is true of "Mrs. Winslow's Soothing Syrup." The formula of "Pond's Arthriticus" was said to be altered by the addition of potassium bromide and salicylic acid. The powders in one packet of "Steedman's Powders" varied in weight from 1·9 to 4·5 grains. Sir Joseph Beecham informed us that "Beecham's Cough Pills" at one time contained morphia, as that was considered to be a necessary medicinal ingredient; that when the law compelled the word "Poison" to be put on the wrapper of preparations containing morphia, the morphia was taken out of the pills; then so small a quantity was put in again that it was "comparatively innocuous or perfectly innocuous," and therefore did not need to be labelled "Poison." That is, a potent drug was put in this remedy, taken out, and put in again, without regard to its medicinal effect, but solely because of the legal conditions under which it could or could not be sold.

CURE OF SYMPTOMS.

40. We have had occasion to remark upon the possible evil effects of causing the disappearance of a symptom, which may be nature's danger-signal, without affecting in any way the disease which causes it. In this connexion we may also point out that remedies offered for the same ailment—a cough, for instance—may affect it for good or for evil according to its nature and cause. The secret remedy naturally takes no account of this. For example, "Owbridge's Lung Tonic" is an expectorant mixture, a mixture to increase coughing, its principal ingredient being ipecacuanha. Whereas "Keating's Cough Lozenges," or "Beecham's Cough Pills," are the opposite kind of remedy, containing opium or morphia, the object being to stop the cough. A man whose chest is full of fluid needs to have his cough facilitated. A ma with a varicose vein on his uvula needs to have his useless and exhausting cough stopped. Proprietary medicines make no attempt to distinguish between these two common types. Secret remedies, too, ar constantly recommended for different ailments having a superficia resemblance, but medically considered, totally diverse. For example "Beecham's Cough Pills" are recommended as "a safe and simpl remedy" for both asthma and bronchial affections—asthma being nervous disease, while bronchial affections are inflammation of mucou membranes. These examples, which could be multiplied, illustrate th danger of this kind of ignorant self-medication, upon which medica witnesses laid much emphasis.

"CURES" FOR FITS.

41. Advertisements by private persons offering cures for fits ar familiar. With the help of the Chief Constable of Cheshire and th Government Chemist we investigated one of these. The advertisemen read : "Fits.—Clergyman offers prescription for 1*s.* 1*d.*; never fails.—J. S., Grasmere House, Winsford, Cheshire." Three different sets o initials were used at different times. Application brought a prescription for "koronium bromide," and a recommendation to procure it from "the actual manufacturers, Messrs. Whitby & Co., Chemical Manufacturers, Winsford, Cheshire." This was sold at 4*s.* 6*d.* for 4 ounces We procured some, and—"koronium bromide" being, of course, ar invented name—the Government Chemist informed us that it was the well-known drug strontium bromide, often prescribed for epilepsy, and purchasable at rates varying from 2*s.* to 3*s.* 8*d.* a pound. Police inquiries then showed that the advertiser was Harold Cuthbert Whitby, trading in a lock-up shop at Winsford, as "Whitby & Co., Chemists, Opticians and Wine Merchants."

THE TRADE IN ABORTIFACIENTS.

42. The trade in abortifacients presents one of the most deplorable aspects of the secret remedy trade. Innumerable remedies for "female irregularities" are advertised. A few of these are poisonous and have caused death, whilst most of them are wholly inactive for the purpose for which they are sold. Indeed, it cannot be too widely realised that no drug is known which can force the womb to expel its contents, and that nothing can endanger the life of an unborn child except by endangering in an equal degree the life of the mother. But a substance of the latter class is unfortunately widely sold and used in certain parts of the country as an abortifacient. This is "diachylon plaster," the *emplastrum plumbi* of the Pharmacopœia, a preparation of lead oleate, containing 28·9 per cent. of oxide of lead, supposed to be a mild astringent for application to inflamed surfaces One medical witness expressed to us the opinion that for all practical purposes it is perfectly useless. But it is undoubtedly widely taken as a supposed abortifacient in the form of pills like "Mrs. Seegrave's Pills," or merely a bit of the plaster rolled up and swallowed.

Many deaths from the use of this substance for this purpose were reported to us. It can, of course, only produce abortion by producing lead poisoning, from which insanity, blindness, paralysis and death have resulted. The Pharmaceutical Society have for years vainly urged its inclusion in the Schedule of Poisons. The question of the total prohibition of its sale should be considered by the competent authorities.

Blackmail is a natural result of the sale of abortifacients. In 1898 two brothers named Chrimes were sentenced to penal servitude for demanding, under threats of exposure, two guineas from women who had purchased their drugs. The police intercepted in a short time no fewer than 600 letters, each containing two guineas.

Even simple aperient pills from reputable makers are recommended in language suggesting that they are efficacious for this particular purpose. In the instructions headed "Advice to Females" accompanying "Beecham's Pills," women suffering from "any unusual delay" are recommended to take five pills a day. The proprietor admitted in evidence that the most common cause of such delay is pregnancy.

"CURES" FOR CONSUMPTION.

43. Amongst fraudulent secret remedies the alleged cures for tuberculosis are perhaps the worst of all. Sufferers from this disease are, as is well known, peculiarly credulous of promises of help, and the "consumption quack" takes skilful and unscrupulous advantage of their pathetic hopes. Many secret remedies for consumption have been put upon the market, usually at high prices. For example, an American firm known as the Derk P. Yonkerman Company advertised for some years a remedy called "Tuberculozyne," Yonkerman himself being a Michigan veterinary surgeon. A month's treatment by this remedy cost £2 10*s.* The advertisement offered a book entitled "Consumption and How it can be Quickly Cured," of which the following paragraph is typical:—

> "After researches lasting for nearly twenty years, the persistent efforts of Dr. Derk P. Yonkerman have been crowned with success, for his Tuberculozyne treatment has already been proved in hundreds of cases to be a specific of almost miraculous curative power. Its healing virtues have been demonstrated in not only the early stages of consumption, but in far advanced and seemingly hopeless cases as well."

The inventor announced that he had "discovered certain salts of copper of remarkable therapeutic value. The consumption germs cannot live in the presence of copper, and as the Tuberculozyne treatment introduces copper into the blood the consumption germs cannot live." The remedy was contained in two bottles. Analysis showed one bottle to contain 18 parts of glycerine, with water and brown sugar, and the other 3·4 parts of potassium bromide, 12 parts of glycerine and a trace of capsicum, the whole coloured by cochineal. The preparation probably originally contained sulphate of copper when it was prepared in America, but we were informed that such was the chemical knowledge of Yonkerman that he sent his mixture to England in iron drums, the whole of the copper being deposited upon the iron during transport. The importation of "Tuberculozyne" into the Australian Commonwealth is prohibited. We would draw attention to the fact that this remedy is one of a peculiarly bad class, which are not advertised in the press or sold through the respectable retail trade, but constitute what is known as "mail order business."

Another well-known "consumption curer" is a man named C. H. Stevens, who has been denounced in "Truth" for nearly ten years, and against whom an action was brought by a widow in the Basingstoke County Court on July 27th, 1910, to enforce payment of a "guarantee bond" containing an undertaking that money paid for the remedy would be refunded if no cure were effected. The Judge found for the widow, refused leave to appeal, and described the transaction as "an intentional and well-considered fraud."

Our attention was called to Stevens by a letter addressed to the Chairman stating that the writer had seen in a newspaper a report of our proceedings, that he was suffering from tuberculosis and was taking a patent medicine from a London firm who guaranteed a cure, of the name of C. H. Stevens, of Wimbledon, regarding which he asked the opinion and advice of your Committee. After some correspondence this gentleman consented in the public interest to give evidence before us, but on the condition that his name should not be published. He appears, therefore, in the Report of our Proceedings of July 16th, 1912, under the name of Mr. A. His correspondence with Stevens, which he placed in our hands, was, as might be expected, a series of complaints that he was getting no better but rather worse, with assurances from Stevens that persistence in the use of the remedy would certainly effect a cure. At last Mr. A requested the return of the five guineas paid, in accordance with Stevens's guarantee, and finally, under the threat of legal proceedings and after Mr. A had appeared before us, Stevens returned the money. We submitted two bottles of the remedy supplied by Stevens to the Government Chemist, who gave us the following analysis:—

	Sample first bottle. Per cent.	Sample last bottle. Per cent.
Proof spirit...	19·5	19·5
Solid matter	2 8	3·4
Mineral substance (ash)	0·2	0·2
Glycerol (approximately)	10·7	17·8

"No alkaloids or resins were found. The solid matter corresponds with the colouring and extractive substances of an ordinary wine. The samples are therefore essentially mixtures of wine and glycerol." (Glycerol is glycerine.)

It is instructive, as illustrating the credulity of the public, that Mr. A, although an intelligent man, believed that Stevens's lithographed letters were written by Stevens's own hand with reference to his particular case, and that in spite of our efforts to enlighten him, he was obviously still impressed when he left us by Stevens's "challenge" to the Brompton Hospital for Consumptives. This was a request from Stevens to the authorities of the hospital to inoculate him with the worst form of tuberculosis, on the condition that when he cured himself by his own remedies the hospital should adopt his treatment for the cure of consumption. An eminent specialist, Dr. Hector Mackenzie, was good enough to examine and advise Mr. A at our request, without professional charge, and he informed us that in his opinion excavation of the lungs had taken place or extended during the time that Mr. A was taking Stevens's remedies. Stevens was inserting full-page advertisements of his consumption cure in London daily papers last year. We may add that Stevens has recently brought an action for libel against the British Medical Association for statements made regarding his remedy in "Secret Remedies." The defendants pleaded justification, and the jury found for the defendants.

FICTITIOUS NAMES.

44. It is a common practice of vendors of secret remedies to recommend them by the name of a fictitious person. We have already mentioned "Mother Scigel" and "Madame Lucie Robert." Another example is "Mrs. Johnson's Gripe Relief," with which Mrs. Johnson had nothing to do. Another is "Roulet injection" for gonorrhœa, guaranteed by the facsimile signature of "Dr. Roulet," an imaginary person. Other fictitious names that have come to our notice are "Mademoiselle Florence Gauthier," "Mademoiselle Marcelle Rouvier," "Mildred St. Aubyn," "Mademoiselle Agnes Deprés," "Mademoiselle Marguerite Fournier," and "Dr. Duclaud."

PRACTICES OF SECRET REMEDY VENDORS.

45. The most disreputable class of proprietors of secret remedies trade under many aliases. As soon as one name becomes notorious, or when they have exhausted the credulity of the public for one remedy, they assume another name. Thus Crippen, the murderer, "aural surgeon to the Drouet Institute," was also M. Frankel. Elmer Shirley, who is still advertising extensively, has been Keith Harvey, Edward Meyer, the "Sanalak Institute," Marr, and Erasmus Coleman. An American named Skinner was successively Scott, Symond's London Stores, Professor Dana, Professor Pollock, and Horatio Carter. Nelson Lloyd, an Englishman who sold a "fat cure," was in reality an advertising agent named Derry. Two Americans, Virgil P. Neale and Thomas Adkin, were the Cartilage Company, advertising to increase height; as Harriet Meta they sold a "wrinkle eradicator"; as Kathryn B. Firmin, of the Roman Solvene Laboratory, they undertook to remove superfluous hair; and as Everett Wood they offered to make hair grow on bald heads.

46. The wiles of some vendors of secret remedies almost pass belief. Evidence was given to us in private to the effect that an agent of a "kidney cure" went from door to door in the artisan quarters of a northern town, stating that many people were in the first stages of kidney disease without suspecting the fact, but that a sure test was to take a pill which he left with them. If the urine became blue, he explained, that was a proof of kidney disease, which could certainly be cured by taking So-and-So's remedy. The pill contained a blue aniline dye, which of course produced immediately the result mentioned. The widespread alarm caused by this abominable trick may easily be imagined. We were informed that there exist to-day agencies, one in Leeds, which advertises frequently, and one or two in America, selling lists of names of sufferers from various diseases at so much per thousand. That is, a person about to put on the market a "consumption cure" or a "rupture cure," or a "cancer cure," can buy a list of a thousand persons suffering from tuberculosis or rupture or cancer, these lists being the names of people who have at some time answered advertisements regarding these diseases, and whose names and addresses thus possess a money value.

THE MEDICAL PROFESSION AND SECRET REMEDIES.

47. So far as we have been able to discover, no scientific chemist and no qualified medical man, with rare exceptions, is connected with or employed in the manufacture of secret remedies such as those we have placed in class B. And we have failed to find that any new drug, or new discovery of a method of compounding known drugs, has been placed at the service of the public as one of that class of secret remedies. We have learned, however, to our great surprise, that persons of influential social position and small means will sell the use of their names to advertise secret remedies; that large sums of money are expended in canvassing medical men; that many medical men give testimonials (with the use of their medical qualifications but without the use of their names) to proprietary and secret remedies—and allow themselves to be made, as a medical man declared in a public address, "the catspaw and fool of the fraternity of the secret remedy"; and that there are medical men who prescribe to their patients remedies of this class of whose composition they are themselves largely ignorant. We had evidence in two cases of medical men acting as directors of companies manufacturing secret remedies.

THE PATENT MEDICINE STAMP AS AN ADVERTISEMENT.

48. We find that the Patent Medicine Stamp is not infrequently used as an advertisement. For example: "Therapion appears on Government Stamp, affixed to every package by His Majesty's Hon. Commissioners, and without which it is a forgery." And at the head of the booklet sent out by the proprietors of this remedy appears the words: "Protected by His Majesty's Hon. Commissioners," with the Royal Arms. Again: "To prevent spurious imitation of this excellent medicine. On the 24th of May, 1839, Her Majesty's Honourable Commissioners of Stamps ordered the name of 'John Steedman, Chemist,' to be engraved on the Government Stamp affixed to each packet, without which none after that date can be genuine." This was altered three years ago. Again: "To prevent fraud, His Majesty's Commissioners of Inland Revenue have ordered the words 'Lincoln and Midland Counties Drug Company, Lincoln, England,' to be printed in white letters on a red ground on the Government Stamp which is affixed over the cork of each bottle, and to imitate which is a felony. Please note that these words are engraved in the stamp, and the words 'Clarke's World-Famed Blood Mixture' are blown in the bottle." Again: "Caution. The public are requested to notice that the words 'Beecham's Pills, St. Helens,' are engraved on the Government Stamp affixed to every box of pills." Again: "Mrs. Johnson having disposed of the recipe and property in the American Soothing Syrup to Messrs. Barclay and Sons, begs to refer the Public to the Government Stamp with their name thereon as a security to purchasers." The object of these statements is obviously to cause the purchaser to think that the stamp implies some kind of guarantee of value of the remedy, although in recent years the stamp has borne the words: "This stamp implies no Government guarantee." The Inland Revenue authorities print the vendor's name on the stamp for a consideration of £8.

FRAUDULENT APPLIANCES.

49. Much fraud is also successfully practised by the advertisement and sale of appliances as alleged cures for many ailments. Electric belts and pads are a familiar form of these. Macaura's "Vibrator" was a clumsy method, at an exorbitant price, of applying mechanical massage, by which a little good might be done in a few cases and much harm in many cases. Artificial ear-drums of india-rubber, occasionally used by aurists, are sold by manufacturers at 1s. and 2s., but by quacks at from one to two guineas the pair, and often cause positive and serious injury. Appliances alleged to supply oxygen (otherwise than by inspiration), such as the "Oxydonor" and "Oxygenator," are of course deliberate swindles, for the makers cannot be supposed to be as ignorant of chemistry and therapy as their victims.

50. Lest it may be thought that the foregoing examples and remarks place even the worst class of secret remedies in too unfavourable a light, we desire to call attention to a single answer of one witness regarding this trade in general. This was the chief witness put forward by the Proprietary Section of the London Chamber of Commerce on behalf of the trade, Mr. John Charles Umney, managing director of Messrs. Wright, Layman, and Umney, Ltd., an important firm of medicine proprietors and manufacturers of proprietary articles. In addition to this position, his personal qualifications include Pharmaceutical Chemist by examination, Fellow of the Chemical Society, Fellow of the Society of Public Analysts, Adviser in Pharmacy to the Local Government Board of Ireland, Technical Referee on Essential Oils to the Imperial Institute, Past President of the Wholesale Druggists' Association, first President of the Proprietary Articles Section of the London Chamber of Commerce, &c. And the question and answer were as follows:—

> *Chairman:* Do you think, in view of your own position and attainments, and your business in these things, to which I have alluded, as to which you are put forward as a witness on behalf of the whole trade, that so far as a large part of the patent medicine trade is concerned you are a fair representative of it?
>
> *Witness:* I hope I am not.

51. It will probably now be learned without surprise that witnesses of unquestionable authority have assured us that grave evils, urgently requiring remedy, arise from the present sale and advertisement of secret remedies. We may quote the following as examples. As regards diseases arising from sexual intercourse, Dr. Reginald Edward Cross, M.R.C.S., L.R.C.P.: "A very grave and widespread evil, urgently demanding legislative action." As regards aural diseases, Mr. P. Macleod Yearsley, F.R.C.S.: "A widespread and grave evil, which I most decidedly believe requires legislative treatment." Regarding dangerous drugs, Professor A. R. Cushny, M.D., F.R.S., Professor of Pharmacology at University College: "There is urgent need of new legislation." As regards diseases of the skin, Dr. Arthur Whitfield, M.D., F.R.C.P., Physician to the Skin Department, and Professor of Dermatology in King's College Hospital: "The harm done is appalling. ...... There is an urgent demand for legislation." As regards the sale of proprietary and secret remedies in general, Professor Walter Ernest Dixon, M.D., B.Sc., F.R.S.: "The existing law is greatly in need of amendment in the public interest." And on the general question a witness of a wholly different character, Mr. G. Sidney Paternoster, assistant editor of *Truth*, who gave us interesting and valuable evidence from the experience of that journal in pursuing for many years the vendors of fraudulent secret remedies: "There is an enormous evil, which calls for alteration of the law to meet it. ...... There is absolutely no question about it, the public is defrauded of millions in the course of a year, and purely by false statements."

REQUIREMENTS OF AUSTRALIAN LAW.

52. We have already spoken (*see* Par. 6 (1)) of the law of the Commonwealth of Australia, as it affects the importation of proprietary and secret remedies. Some striking instances of the requirements of this

law came before us in evidence, of which the following will be sufficiently illustrative.

The omission of this statement was required from the circular accompanying "Steedman's Soothing Powders":—

> "Thus the commencement of hydrocephalus, tabes, mesenterica, rickets, and other morbid affections may not infrequently be traced to the period of teething."

The same firm was required to print in capital letters on the label:—

> "One powder only and no more."

And they were also required to state on the label:

> "The contents of this package include 27 per cent. of calomel."

In the circular accompanying "Beecham's Pills," when reference is made to kidney troubles, for the statement:

> "Beecham's Pills will probably be the only medicine required to achieve the desired result,"

the following was required to be substituted:—

> "and no other aperient medicine is likely to be required than Beecham's Pills."

And the same proprietor was required to omit the statement regarding "Beecham's Cough Pills." "The cough pills do not contain any injurious ingredient," and the whole of the passage sent out with "Beecham's Pills" regarding "Secret Maladies."

On the label of "Woodward's Gripe Water" this statement occurs:—

> "Celebrated Gripe Water, or Infants' Preservative, for the disorders of children—viz., convulsions, gripes, acidity, flatulency, whooping-cough, and the distressing complaints incidental to children cutting their teeth, allaying the pain, giving instant relief, and rendering this crisis perfectly mild and free from danger"

This was required to be reduced to the following:—

> "For the relief of the simple and familiar ailments of infants and young children, especially during the period of teething."

The following sentences and names are examples of what under the Commonwealth law are regarded as "false trade descriptions," and are therefore prohibited:—

> "Will cure any case of scrofula."
> "Will prevent the return of cancer."
> "An unparalleled remedy."
> "It never fails."
> "Surpasses anything ever discovered."
> "The safest remedy in diphtheria."
> "For all kinds of fevers."
> "Cures any old disease lurking about the system."
> "There is nothing in the world so good for you as —."
> "Lightning Cough Cure."
> "Skin Food."

Synthetic preparations bearing names indicating or suggesting a natural origin or base must have the word "artificial" added. For example, "Balm of Figs," "Fruit Pills," and "Sugar of Milk Pilules."

Fanciful names, like "August Flower," "Dutch Drops," "Orange Blossom," "Asiatic Drops," are not accepted unless supplemented by a description of the nature of the preparation or the maladies it is intended to cure.

Certain drugs, if present in a medicine, must be mentioned on the label and the quantity specified. These are such as the bromides, iodides, chloral, cantharides, phenacetin, &c.

The importation of articles and remedies may be totally prohibited. Among these have been the "Oxygenator," the "Oxydonor," and "Tuberculozyne."

Finally, "trailer" advertisements—that is, printed matter enclosed with one remedy and recommending another; advertisements recommending the regular use of a remedy, as for instance, "One of our pills taken twice a week will maintain you in regular functional activity"; and invitations to correspond, are forbidden.

The foregoing examples will suffice to show how the Commonwealth authorities carry out their aim, namely, "the application of common sense and common medical knowledge, with a view to the protection of the necessarily more or less ignorant public."

"EXHIBITION OF FORMULA."

53. It has been strongly urged upon us, chiefly by witnesses representing the medical profession, that every remedy sold should by law be compelled to bear a label stating its exact composition. This is what is meant by "exhibition of formula," and witnesses advocating it came to us convinced that this simple change in the law would secure adequate protection of the public against injury and fraud. We have given long and careful consideration to this proposal, and we find ourselves unable to recommend it. In the first place, it would beyond question inflict a grave hardship, sometimes amounting to ruin, upon proprietors of secret remedies, or the loss of their investments upon shareholders in limited companies. Any long established remedy in the lawful advertising and sale of which very large sums have been spent would immediately be faced upon the market by a score of preparations advertised as made from the same formula and sold at a much lower price. An example was given to us of a remedy the proprietary rights of which were immediately destroyed by disclosure of its formula. The above would not, we are aware, be a conclusive argument against this proposal if its adoption would really protect the public against danger and fraud. We are convinced, however, that such would not be the case. Any benefit resulting from exhibition of formula must obviously depend for its efficacy upon the intelligence and education of the intending purchaser. It could not in any other way afford protection to the purchaser or restrict the operations of the vendor, though incidentally it would enable a retail chemist to offer the same drug or mixture, made up by himself, at a lower price. But to a large majority of purchasers a statement of composition or contents on the label would afford no information whatever. The disclosure that a remedy contains or consists of "acetyl-salicylic acid," or "hexamethylene-tetramine," or "phenolphthalein," or "taka-diastase," or "emplasrum plumbi," or even "acetanilide" or "potassium iodide," would be meaningless to most people; indeed, the simplest substances might acquire distinction from being described in technical chemical language—soap, for instance, a large ingredient of the most popular aperient pills, posing as "sodium oleate and stearate." And if it be rejoined that the popular name should be required to be given, the answer is obvious that many of the most important drugs, such as most of those mentioned above, have no popular name. Further, an accurate statement of contents might be in itself misleading. For example, if "Phosferine" were stated to contain phosphoric acid, almost every purchaser would believe that he was getting assimilable phosphorus. The question also naturally arises whether the purchaser of a penny powder or a 1*s.* 1½*d.* bottle should protect himself against injury or fraud, or whether the State should not protect him, as it does against other injuries and frauds. For these reasons exhibition of formula (except in the case of alcohol, poisons, and certain dangerous drugs) does not appear to us to be a proper, practical, or effective measure.

SUGGESTED AMENDMENTS OF EXISTING LAW.

54. It has further been suggested to us, and counsel's opinion in support of the suggestion has been laid before us, that existing laws might be so amended as to afford all necessary protection to the public. For example, the advertisement of goods might, by an amendment of the Merchandise Marks Act, be deemed to be the application of a trade description to such goods. A false advertisement would then become an offence under this Act. Again, in the Sale of Foods and Drugs Act the specific omission of patent and proprietary remedies might be deleted, thus making, under Section 20, the label a warranty, and therefore the wilful use of a false label an offence. These amendments would be of some value, but the question of what is a "warranty" is a difficult one in law, and has been subject to numerous decisions of the Courts. In the worst cases, too, a man might have finished his advertising campaign, "cleaned up" his profits, and left the country before the warranty could be enforced. Further, the suggested amendment of the Sale of Foods and Drugs Act would be useless without exhibition of formula, and we have already given reasons for regarding that proposal as inadmissible. We are therefore of opinion that amendment of existing laws, involving complicated legislation by reference, would not afford adequate and available protection. If a change in the law is required, it must be new legislation *ad hoc*. We remitted this important question for further examination to Mr. Guy Stephenson, Assistant Director of Public Prosecutions, whose evidence upon this and cognate legal matters has been of the greatest value to us. In the above conclusion we concur with the view he expressed to us after careful reconsideration. The Indecent Advertisements Act, however, urgently requires amendment, and a satisfactory amending Bill was introduced into the House of Lords by Lord Braye and read a second time on July 12th, 1910.

FINDINGS.

55. After careful consideration of the evidence laid before them your Committee find:—

(1) That there is a large and increasing sale in this country of patent and proprietary remedies and appliances and of medicated wines.

(2) That these remedies are of a widely differing character, comprising (*a*) genuine scientific preparations; (*b*) unobjectionable remedies for simple ailments; and (*c*) many secret remedies making grossly exaggerated claims of efficacy; causing injury by leading sick persons to delay in securing medical treatment; containing in disguise large proportions of alcohol; sold for improper purposes; professing to cure diseases incurable by medication; or essentially and deliberately fraudulent.

(3) That this last-mentioned class (*c*) of remedies contains none which spring from therapeutical or medical knowledge, but that they are put upon the market by ignorant persons, and in many cases by cunning swindlers who exploit for their own profit the apparently invincible credulity of the public.

(4) That this constitutes a grave and widespread public evil.

(5) That in British Dominions and foreign countries severe legal restrictions exist, and that there is a tendency still further to strengthen the law against these articles.

(6) That no Department of State and no public officer is charged with the duty of controlling the sale and advertisement of proprietary remedies in this country; that the Home Office and the Local Government Board are virtually powerless in this respect; that the Privy Council Office, though supposed to be specially concerned with the sale of drugs, has no initiative in the matter, and in fact, it fulfils no useful function in this connexion.

(7) That the existing law is chaotic and has proved inoperative, and that successful prosecution for fraud in the advertisement and sale of secret remedies is fraught with the greatest difficulty, though the Public Prosecutor has perhaps not sufficiently tested the powers of the existing law in respect to such cases.

(8) That consequently the traffic in secret remedies, except as regards scheduled poisons and the grosser forms of impropriety, is practically uncontrolled in this country.

(9) That this is an intolerable state of things, and that new legislation to deal with it, rather than merely the amendment of existing laws, is urgently needed in the public interest.

(10) That grave injury is caused to the public by the existing large sale of medicated wines.

(11) And that while, for reasons already given, it is not desirable to require the exhibition of formula of every secret remedy, nevertheless it is improper that under the protection of the law enormous quantities of alleged remedies should be sold the composition of which is unknown to any person except the manufacturers of them; and that therefore the formulæ of all secret remedies should be required to be communicated to a competent officer appointed under the authority of a Minister of State, but that such formulæ should not be divulged to any other person except as hereinafter recommended.

RECOMMENDATIONS.

56. Your Committee therefore recommend:—

(1) That the administration of the law governing the advertisement and sale of patent, secret and proprietary medicines and appliances be coördinated and combined under the authority of one Department of State.

(2) That this administration be part of the functions of the Ministry of Public Health when such a Department is created, and that in the meanwhile it be undertaken by the Local Government Board.

(3) That a competent officer be appointed to this Department, with the duty of advising the Minister at the head of the Department concerned regarding the enforcement of the law in respect of these remedies.

(5) That there be established at the Department concerned a register of manufacturers, proprietors and importers of patent, secret and proprietary remedies, and that every such person be required to apply for a certificate of registration and to furnish

(a) the principal address of the responsible manufacturer or representative in this country, and (b) a list of the medicine or medicines proposed to be made or imported.

(6) That an exact and complete statement of the ingredients and the proportions of the same of every patent, secret and proprietary remedy; of the contents other than wine, and the alcoholic trength of every medicated wine, and a full statement of the therapeutic claims, made or to be made, and a specimen of every appliance for the cure of ailments other than recognised surgical appliances, be furnished to this Department, such information not to be disclosed except as hereinafter recommended, the Department to control such statement, at their discretion, by analyses made confidentially by the Government Chemist.

(7) That a special Court or Commission be constituted with power to permit or to prohibit in the public interest, or on the ground of non-compliance with the law, the sale and advertisement of any patent, secret or proprietary remedy, or appliance, and that the commission appointed for the purpose be a judicial authority such as a Metropolitan Police Magistrate sitting with two assessors, one appointed by the Department, and the other by some such body as the London Chamber of Commerce.

(8) That the President of the Local Government Board (or Minister of Health) have power to institute the necessary proceedings to enforce compliance with the law, the sale and advertisement of any patent, secret or proprietary remedy, or appliance.

(9) That a registration number be assigned to every remedy permitted to be sold, and that every bottle or package of it be required to bear the imprint "R.N. . ." (with the number), and that no other words referring to the registration be permitted.

(10) That in the case of a remedy the sale of which is prohibited, the proprietor or manufacturer be entitled to appeal to the High Court against the prohibition.

(11) That the Department be empowered to require the name and proportion of any poisonous or potent drug forming an ingredient of any remedy to be exhibited upon the label.

(12) That inspectors be placed at the disposal of the Department to examine advertisements and observe the sale of proprietary remedies and appliances.

(13) That an annual fee be payable in respect of every registration umber issued.

57. Your Committee make the following recommendations regarding the amendment of existing laws:—

(1) That the Stamp Acts be consolidated and amended to remove the numerous existing anomalies and unreasonable exceptions. In this connexion, pure drugs vended entire under a fancy name should no longer be exempt from duty; the distinction between the name of an ailment, and the name of an organ the seat of that ailment, should be abandoned; and the exemption of medicines generating carbonic acid gas should be omitted (*see* Par. 16). Further, any reference in advertising matter to the Government stamp should be prohibited, and no name of a proprietor or firm should be printed upon the stamp.

(2) That the Indecent Advertisements Act be amended on the lines of Lord Braye's Bill.

58. Your Committee further recommend the following legislative enactments:—

(1) That every medicated wine, and every proprietary remedy containing more alcohol than that required for pharmacological purposes, be required to state upon the label the proportion of alcohol contained in it.

(2) That the advertisement and sale (except the sale by a doctor's order) of medicines purporting to cure the following diseases be prohibited:—

Cancer
Consumption
Lupus
Deafness
Diabetes
Paralysis
Fits
Epilepsy
Locomotor ataxy
Bright's disease
Rupture (without opera- or appliance)

(3) That all advertisements of remedies for diseases arising from sexual intercourse or referring to sexual weakness be prohibited.

(4) That all advertisements likely to suggest that a medicine is an abortifacient be prohibited.

(5) That it be a breach of the law to change the composition of a remedy without informing the Department of the proposed change.

(6) That fancy names for recognised drugs be subject to regulation.

(7) That the period of validity of a name used as a trade mark for a drug be limited, as in the case of patents and copyrights.

(8) That it be a breach of the law to give a false trade description of any remedy, and that the following be a definition of a false trade description:—"A statement, design or device regarding any article or preparation, or the drugs or ingredients or substances contained therein, or the curative or therapeutic effect thereof, which is false or misleading in any particular." And that the onus of proof that he had reasonable ground for belief in the truth of any statement by him regarding a remedy, be placed upon the manufacturer or proprietor of such remedy.

(9) That it be a breach of the law—

(a) To enclose with one remedy printed matter recommending another remedy.

(b) To invite sufferers from any ailment to correspond with the vendor of a remedy.

(c) To make use of the name of a fictitious person in connexion with a remedy. (But it should be within the power of the Department to permit the exemption of an old-established remedy from this provision.)

(d) To make use of fictitious testimonials.

(e) To publish a recommendation of a secret remedy by a medical practitioner unless his or her full name, qualifications and address be given.

(f) To promise to return money paid if a cure is not effected.

The Report concludes by registering the belief of the Committee that departmental and legislative action in accordance with such outlines will not inflict injustice upon any patent or proprietary medicine or appliance; that it will, alike by its operative and its deterrent effect, afford the public efficient and urgently needed protection against injury and fraud; and that no measures of a smaller scope will secure this result.

They express appreciation of the ability and tact of Mr. F. C. Bramwell, whose duties as clerk in connexion with a long inquiry have been onerous and delicate.

ANNUAL REPORT FOR 1912 OF THE REGISTRAR-GENERAL.

I.

In the introduction to his seventy-fifth annual report, which has just been published, Mr. Bernard Mallet further develops the scheme foreshadowed in his previous reports for the re-arrangement of the statistical publications of his office. We have already directed attention to certain changes adopted in the volume for 1911,[1] which practically inaugurated a new series. Particular reference was made to the more important of these changes in the hope that, by encouraging discussion, the greatest possible advantage to the public health might be derived from the supplementary information therein for the first time accessible. As the new features embodied in that report appear to have met with general approval they are retained in the present volume. Having reference mainly to the principles of tabulation employed, they necessarily leave untouched both the extent of the data and the methods of their collection. The Registrar-General rightly insists that due progress in these matters can only be secured by a thorough revision of the present system of registration, which would obviously involve legislation. Such legislation, however, is greatly to be desired, not only for statistical but for administrative reasons. This report contains evidence of steadily increasing coöperation between the medical departments of Somerset House and Whitehall, as well as between these and the local officers of health. The classification of death causes adopted by the General Register Office will now be found identical with that of the Local Government Board, and practical uniformity has been secured in the statistical tables authorised for use throughout the public health service. The completion of a fairly satisfactory system of distributing institution deaths has added materially to the labours of the central office. The Registrar-General properly acknowledges the dependence for success of this system on the coöperation of the local medical officers of health, without whose aid the difficulties of the task would have proved insuperable; and it is gratifying to learn that in return for the help voluntarily rendered the plan of distribution has been so arranged that each district medical contributor is to receive a copy of all necessary information respecting the natality and mortality of his own locality. Accordingly, a uniform and comprehensive scheme is now in operation which serves local requirements as well as those of the central office. The above-mentioned concessions will be welcomed by practical sanitarians, and they may indicate the approach of a Ministry of Health as a means for the centralisation of the various State departments controlling the sanitary and Poor-law services.

Vital Statistics.

The detailed analysis of vital statistics has been entrusted to Dr. T. H. C. Stevenson, whose important work contains evidence of skill and commendable care in its elaboration.

The English birth-rate in the year under notice was the lowest on record, the proportion of births to population being only 23·8 per 1000 living, which is below the average rate in the preceding decennium by 3 4 per 1000. The rate of birth obviously varies with the proportion of females of conceptive ages in the community, and with the proportion of these who are married. An interesting table is given showing the changes in these respects recorded at the several census enumerations since 1871. In this table the effective period of female married life—viz., 15-45 years—is divided into four groups, for each of which the changes are shown in the age constitution of the married women. The most remarkable features in this table are the persistence of fall in the proportion of marriages to marriageable persons, and the evidence of the postponement of marriage among women. At the recent census the proportion of women at fertile ages who are married was higher than in 1901, but the proportion of these married women had fallen at each of the three age groups from 15 to 35. Bearing in mind the extent to which fertility diminishes with advancing age, it is obvious that this change alone must have tended materially to the reduction of the birth-rate.

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[1] The Lancet, Nov. 22nd, 1913, p. 1491, and Nov. 29th, 1913, p. 1566.

Fertility in Relation to Age.

The effect of decrease in the fertility of married women—due, in some measure, to their greater average age, but largely no doubt to deliberate restriction of childbearing—is apparently masked to some extent by the net results of other changes in the constitution of the population, so that these cannot be appealed to as helping to explain the fall in the birth-rate. The highest rates recorded for 1912 are those of Wales, ranging up to 28·8 per 1000, and next to these those of the north of England, where the highest rates average 25·8. The rates of the south of England are by far the lowest, in some cases not exceeding 19·5 per 1000. These differences depend on real inequalities of fertility, for when allowance is made for variation in the proportion of married women of fertile age they are still apparent, although in a comparison of legitimate births in proportion to married women the southern deficit is less marked. The high ratios of Wales and of the northern rural districts are doubtless due to the large proportion of miners in the population, the fertility of miners being normally much higher than that of the general community.

Fertility in Relation to Occupation.

Tables are here for the first time presented showing the numbers of children born in relation to the numbers of parents engaged in the various industries. This has been accomplished for the year 1911 with the help of the Census returns. The legitimate births are stated in terms of possible fathers, and the illegitimate in terms of possible mothers. In order to adjust for discrepancies between the occupation returns and the birth registers the fertility rates are shown, not for each separate industry, but for eight industrial groups, the occupations composing which being arranged in descending order of the social scale. Fertility increases progressively from the highest group to the lowest, the figures ranging, among married males under 55, from 119 per 1000 in the upper and middle-class group to 213 per 1000 in the purely unskilled labour group. Particulars concerning the wives of the occupied men are contained in the census schedules, but these have not as yet been tabulated.

The combined ages of husbands and wives are now in course of abstraction for the several industries, and these together with the tabulated statements of surviving children will make possible in future the calculation of fully standardised families for each occupation. These rates will be free from the weakness of those here shown for the births of 1911, inasmuch as due allowance will then be made for differences in the age at which men in different industries marry, as well as for differences between their ages at marriage and those of their wives.

Natural Increase.

The natural increase of the population, or excess of birth-rate over crude death-rate, is shown in a table for the several years since 1876. The fall in the birth-rate of 1912 was accompanied by a still greater fall in the death-rate from that of the exceptionally hot and dry year of 1911. The natural increase rose from 9·8 per 1000 in 1911 to 10·5 in the following year. These two rates are the lowest ever recorded in this country, the next lowest being 11·2 in 1909. As the death-rate in the year under notice was the lowest on record, and the natural increase of the population was also very low, it is evident that the fall in the birth-rate has now reached a point at which it is no longer likely to be fully compensated by the decrease in mortality. During the first few years after 1877, when the birth-rate began to fall, a diminution of natural increase took place. Then for many years this falling mortality compensated for the defect in natality; but in 1911 and 1912 this compensation failed. Moreover, as the falling birth-rate must automatically tend to increase the death-rate by raising the average age of the living, it appears certain that continuance of the fall in the birth-rate will eventually outstrip that in mortality.

Natality and Mortality in Administrative Areas.

In the series of reports initiated in 1911 there will be noticed a feature that has never before appeared—namely, a summary of the most important natal and mortal statistics relating not to registration areas, as formerly, but to every administrative county and district in England and Wales. The same rules and conventions of tabulation having been applied to every area in the list the data will be found generally comparable. Also new to these reports is a table showing the adjusted populations and annual deaths from which the standardising factors have been computed, the object being to furnish students with the means of obtaining standardised rates for any desired combination of areas. Medical officers of health who have ever attempted to compare tables of mortality calculated for different localities by varying methods will doubtless appreciate at their true value statistics dealing uniformly and impartially with all.

Very remarkable is the fall of mortality in recent years which has occurred in almost every European country. In England and Wales the standardised death-rate, which in 1861–70 had averaged 21·3 per 1000, was only 12·9 in the year under notice, the fall since 1895 having been rapid. The death-rate of males exceeds that of females at all ages except those of childhood, when mortality is at its lowest. Up to the year 1860 the excess had been 6 per cent., but for the last 15 years it has averaged 14 per cent. The excess of mortality among males in infancy and from tuberculous phthisis, pneumonia, and violence together amounts to more than the total excess from all causes, which would have been 38 per cent. greater than it actually was but for the mortality of females from child-bearing and from cancer of the generative organs—causes which are almost peculiar to the female sex. During the first year of life the excess in the mortality of males from all causes amounts to 0·761 per 1000 living at all ages, or nearly half the total male excess. In recent years the fall in mortality has occurred at all ages, but it is inconsiderable in old age. In the year 1912 the mortality up to 35 years for males and to 45 for females was at each stage from one-third to one-half of that recorded 50 years ago, but after these ages the fall has been comparatively slight. A striking feature in this report, as well as in its predecessor, is the constancy with which the mortality of both sexes in the North exceeds that of other parts of England. The lowest mortality is experienced by the Midlands and South except at ages beyond 85, when Wales shows to advantage. The most favourable mortality for young children of both sexes is recorded by the South and for the middle-aged of both sexes by the Midlands.

Mortality in Infancy and Early Childhood.

Of the deaths occurring during the year not less than 17 per cent. were those of infants who had not completed their first year of life. In proportion to children born these deaths were equal to 95 per 1000. This rate was below the average in the preceding decennium by 24 per cent. and also below the average in the years 1906–10 by 19 per cent. It was the lowest on record, the proportion of deaths in the nineteenth century having never fallen below 130 per 1000 births. These facts illustrate the rapidity with which infant mortality has recently fallen in England, as it has done in most other European countries. The local incidence of infantile mortality varies enormously. It is considerably higher under the conditions of town than of country life. In the year under review the rate for rural England was exceeded by 14 per cent. in the case of the smaller towns and by 33 per cent. in that of the county boroughs, but only by 12 per cent. in the case of London. The small excess in London shows how largely the adverse influence of urban surroundings on infant life may be avoided. The feature of chief interest in this connexion is the peculiarity of the geographical distribution of infantile mortality. In both sexes it was highest in the North and lowest in the South, the position of the Midlands being intermediate. Even in northern rural districts a higher death-rate than in London was experienced, the excess in the male sex not being compensated by any advantage in the female. Infantile mortality is highest in the smaller Welsh towns, but in other respects the position of Wales is similar to that of the North of England.

(To be continued.)

THE LANCET.

LONDON: SATURDAY, SEPTEMBER 12, 1914.

The War and the Health of the Country.

DURING the past month many annual and interim reports of medical officers of health from all parts of the country have reached us, some of which have been already reviewed or noted in our columns, while others will receive detailed attention as opportunity offers. A bird's-eye view of these reports shows on the whole a most satisfactory condition of the health of the country, the more recent accounts substantiating the messages of the annual statements, and this is a matter of high national importance in view of the present situation. In the wake of the European war there must follow, even in this so far favoured territory, unemployment, misery, poverty, and sickness; while there is also increased liability to the introduction of those diseases from without, which are commonly associated with a state of war. Great Britain, on the declaration of war, was, as regards the public health, in the position of those fortunate business men whom the outbreak found in possession of a large sum of ready money to meet the extraordinary demands of collapsing credit. There is shown in these reports in the main a drop in the death-rate and no undue prevalence of zymotic diseases, and it is probable that in some localities favourable conditions have been brought about by the good work that has been done in the way of public instruction. This taking of the public into hygienic confidence is a praiseworthy symptom of modern local government, and it is right that a similar policy should be employed with a direct eye on existing conditions. Mr. J. H. MARSH, the medical officer of health of Macclesfield, for instance, has given his locality some judicious instruction, along the lines suggested in these columns, as to economic forms of nutriment and the way in which to use them to the best advantage. Mr. GEORGE ADKINS, medical officer of health of Devon, has issued some plain instructions on safeguarding water supplies, on removal of refuse, on the storage of food, and the cleaning of dwelling-places. Dr. A. E. A. CARVER, of Birmingham, has recently addressed a lecture to women on the question of food values, in which he drew special attention to the feeding of children, and no more important information can be made public by the medical profession than that which assists parents to rear their offspring. It is extremely satisfactory to feel that as a nation we are starting on this long struggle with the general sanitary conditions in our favour. There is no doubt that we shall as a community require during the period of the war all the watchful care that the medical profession and the sanitary service can possibly give us, and it is the duty of every citizen to help to the best of his ability.

There is a side to the situation which, in their laudable desire to do all that is possible for the country in the time of war, our younger medical practitioners may lose sight of. All want to do their best, but all conceive that their best is "to get to the front" as medical men, or, failing that, to join the ranks as soldiers. It cannot be too emphatically stated that there may be a great strain upon the medical profession in the near future, and it is absolutely necessary that the population should be attended to, so that the country may be free from apprehension with respect to the general public health. Excellent arrangements are being made in different parts of the country whereby the practices of medical men who are with the colours should during their absence be looked after by their colleagues, and these and other factors have already conduced to the absence of a great many members of the medical profession from their usual places of employment. Added to this, the depletion of our hospital staffs is considerable, although the gaps are being adequately filled by those who for one reason or another are unable to give direct service themselves, though only too happy to replace younger men who have the better fortune to be eligible to serve with our forces. There has consequently been no shortage of medical men that has led to any untoward results as yet, but we would quite gravely repeat here the words which Sir WILMOT HERRINGHAM has recently addressed to the students of his own hospital when warning them that the ordinary medical work of the country has to be carried on. "Most men," says the Vice-Chancellor of the University of London, "cannot leave their regular practice, and are doing far the best for the country by sticking to it. Students who are near their qualification had much better get qualified as quick as they can, and volunteer afterwards. Those who have advanced less far in their studies should, in my opinion, go on with them unless some clear opportunity comes in their way. The needs of the country are what we are all thinking of, and I am sure that it is of the greatest importance first that the civil hospitals should not be hampered by lack of clerks and dressers, and, second, that the usual supply of medical men should not be diminished by students hastily rushing off, though with the best of motives, to other work." [1]

A similar warning has reached us from an influential correspondent in Scotland, who says that, while the Scottish Medical Service Emergency Committee was at the beginning of September just able to supply deficiencies in civilian practice of all sorts, a busier time will lead to a great strain unless the young medical men of the country can be impressed with the fact that the civil population must be attended to as well as the military. It appears that there are in Scotland as well as in England a certain number of young medical men who are waiting for commissions, and for the present doing nothing else. If this is so we would impress upon them the necessity of turning their hands to any work that comes until they receive the anticipated call, expectation of which should not leave them idle.

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[1] St. Bartholomew's Hospital Journal, September, 1914.

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The Report of the Select Committee on Patent Medicines.

THE report of the Select Committee on Patent Medicines, supplemented by the evidence on which the recommendations are based, constitutes the most complete and the only systematic exposure of the abuses of this form of quackery that exists in the English language. A large mass of invaluable material bearing upon the evils associated with the secret traffic in remedies has been collected and published in America, and a fearless review of the whole subject was issued by an Australian Royal Commission seven years ago. But important as these publications are they are overshadowed by the work accomplished by the Select Committee which was appointed by the House of Commons "to consider and inquire into the question of the sale of patent and proprietary medicines and medical preparations and appliances and advertisements relating thereto; and to report what amendments, if any, in the law are necessary or desirable." Those who followed the course of the inquiry, and especially those who heard the evidence of the string of witnesses representing the proprietary medicine interests, will not be surprised at the committee's conclusions; while it is not too much to say that the case for secret remedies suffered more severely from the defence than the attack, notwithstanding the device that was adopted by the proprietors of such goods in putting up several witnesses of undoubted reputation to advocate their cause. One of these witnesses, when asked by the chairman whether he was a fair representative of the patent medicine trade as a whole, very properly made the admission: "I hope I am not"; while as to some of the others—the actual proprietors of medicines out of which fortunes have been made by methods that the committee describes as fraudulent—they were condemned out of their own mouths. We complete this week the publication of the full report,[1] for no extracts adequately show its force. The examination of representatives of Government departments and various legal authorities revealed the fact that the existing abuses are due to a state of lawlessness, since "for all practical purposes British law is powerless to prevent any person from procuring any drug, or making any mixture, whether potent or without any therapeutical activity whatever (so long as it does not contain a scheduled poison), advertising it in any decent terms as a cure for any disease or ailment, recommending it by bogus testimonials and the invented opinions and facsimile signatures of fictitious physicians, and selling it under any name he chooses, on the payment of a small stamp duty, for any price he can persuade a credulous public to pay." In these circumstances it is not surprising that something like three million pounds sterling is spent each year in this country on secret medicines, or that individual firms, engaged in a traffic practically uncontrolled by law, have accumulated enormous fortunes. It has never been asserted by any responsible body that all proprietary remedies are objectionable, and the statement in the report that these medicines differ in character from "valuable scientific preparations" to a "mere vulgar swindle" can be corroborated by all who have studied the question. At one end of the scale is the large group of genuine drugs, originally produced synthetically, or extracted from crude compounds by skilled chemists and tested by therapeutists, and manufactured in pharmacological laboratories; and at the other end are remedies for which grossly exaggerated or mendacious claims are made.

When at some future date the Legislature can return to the performance of its normal functions, one of the most useful tasks lying to its hand should be to embody in an Act of Parliament the recommendations of the Select Committee. They are in every case recommendations which can be considered and enforced without reference to the dictates of party politics, and they make no demand for the construction of complicated administrative machinery, although they propose that a duty of the State, hitherto ignored and assigned to no department, shall be performed by the Local Government Board, or, when such a department is brought into being, by a Ministry of Public Health through a competent officer appointed for the purpose. This duty of the State, which has long lain before unnoticing eyes, is, we need hardly say, the protection of the public health and of the public pocket from the depredations of a horde of traders whose machinations have brought misery on every side. There must be a considerable lapse of time before legislation will ensue, but it will be of advantage to the public if medical men consider the suggestions of the committee closely, so as to be able to lend the movement for reform their full support. In one particular of undeniable importance the report will disappoint those who as a matter of principle condemn any State recognition or legalisation of the sale of secret remedies. We refer here to paragraph 53 of the report, headed "Exhibition of Formula," and to the recommendations affecting this branch of the inquiry. The committee does not see its way to ask that every remedy sold should be legally compelled to bear a label stating its exact composition, and the reasons which it states in justification of its views are entitled to their full weight, even if we may not altogether accept the conclusion reached. The committee advises that an exact statement of the ingredients and the proportions of the same of every proprietary remedy and kindred article, with full therapeutic claims, shall be lodged with the new department to be instituted in connexion with the Local Government Board. The information thus furnished is to be checked by the department, which is to have the power to make the necessary analyses, and to enforce compliance with the law before a special court constituted in the public interest to permit or to prohibit the sales or advertisements of any proprietary remedy. We are not without hope that Parliament may go beyond the recommendations of the committee, even if the general disclosure of formulæ, a course which has been strongly urged by the medical witnesses in the course of the inquiry, cannot be adopted.

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[1] THE LANCET, Sept. 5th, p. 653, and Sept. 12th, p. 702.

It is proposed that all advertisement and sale of medicines, except, of course, under a doctor's order, shall be forbidden when they purport to cure cancer, consumption, lupus, deafness, diabetes, paralysis, fits, epilepsy, locomotor ataxy, Bright's disease, and rupture without operation or appliance. This provision by itself will put out of bounds entirely some of the happiest hunting grounds of the fraudulent, and we can surmise that, following existing precedents, the above list will appear in a schedule to any Act of Parliament which may ensue, power being given to the department to make additions to the list. It will be noticed that venereal disease has not as yet been included in the list. The committee desires, however, to see prohibited all advertisements of remedies for diseases arising from sexual intercourse or referring to sexual intercourse as well as all advertisements likely to suggest that a medicine is an abortifacient. It is also recommended that medicated wines should not have the advantage of any secrecy so far as the proportion of alcohol contained in them is concerned. The committee finds that there can be no doubt that many persons acquire the "drink habit" by taking these wines and that grave injury is caused to the public by the existing large sale. It will also be observed that vendors of those remedies which remain secret will have to conform to a discipline which should restrict the activities of the more disreputable among them considerably. We refer more particularly to the examination which will be made of the therapeutic claims put forward by them. Often the advertisements of patent remedies recommend their use for cases which they cannot benefit, thus causing the purchaser to run the risk of serious injury through not securing medical treatment in time. With regard to the non-secret preparations which owe their value to skilful combination, the committee finds, naturally, that there is nothing in connexion with these products calling for interference.

The whole range of patent and proprietary remedies and appliances are dealt with in this report, and as a perusal of the findings and recommendations will show, measures are suggested for restricting and regulating their sale. All thinking people will welcome the adoption of the recommendations that a Ministry of Public Health should be created, part of whose duty it would be to regulate the traffic in proprietary medicines, and that the formulæ of all secret remedies should be required to be communicated to that department, as well as the proposal that a special commission should be constituted with power to prohibit the sale and advertisement of such remedies as are contrary to the public interest. The proposal to prohibit the sale of "cures" for incurable diseases and the special measures suggested for the suppression of the sale of abortifacients represent the least that can be done to abolish an intolerable state of affairs. With the opinion of the committee that no measures of smaller scope than those suggested will secure for the public efficient and urgently needed protection against injury and fraud there will be cordial agreement. The committee has disclosed in no unmistakable way fraudulent practices of a most abominable character, and it has made proposals for stopping these frauds; it now remains for the recommendations to be embodied in an Act of Parliament. But anyone who supposes that great opposition to such legislation is not assured does not realise how vast are the interests involved. While we lag behind other countries and other parts of the British dominions in tolerating the conditions of chaos revealed by the report, none must ignore the difficulties that may impede remedial legislation even when a more favourable time for it than the present supervenes. The committee has shown itself anxious not to disturb the vested interests of the better class of manufacturer of proprietary articles of a medical character, but the residue, for whose interests we are not concerned, is not likely to submit tamely to the diminution or destruction of its profits, and those who have profited largely by the systematic and ingenious advertisement of the patent medicine trade will have to be reckoned with. An individual fortune of £1,111,000 left by a pill-maker and an annual sum of £2,000,000 spent on advertisements by the trade generally are among the figures cited in the report, which will show that a Bill upon the lines recommended, whether it be treated as a political measure or not, will not be allowed to go through without strong opposition. The matter is therefore one which must not be allowed to drop or to be forgotten, although the pressure of national affairs to-day may compel the awaiting of a more convenient opportunity. Let us, however, hope that that opportunity may present itself before very long in an era of renewed peace, and that in the not too distant future reawakened commercial enterprise may find no place left for the misapplied ingenuity and pernicious activity of the quack medicine vendor.

Annotations.

"Ne quid nimis."

THE QUESTION OF ANTITYPHOID VACCINATION: RECENT ITALIAN EXPERIENCE.

Professor Lustig, of Florence, has submitted a communication on this subject to the Italian Minister of Marine. In it he draws attention to the praiseworthy initiative of the Chief Inspector of Hygiene, by which optional antityphoid vaccination was introduced into the navy, and to the good results already obtained in the sense of a marked reduction of this disease among those vaccinated. The efficacy of this prophylactic measure, however, is, according to Professor Lustig, frustrated, or at least considerably restricted, by the fact that it is not obligatory. Some, owing to their natural laziness as much as to general repugnance, will not submit to medical interference of a compulsory character, even if it is of a slight nature and free from inconvenience; owing also to lack of education on matters of hygiene, it is a fact that many will not undergo this vaccination, which has its main advantage when done on a massive scale and over a wide area. To secure its result it is necessary, in Professor Lustig's opinion, that such vaccination should be compulsory in the army and navy, as it is in Japan, the United States, and some other countries. Its absolute harmlessness is a more than sufficient guarantee to the State against possible judicial and moral responsibility. The efficacy of the results, however, is only obtainable when the vaccination is practised under the most favourable conditions in every respect. Professor Lustig does not place complete faith in highly optimistic statistics, whether civil or military. In his exhaustive report on antityphoid vaccination at the Twenty-third Congress of Medicine, Dr. Moreschi observed that the diversity of results obtained in France were illustrated by an enormous reduction of mortality from 168·44 per 1000 among unvaccinated to 0·18 per 1000 among vaccinated; in Germany and England, on the other hand, the mortality fell respectively only from 99 to 55 per 1000 and from 30 to 5 per 1000. According to both Moreschi and Lustig the English statistics reflect more exactly the value of this prophylactic measure. In Italy it has not been hitherto possible to carry out this vaccination with the precision employed in England and Germany. The Pfeiffer-Kolle and the Vincent vaccine have, for example, been used promiscuously on the same individual and vaccine of more than a year old has been utilised. Again, statistics take no note of persons who have already passed through an attack of typhoid fever, nor do they state whether individuals vaccinated in 1912 and revaccinated in 1913 were attacked. Neither does it appear what practical and scientific considerations induced those in authority to prescribe very small vaccinal doses, since the intensity of the reaction observed in those vaccinated is not a satisfactory scientific criterion. In order that these and similar mistakes may be avoided, Professor Lustig is of opinion that there should be specialisation, or at least special technical instruction, in regard to those who are entrusted with the carrying out of these vaccinal methods.

A PHYSICIAN OF ANCIENT SARDIS.

We have on many occasions written of the medical personalities of ancient Greece and Rome, concerning whom archæological research has come upon some details. We may particularly refer to the case of Menophantos, the public or municipal physician of Amphissa, near to Delphi,[1] and to that of Aurelius Heron and Aurelius Didymus, public physicians of Oxyrrhynchus.[2] Another name has now to be added to these prosopographia of medical men in classical times. It is that of a practitioner at Sardis, in Asia Minor, whose memorial has been found by United States explorers when excavating upon the site of that ancient Lydian and Roman city. The inscription reads as follows: "Artemas a physician (ιατρός) built this tomb for himself, and for Melitene his wife, and for his heirs; he is living." The title of "iatros" may suggest that Artemas also was a public physician. Such medical officers were very frequently employed by the Greek cities of Asia Minor, and in inscriptions their official epithet, such as δημόσιος or δημσιεύων, was commonly omitted. The usual number in office in a town varied from 5 to 10.[3] The nearest date assignable to this new text is the first century B.C.

THE SEAT OF FUNCTIONAL HEART-BLOCK.

There elapsed a considerable interval of time between the discovery that under certain conditions the auricles could beat independently of the ventricles, and the further evidence that lesser degrees of heart-block could be caused by such influences as vagal stimulation or drugs such as digitalis. Whilst the former gross forms of heart-block are recognisable in many cases by the extraordinarily slow pulse and frequent syncopal or epileptiform seizures, the lesser degrees of block, causing, perhaps, only a lengthening of the interval between auricular and ventricular systoles, cause no disturbance of either pulse rhythm or rate. The latter forms of block may arise from slight lesions of the bundle of His; they may also arise from the causes above noted. It is now known, further, that the conducting system is made up of several parts; there is the auriculo-ventricular node at the "top" or auricular end of the bundle; then the bundle proper—a short, tiny structure; then its two branches to the right and left ventricle respectively; and, finally, its terminal branches within the main ventricular mass. It has now become important to discover at what particular site or sites in this system functional block occurs. If block occurs at any one of the constituent structures, the end result, namely, disturbance of auriculo-ventricular sequence, is the same. The degree or type of block will therefore not assist in this matter. Some valuable observations relating to this subject have been made by Dr. T. Lewis and these are published in *Heart* (1914, vol. v., p. 247). His observations were made upon dogs, and electric curves demonstrated the effects induced. By slowing the heart rhythm at the sinus—the normal site of origin of the heart's contraction—he produced what is known as the *a.-v.* rhythm (nodal rhythm). In such a rhythm the heart's contraction is initiated at the *a.-v.* node, not the sinus, and as a result auricles and ventricles contract practically simultaneously. When such a rhythm was induced vagal stimulation was applied. The result of this procedure is important. Instead of producing a "forward" or typical heart-block, a block in which the ventricle follows the auricle, but at a longer time interval, the reverse occurred; the auriculo-ventricular interval, which in *a.-v.* rhythm may be 0·04 second, instead of the normal 0·12 to 0·16 second, is still further reduced. The interval may be *nil*, or even a minus quantity. Such a result shows that the block is situate between node and auricle, since the pause between node and auricle delays the latter and so pushes it later and approximates its time-incidence to the ventricle. Functional block, then, has its seat at or in the immediate auricular vicinity of the *a.-v.* node. The observations showed also an additional fact. It was demonstrated that vagal action is more powerful upon the *a.-v.* node than upon the sinus. The value of this effect is obvious. If it were not so, it is possible that with high heart rates, such as those following exercise, an *a.-v.* rhythm would be readily induced, but the associated controlling effect of the vagus sustained during exercise upon the *a.-v.* node to a greater relative degree ensures little opportunity for its rhythmicity to exceed that of the sinus and thus initiate the rhythm. In this way the normal *a.-v.* sequence is preserved over wide variations of rate. The observations are of much value and reveal, incidentally, in a rather unexpected manner still another protective mechanism for preserving intact, under wide possible variations of conditions, the heart's vital action.

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[1] The Lancet, March 7th, 1903, p. 676.
[2] The Lancet, Feb. 27th, 1909, p. 636.
[3] See Pohl De Graecorum Medicis Publicis, 1905.

THE ETIOLOGY AND CURE OF PELLAGRA.

Professor Alessandrini and Professor Scala have recently published in the form of a large pamphlet containing excellent coloured reproductions of histological and other specimens a communication made by them last year to the Royal Academy of Medicine at Rome under the auspices of the Commission on Pellagra.[1] Their researches have led them to two fundamental conclusions: (1) that pellagra is not dependent on a maize diet; and (2) that it is a disease strictly localised and limited to areas where water is drunk which has been almost exclusively in contact with a clay soil. Hitherto it had not been suspected that common mineral substances, in the quantities present in drinking water, could provoke immediate or delayed disturbances of health, and it was only investigations as to the quality of the soil which was the source of the water drunk in pellagrous districts that led Professor Scala to formulate the suspicion that silicic acid in a colloidal state could produce a chronic intoxication such as is observed in pellagra. Ninety-four experiments were undertaken on monkeys, rabbits, guinea-pigs, and puppies, and consisted in the administration of silica in colloidal solution and in a gelatinous state by subcutaneous and intraperitoneal injection and also by mouth. The effect was an intoxication with symptoms and pathological changes similar to those observed in pellagra. These experimenters also found that a similar intoxication was produced by the administration by mouth, mixed with bran, of water obtained from the pellagrous district of Gualdo Tadino; and, moreover, that the feeding of animals exposed to the action of silica with maize had no effect in aggravating these symptoms, proving thereby that maize has in no sense a contributory action. The effect of silica on the organism is to cause a retention of salts, whence there ensues, first, excessive fixation in the tissues, and subsequently liberation of mineral acids, also excessive, which produce the pathological lesions noticed by the authors. Silica, therefore, acts in an indirect rather than in a direct manner, and it was found that its effects could be neutralised by intramuscular or subcutaneous injections of neutral citrate of sodium. The authors were thus led to make use of this fact in an attempt to cure pellagrous patients. Details are given of ten cases treated with daily injections of a 10 per cent. solution of trisodic citrate. That considerable improvement, if not cure, was obtained is evident from the photographs given in the pamphlet, and it may suggest the advisability of adopting this method of treatment in those cases of pellagra which are from time to time met with in this country.

DEMENTIA PRÆCOX AND MALINGERING.

THAT the early symptoms of dementia præcox are such as to lead the practitioner to suppose that his patient is only pretending to be sick is the thesis supported by Dr. Hesnard, surgeon in the French Navy, in the *Archives de Médecine et de Pharmacie Navales*, in a recent article on the Importance of Absurd Answers in the Diagnosis of Insanity. Patients suffering from dementia præcox, just after the first onset, are, he says, as yet so little changed, and their mental powers are so slightly impaired, that it is difficult for the alienist to convince the friends of the patient, and even his medical advisers, that he is not wantonly perverse, but, on the contrary, stricken with a truly serious disease. Dr. Hesnard recounts his observations on a case, that of a man who, much run down owing to early phthisis, became excited one day in his barrack-room, and had to be sent to hospital. In hospital he soon became calm, and thereafter was generally vague and irrelevant in his answers to questions, and at times incoherent, though occasionally his answers were shrewd and amusing. He could be made to speak more rationally if he was sharply questioned and his slumbering self-control awakened. His friends thought he was shamming, and asked him what he was doing it for, and they pointed out to him that he need not sham to get out of the service, as he was going to be invalided for phthisis anyway. Dr. Hesnard, after considering the case closely, concluded that the patient was not a malingerer, and believed that he recognised in him the onset of dementia præcox. The man looked strange and haggard and always wore a weak smile. Quiet generally when alone, he became uneasy and agitated when observed. He mimicked his medical attendant cleverly and could talk brilliantly. This was not like a malingerer. The malingerer has a narrow range of ideas, brings back the conversation to the points about which he has planned to deceive, repeats himself, and becomes ridiculous; he dare never be amusing. This patient's absurd answers were amusing. He speedily became worse, and died some three months later from tuberculous meningitis.

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[1] Contribuito Nuovo alla Etiologia e Patogenesi della Pellagra. By Giulio Alessandrini and Alberto Scala. Tip. naz. G. Bertero, Via Umbria, Rome, 1914.

THE ENDOCRINE GLANDS.

The organs of internal secretion, or endocrine glands as they are more briefly called, have been the subjects of a vast and increasing amount of study during the last few years at the hands of physiologists and pathologists all the world over. A great deal is known about these organs and their secretions, still more is suspected; and these suspicions are being published almost daily in medical literature, as theories, hypotheses, or explanations (so-called), to account for the most varied disturbances of health. This is indeed the kingdom in which the arm-chair theorist is nowadays king. A timely protest against this wave of speculation has recently been published[1] by Professor Gley, of Paris, in the form of a little book that is an expansion of a report made last year to the Section of Medicine at the Seventeenth International Congress of Medicine. Here a sound observer gives an admirable exposition of our present knowledge about these glands and their secretions and a very shrewd criticism of many of the ill-founded hypotheses, the "conceptions de cabinet," as Vulpian called them, that have been built up on that knowledge. Medicine has nothing to gain from the premature application of uncertain data furnished by experimental physiology, and Professor Gley's critical review showing why and wherefore this is so deserves to be widely read.

EMETINE IN THE TREATMENT OF CHOLERA.

In the *Indian Medical Gazette* for July Dr. Renault, Director of the Sanitary Service of French India, has reported good results from the treatment of cholera by hypodermic injections of emetine, which was suggested to him by the remarkable effects of the remedy in dysentery. He finds that soon after injection the number of motions diminish and bile reappears in the stools, which by degrees regain their normal consistence, sickness subsides, and the action of the kidneys is restored. But in the last stage of the disease, characterised by marked loss of animal heat and anuria, when the vomiting and diarrhœa have ceased, the drug has no effect. If vomiting and diarrhœa are still present, although anuria has supervened, emetine has marvellous effects. Dr. Renault admits that other modes of treatment, notably the intravenous injection of isotonic or hypertonic saline solution, give as satisfactory results. But the injections have to be repeated in many cases several times in the 24 hours. In times of epidemics this treatment is impracticable in a large number of cases. Moreover, the natives of India dislike it, and refuse to submit to it. They are much more easily persuaded to submit to hypodermic injections. In a severe epidemic of cholera Dr. Renault obtained 73 per cent. of recoveries under the emetine treatment. This percentage would have been greater had not the treatment been applied with misdirected zeal by the *infirmiers* in desperate cases contrary to direction. The doses administered were 4 centigrammes of chlorhydrate of emetine per diem to patients above the age of 25 years; 3 centigrammes to patients between the ages of 15 and 25 years; 2 centigrammes betwen the ages of 8 and 15 years; and 1 centigramme between the ages of 1 and 8 years. Auxiliary treatment, such as draughts to stop the diarrhœa, injections of camphorated oil, caffeine and saline solution, and measures to mitigate the extreme cold of the body, should not be neglected.

Sir Arthur Chance has been appointed a member of the First Senate for the National University of Ireland in succession to the late Sir Christopher Nixon.

We regret to announce the death on Sept. 7th, at the age of 66, of Dr. Walter Holbrook Gaskell, F.R.S., the distinguished Cambridge physiologist.

"THE LANCET" HYGIENIC TEST FOR GAS FIRES.

We continue to receive modern types of gas fires, with a request to submit them to the hygienic test which was originated in The Lancet Laboratory early in the year. It is evident to us that the manufacturers generally speaking are desirous of supplying to the public only those gas fires which comply with this test. That is a very satisfactory state of affairs. We stated in an article in The Lancet of April 4th, 1914, that we should be willing to undertake this test with any gas fires upon the market which may have been overlooked amongst the number chosen for the purposes of our report in the article referred to. We have since published further results of testing (*vide* The Lancet, July 11th), and we now submit the results of an examination by the hygienic test of six gas fires submitted to us by the Richmond Gas Stove Company, Limited, of Academy-street, Warrington. The request was made to us early in May, and the fires were sent to us on the 15th of that month, but they were all 1913 models, and, in the light of the following results, it is clear that the standard of hygienic efficiency had been kept in view. One fire modelled by this company—the Renaissance—happened to have been included in our independent report made in April, and this gave very satisfactory results when tested in our Laboratory. The fires sent since (the "Period" series) bore the following names: (1) Louis, (2) Flambeau, (3) Georgian, (4) Tudor, (5) Bavarian, and (6) Renaissance. The results are set out in the following diagram:—

"The Lancet" Test of Gas Fires (the Richmond Gas Stove Company).

Name of fire	*Louis.*	*Flambeau.*	*Georgian.*
Without elbow	o o o o o	o o o o o	o o o o o
2-ft. length attached ...	o o o o o	o o o o o	o o o o o

Name of fire	*Tudor.*	*Bavarian.*	*Renaissance.*
Without elbow	o o o o o	o o o o o	o o o o o
2-ft. length attached ...	o o o o o	o o o o o	o o o o o

It will be seen that these fires all through did not permit the slightest escape of combustion products into the room tested under the conditions described. The diagrams show that the canopy was examined at five different points, but in all cases the negative sign records a working hygienic efficiency. In the event of leakage the sign + would appear. When testing the fire in the open room, without a flue attachment or connexion with the fireplace chimney, the fire should be protected from external sources of disturbance, and this is easily done by guarding the fire during the test by a threefold screen. No such precaution should be necessary when the fire is in its practical position at the fireplace on account of the increased pull given by the chimney. The test is a very delicate one, as indeed it should be, having regard to hygienic requirements. For ourselves we are inclined to accept that when by the open test a gas fire shows no leakage with, say, a 2-ft. flue attachment (supplied by the makers of the fire), all that is required by hygienic considerations has been done. However, it is obvious to us that manufacturers are prepared to construct a gas fire which shall pass the open test under the conditions described and without the help of a length of flue attached to its exit channel (the nozzle). It may be a refinement to insist upon this, but one thing is perfectly clear, that a fire passing this test will, from the hygienic point of view, be free from reproach under practical working conditions. This standard is reached by the complete series of gas fires submitted to us by Messrs. Richmond.

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[1] Les Sécrétions Internes. Paris: J. B. Baillière et Fils. 1914. 16mo. Pp. 96. Price 1.60 francs.

It is gratifying to find that we have initiated an important movement in regard to rendering this method of domestic heating acceptable from the hygienic point of view. We may well leave economical considerations to the gas fire industry, for clearly that industry is in good hands. The method will obviously not succeed unless heating results consistent with the cost of gas consumed are furnished. As a matter of fact, this is accomplished by the modern models of gas fires which we have examined, and the endeavour to gain the maximum heating efficiency without hygienic risk has met with a success which is pleasing to record.

Lastly, we hope that further attention will be given to the irritating noise made more or less by all atmospheric burners. This fact undoubtedly creates a prejudice against the gas fire, and the greater the noise the greater is the impression that the gas bill is going to be big. In the sick room, where the gas fire is of the greatest convenience and service, it is particularly desirable that the sound of gas and air being intermingled and injected should not disturb the rest or equanimity of the patient. We are glad to find that practical attention is being given to this matter with the view of removing the drawback, and amongst the "silencing" devices we have seen none that works more satisfactorily than the patent injector supplied with Messrs. Richmond's gas fires. We need not enter into the construction of this, but it is sufficient to say that we have had one of these silent fires under observation in a bedroom for several days and the result is very satisfactory. Quite close up to the fire a purring sound was audible, but at a distance of a few feet it was difficult to hear anything at all, while at the bedside in the middle of the room, some 8 feet away from the fire, nothing could be heard at all, and it seemed incredible that in spite of this gas was being consumed at the rate of about 30 feet an hour in a cheery red fire giving a genial warmth and comfortable aspect to the room.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been notified:—Deputy Surgeon-General (retired): P. W. Andrews to Portsmouth Dockyard (dated Sept. 2nd, 1914). Fleet-Surgeon: W. J. Blurblock to the *Invincible* (dated Sept. 2nd, 1914). Staff-Surgeons: J. H. Lightfoot to the *Victory*, additional, for disposal; and W. Bastian to the *Aurora*, on commissioning (dated Sept. 5th, 1914). Surgeon: W. H. King to Royal Marine Infirmary, Deal (dated Sept. 1st, 1914).

The undermentioned have been appointed Temporary Surgeons: A. L. Sutcliffe and C. C. Chance to the *Racer*, additional, for Osborne College; C. H. S. Taylor, H. C. Waldo, H. M. Scott, W. J. Jago, and M. Onslow-Ford, all to the *Victory*, additional, for Haslar Hospital; G. Sparrow and H. Wilkes, to the *Pembroke*, additional, for R.N. Barracks, additional, for disposal; G. Hamilton, H. L. D. O. Duckworth, B. A. Playne, and J. Rosswell, to the *Victory*, for R.N. Barracks, additional, for disposal; and C. E. S. Harris to the *Fearless*.

ROYAL NAVAL VOLUNTEER RESERVE.

The undermentioned have been appointed Surgeon: William Glyn Evans (dated August 26th, 1914). J. R. Kay-Mouat has been granted a temporary commission as surgeon, and appointed to the *Victory*, additional, for R.N. Division (dated August 31st, 1914). F. J. Hannan is restored to the list of Surgeons, with seniority of Oct. 6th, 1903. Probationary Surgeon: H. B. Padwick to the *Pembroke*, additional, for R.N. Hospital, Chatham (dated Sept. 4th, 1914).

ROYAL ARMY MEDICAL CORPS.

The undermentioned are granted temporary rank as follows whilst serving with the Australian Medical Unit (dated Sept. 2nd, 1914):—To be Majors: George Horne and Robert Dick. To be Captains: Robert Alley Rotherham Wallace, William Bradbridge Studdy, Walter Rupert Reynell, Randall Vivian McDonnell, Herschell Lawrence Levi Harris, Sydney Wentworth Patterson, and Mark Clayson Gardner. To be Temporary Quartermaster, with the honorary rank of Lieutenant: Thomas William Jent, late Serjeant-Major, Royal Army Medical Corps. To be Temporary Lieutenants (dated August 28th, 1914): Tom Bragg, Arthur Vernon Poyser, and Frank Anthony Hampton.

The undermentioned are granted the temporary rank of Lieutenant:—Dated August 31st, 1914: Ralph Johnson Tait, Robert William Walter Vaughan, John Macpherson Johnston, Robert Frew Young, Douglas Benham Spence, Herbert Cubitt Lucey, and Walter Justice Paramore. Dated Sept. 1st, 1914: John Percival Charles, John Higgins, William Wilson Ingram, Edmund Basil Jardine, Roy Russell Kerr, David Anderson Laird, John Gillies Priestly, Henry Albert Ronn, and Aubrey William Venables.

INDIAN MEDICAL SERVICE.

The King has approved the promotion of the following officers of the Indian Medical Service:—Colonel to be Surgeon-General: Thomas Grainger, C.B. (dated May 25th, 1914). Lieutenant-Colonel to be Colonel: William Rice Edwards, C.M.G. (dated May 25th, 1914). Captains to be Majors: Walter Scott Patton (dated Jan. 26th, 1914), and Brevet-Major Samuel Richard Christophers (dated March 1st, 1914).

The King has approved the confirmation of the commissions of the following Lieutenants on probation of the Indian Medical Service with effect from Jan. 31st, 1914:—George Henry Mahony, Gordon Covell, William Ross Stewart, Koty Venkata Ramana Rao, John Gregory Owen Moses, Hari Chand, Venkatasubba Mahadevan, Alured Charles Lowther O'Shee Bilderbeck, Jacob William van Reenen, Basil Fraser Beatson, Maurice James Roche, Nehchal Das Puri, Prabodh Chandra Roy, Jagannath Balkrishna Vaidya, Joseph Martin Reeves Hennessy, Alfred Glen Cowper, William Mawhood Lupton, Hubert Horan Brown, and Charles Henry Neil Baker.

The King has approved the admission of the undermentioned gentlemen to the Indian Medical Service:—To be Lieutenants: Dated August 1st, 1914: John Walter Pigecn, Maurice Lawrence Treston, Peter Vieyra, Bhamini Mohon Mitra, Philip Savage, Thomas Bond Paul, Amir Chand, Robert Lee, Nilkanth Shriram Jatar, Tadepally Sankara Sastry, Jamal-ud-din, Ferozeshah Bapuji Chenoy, Sadanala Bashiam Venugopal, Charles de Carteret Martin, and Joseph Henry Smith.

The King has approved the retirement from the Indian Medical Service of Lieutenant-Colonel Charles Duer (dated Nov. 28th, 1913).

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

The undermentioned Cadets and ex-Cadets of the Officers Training Corps to be Lieutenants (on probation): John Aloysius Musgrave (dated August 7th, 1914). Harold Larcom

Mooney, John Philip Macnamara, and Joseph Crawford Alfred McCalden (dated August 9th, 1914). Archibald Browning Mitchell (dated August 11th, 1914). Frederick Roland Studdert Shaw (dated August 13th, 1914). John James Balmanno Edmond and Arthur Cyril Bateman (dated August 16th, 1914). James Ronald McCurdie, David Cuthbert Barron, and Thomas Parr (dated August 19th, 1914). Douglas Morrison Milne Fraser (dated August 20th, 1914). John Wright Malcolm (dated August 21st, 1914). Clement Lovell (dated August 22nd, 1914). Bernard Goldsmith (dated August 25th, 1914).

The undermentioned to be Lieutenants (on probation): David Christopher Leslie Vey (dated August 8th, 1914). William Fotheringham and Austin Smith (dated August 20th, 1914). Archibald Watson Russell (dated August 22nd, 1914). Ernest Andrews Dyson (dated August 24th, 1914).

Supplementary to Regular Units or Corps: The undermentioned Lieutenants are confirmed in their rank: John McC. Orme, John Cullenan, George Perkins, Edward S. Rowbotham, and Frederick McKibbin.

TERRITORIAL FORCE.

Royal Army Medical Corps.

1st East Anglian Field Ambulance: Ffrangeon Roberts to be Lieutenant (dated Sept. 2nd, 1914).

Eastern Mounted Brigade Field Ambulance: Captain William Archibald to be Major (dated Sept. 5th, 1914).

North Midland Mounted Brigade Field Ambulance: To be Lieutenants: John Brentnall Stanley and Lionel Alfred Dingley (dated Sept. 5th, 1914).

1st South Western Mounted Brigade Field Ambulance: Ivan Cochrane Keir to be Lieutenant (dated Sept. 5th, 1914).

1st East Lancashire Field Ambulance: To be Lieutenants: Thomas Hayhurst, Robert Steele Young, and John Buckley (late Surgeon-Lieutenant, 2nd Volunteer Battalion, the Sherwood Foresters, Nottinghamshire and Derbyshire Regiment). Captain Albert Ramsbottom to be seconded (dated August 4th, 1914).

2nd East Lancashire Field Ambulance: George Battersby Jameson to be Lieutenant (dated Sept. 5th, 1914). Captain William F. Munro is seconded (dated August 4th, 1914), Captain Alexander Callam is seconded (dated Sept. 5th, 1914). Frederick Colin Bentz to be Lieutenant (dated Sept. 5th, 1914). Frederick Jeeves to be Lieutenant (dated Sept. 9th, 1914).

3rd East Lancashire Field Ambulance: Lieutenants to be seconded: Kingsmill W. Jones (dated August 4th, 1914) and William J. Reid (dated August 5th, 1914). Charles Bertram Marshall to be Lieutenant (dated Sept. 5th, 1914). William Pike Ferguson to be Lieutenant (dated Sept. 9th, 1914).

1st West Lancashire Field Ambulance: To be Lieutenants: James Walker and Thomas Courtenay Clarke (dated August 8th, 1914).

1st London (City of London) Field Ambulance: Captain Charles S. Brebner, from the Territorial Force Reserve, to be Captain (dated Sept. 9th, 1914).

5th London Field Ambulance: George Scott to be Lieutenant (dated Sept. 5th, 1914).

6th London Field Ambulance: To be Lieutenants: Henry Bryan Frost Dixon, Alfred Morgan Hughes, and Frederick Lucien Golla (dated Sept. 5th, 1914).

1st South Midland Field Ambulance: To be Lieutenants: Albert Edward Peel McConnell and Cyril Randolph Wallace (dated Sept. 5th, 1914). The date of appointment as Lieutenants of William Bowater and Morris Wilks is August 5th, 1914, and not August 19th, as stated in THE LANCET of August 22nd, 1914.

1st Northumberland Field Ambulance: Francis Metcalfe to be Lieutenant (dated Sept. 5th, 1914).

1st Welsh Field Ambulance: Donald Macaulay to be Lieutenant (dated Sept. 5th, 1914). Charles Bernard Francis to be Transport Officer with the honorary rank of Lieutenant (dated Sept. 5th, 1914).

3rd Welsh Field Ambulance: Captain David B. Chiles-Evans is seconded (dated August 8th, 1914).

2nd West Riding Field Ambulance: Hubert Wallace Symons to be Lieutenant (dated August 7th, 1914).

3rd West Riding Field Ambulance: John Pearson Mathews to be Lieutenant (dated August 6th, 1914).

3rd West Lancashire Field Ambulance: To be Lieutenants: Adam Annand Turner, Leonard Barron Baird (dated Sept. 5th, 1914), and Francis Statham Fletcher (dated Sept. 9th, 1914).

1st Lowland Field Ambulance: Lieutenant William F. Mackenzie to be Captain (dated August 18th, 1914).

2nd Wessex Field Ambulance: Henry William Spaight to be Lieutenant (dated Sept. 5th, 1914).

Yorkshire Mounted Brigade Field Ambulance: Captain George H. L. Hammerton to be Major (dated August 20th, 1914).

1st London (City of London) General Hospital: List of officers whose services will be available on mobilisation:—Major Howard H. Tooth, C.M.G., to be Lieutenant-Colonel (dated Sept. 2nd, 1914). The undermentioned Captains to be Majors (dated Sept. 2nd, 1914): Herbert M. Fletcher, Robert C. Bailey, John H. Drysdale, and Louis B. Rawling. The undermentioned to be Captains (dated Sept. 2nd, 1914): William Henry Girling Ball, James Hugh Thursfield, Harold William Wilson, William Bradshaw Ainger, Herbert Drayton Clementi-Smith, and Richard Gill; (dated Sept. 5th, 1914): Henry Gaskin Boyle, Reginald Cheyne Elmslie, William Douglas Harmer, Joseph Frederick Trewlby, Herbert Williamson, Alfred Bernard Pavey Smith, George Harold Lawson Whale, Lionel Gordon Crossman, Martin Wright Kidman Bird, and Frank Atcherley Rose.

2nd London (City of London) General Hospital: Charles Archibald Lees to be Captain (dated Sept. 9th, 1914).

4th London General Hospital: Reginald Oliver Sibley to be Captain (dated Sept. 2nd, 1914). The undermentioned Lieutenant-Colonels are seconded, under the conditions of paragraph 112 of the Territorial Force Regulations (dated Sept. 9th, 1914): Sir William W. Cheyne, Bart., and George R. Turner.

3rd Northern General Hospital: The undermentioned to be Captains (dated Sept. 5th, 1914): Arthur Gurney Yates, John Black Ferguson Wilson, and Henry Cecil Snell.

4th Northern General Hospital: Herbert Cecil Barlow to be Captain (dated Sept. 5th, 1914).

4th Scottish General Hospital: The undermentioned to be Captains (dated Sept. 5th, 1914): Alexander John Archibald and William Herbert Brown.

3rd Southern General Hospital: Major Walter Tyrell Brooks to be Lieutenant-Colonel (dated Sept. 5th, 1914); and Captain Robert Long Gamlen (Indian Medical Service) to be Temporary Captain (dated Sept. 5th, 1914).

4th Southern General Hospital: The undermentioned to be Captains (dated Sept. 5th, 1914): Cornelius Frederick Glinn and Guy Stanley Earl.

5th Southern General Hospital: Major John Kyffin, from the list of officers available for service on mobilisation, to be Lieutenant-Colonel on the permanent personnel (dated Sept. 5th, 1914).

1st Eastern General Hospital: The undermentioned to be Captains (dated Sept. 9th, 1914):—John Foster Gaskell, Dalton Mallam, and Edward John Yelverton Brash.

2nd Western General Hospital: Major Ernest S. Reynolds to be Lieutenant-Colonel (dated Sept. 9th, 1914). The undermentioned to be Captains (dated Sept. 9th, 1914): Wilson Harold Percy Hey, John Philip Buckley, Frank Edward Tylecote, Donald Elms Core, and Sidney Rawson Wilson.

Attached to Units other than Medical Units.—To be Lieutenants: Eric Lewis Giblin, Alfred Evan Lewis Devonald, William Ernest Falconar, Arvor Jones, Grahame Patton, Martin Blenheim Howard Stratford, and Charles Wynn Wirgman (dated Sept. 5th, 1914). Surgeon-Major Henry Waite, from the Northern Command Signal Companies, Royal Engineers (Army Troops), to be Major (dated Sept. 5th, 1914). Captain James C. Herbertson is seconded (dated Sept. 9th, 1914). Captain William G. Sutcliffe is seconded (dated Sept. 9th, 1914). Lieutenant James McGlashan to be Captain (dated Sept. 9th, 1914). Lieutenant William Robert Murison to be Captain (dated Sept. 9th, 1914). Lieutenant Frederick W. Price resigns his commission (dated Sept. 9th, 1914). The appointment to the Territorial Force of Major George M. Dobson, Reserve of Officers, is cancelled.

TERRITORIAL FORCE RESERVE.

Royal Army Medical Corps.

Captain Charles G. Watson is seconded (dated Sept. 9th, 1914).

DEATHS IN THE SERVICES.

The late Surgeon-General Sir Anthony Dickson Home, K.C.B., V.C., whose death we announced in the Services column of THE LANCET of August 15th, left estate of the gross value of £24,607.

ROYAL DEVON AND EXETER HOSPITAL.—At the last meeting of the governors of the Devon and Exeter Hospital a tender for £5490 was accepted for the erection of the proposed new nurses' wing in connexion with the institution.

PRESENTATION TO A MEDICAL MAN.—On Sept. 4th, at a largely attended meeting, a public presentation was made to Dr. James Reid, of Portsoy. in recognition of the esteem in which he is held locally. Mr. J. E. Sutherland, M.P., on behalf of the subscribers, handed Dr. Reid a deposit receipt for £273.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In the 97 English and Welsh towns with populations exceeding 50,000 persons at the last Census, 8817 births and 5016 deaths were registered during the week ended Saturday, Sept. 5th. The annual rate of mortality in these towns, which in the three preceding weeks had been 12·6, 12·3, and 13·6 per 1000 of their aggregate population, estimated at 18,120,059 persons at the middle of this year, further rose to 14·4 per 1000 in the week under notice. During the first nine weeks of the current quarter the mean annual death-rate in these towns averaged 12·4, against a corresponding rate of 12·3 per 1000 in the metropolis. Among the several towns the death-rate last week ranged from 4·3 in Bournemouth, 5·2 in Reading, 6·5 in Southport, 6·6 in Ealing and in Eastbourne, and 7·0 in Darlington, to 21·0 in Gateshead, 21·2 in Stoke-on-Trent and in Tynemouth, 21·6 in Liverpool, 23·9 in Middlesbrough, and 24·8 in South Shields.

The 5016 deaths from all causes were 296 in excess of the number in the previous week, and included 1189 which were referred to the principal epidemic diseases, against numbers steadily increasing from 394 to 890 in the eight preceding weeks. Of these 1189 deaths, 947 resulted from infantile diarrhœal diseases, 82 from measles, 69 from whooping-cough, 49 from diphtheria, 25 from scarlet fever, and 17 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 3·4, or 0·8 per 1000 above the rate in the previous week. The deaths of infants (under 2 years) from diarrhœa and enteritis, which had steadily increased from 112 to 677 in the eight preceding weeks, further rose to 947, of which 269 were registered in London, 71 in Liverpool, 50 in Birmingham, 31 in Manchester, 25 in West Ham, in Stoke-on-Trent, and in Leeds, and 23 in Sheffield. The deaths referred to measles, which had been 111, 92, and 92 in the three preceding weeks, fell to 82, and included 24 in London, 13 in Oldham, 10 in Leeds, 6 in West Ham, 5 in Liverpool, and 4 in Sheffield. The fatal cases of whooping-cough, which had been 65, 51, and 52 in the three preceding weeks, rose to 69 last week, of which 22 occurred in London and 3 in Manchester. The deaths attributed to diphtheria, which had been 31, 32, and 35 in the three preceding weeks, further rose to 49, and included 7 in Birmingham, 6 in London, 3 each in Sheffield and Liverpool, and 2 each in Leyton, Brighton, Portsmouth, Bristol, Stoke-on-Trent, and Middlesbrough. The deaths referred to scarlet fever, which had been 19, 23, and 20 in the three preceding weeks, rose to 25 last week, of which 8 were recorded in London, 2 in Liverpool, and 2 in Preston. The fatal cases of enteric fever, which had been 14, 9, and 14 in the three preceding weeks, further rose to 17 last week, and included 3 in London and 2 in Portsmouth.

The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 3072, 3071, and 3216 at the end of the three preceding weeks, had further increased to 3318 on Saturday last; 548 new cases were admitted during the week, against 335, 414, and 536 in the three preceding weeks. These hospitals also contained on Saturday last 1093 cases of diphtheria, 63 of whooping-cough, 45 of enteric fever, and 13 of measles, but not one of small-pox. The 1332 deaths from all causes in London were 152 in excess of the number in the previous week, and corresponded to an annual rate of 15·4 per 1000. The deaths referred to diseases of the respiratory system, which had been 116, 143, and 132 in the three preceding weeks, further fell to 128 in the week under notice, but were 4 above the number in the corresponding week of last year.

Of the 5016 deaths from all causes in the 97 towns, 178 resulted from various forms of violence, and 360 were the subject of coroners' inquests, while 1479 occurred in public institutions. The causes of 44, or 0·9 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in Leeds, Bristol, West Ham, Bradford, Hull, Nottingham, and in 72 other smaller towns. Of the uncertified causes of death, 7 were registered in Birmingham, 6 in Gateshead, 5 in Liverpool, 3 each in London and Tynemouth, and 2 each in Gillingham, Stoke-on-Trent, Warrington, Manchester, South Shields, and Newcastle-on-Tyne.

HEALTH OF SCOTCH TOWNS.

In the 16 largest Scotch towns with an aggregate population estimated at 2,293,200 persons at the middle of this year, 1145 births and 703 deaths were registered during the week ended Saturday, Sept. 5th. The annual rate of mortality in these towns, which had been 13·8, 15·0, and 14·4 per 1000 in the three preceding weeks, rose to 16·0 per 1000 in the week under notice. During the first nine weeks of the current quarter the mean annual death-rate in these towns averaged 13·7, against 12·4 per 1000 in the 97 large English towns. Among the several towns the death-rate last week ranged from 10·1 in Motherwell, 10·5 in Leith, and 10·8 in Hamilton, to 18·1 in Glasgow, 18·8 in Paisley, and 18·9 in Ayr.

The 703 deaths from all causes were 72 in excess of the number in the previous week, and included 121 which were referred to the principal epidemic diseases, against numbers increasing from 49 to 100 in the five preceding weeks. Of these 121 deaths, 89 resulted from infantile diarrhœal diseases, 16 from whooping-cough, 8 from diphtheria, 4 from scarlet fever, 3 from measles, and 1 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 2·8, against 3·4 per 1000 in the 97 large English towns. The deaths of infants (under 2 years) attributed to diarrhœa and enteritis, which had steadily increased from 29 to 64 in the four preceding weeks, further rose to 89, of which 61 were recorded in Glasgow, 5 each in Edinburgh, Dundee, and Greenock, and 4 in Coatbridge. The deaths referred to whooping-cough, which had been 16, 13, and 15 in the three preceding weeks, were 16 last week, and comprised 13 in Glasgow, 2 in Greenock, and 1 in Dundee. The fatal cases of diphtheria, which had been 7, 11, and 6 in the three preceding weeks, rose to 8, of which 3 occurred in Aberdeen. The 4 deaths attributed to scarlet fever, of which 2 were registered in Glasgow, were slightly below the average in the earlier weeks of the quarter. The 3 deaths from measles, comprising 2 in Glasgow and 1 in Dundee, were 3 below the average in the earlier weeks of the quarter. The fatal case of enteric fever was recorded in Falkirk.

The deaths referred to diseases of the respiratory system, which had increased from 55 to 70 in the four preceding weeks, fell to 65 in the week under notice, and 30 deaths were attributed to various forms of violence, against 33 and 25 in the two preceding weeks.

HEALTH OF IRISH TOWNS.

In the 27 town districts of Ireland with an aggregate population estimated at 1,205,280 persons at the middle of this year, 606 births and 419 deaths were registered during the week ended Saturday, Sept. 5th. The annual rate of mortality in these towns, which had been 15·3, 16·1, and 17·6 per 1000 in the three preceding weeks, further rose to 18·1 per 1000 in the week under notice. During the first nine weeks of the current quarter the mean annual death-rate in these towns averaged 16·2, against corresponding rates of 12·4 and 13·7 per 1000 in the English and Scotch towns respectively. The annual death-rate last week was equal to 18·9 in Dublin (against 15·4 in London and 18·1 in Glasgow), 20·3 in Belfast, 11·6 in Cork, 12·7 in Londonderry, 17·6 in Limerick, and 15·2 in Waterford, while in the 21 smaller towns the mean death-rate was 16·6 per 1000.

The 419 deaths from all causes were 13 in excess of the number in the previous week, and included 84 which were referred to the principal epidemic diseases, against numbers increasing from 40 to 91 in the four preceding weeks. Of these 84 deaths, 74 resulted from infantile diarrhœal diseases, 3 from whooping-cough, 2 from measles, scarlet fever, and diphtheria, and 1 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 3·6, against corresponding rates of 3·4 and 2·8 per 1000 in the English and Scotch towns respectively. The deaths of infants (under 2 years) attributed to diarrhœa and enteritis, which had increased from 18 to 67 in the four preceding weeks, further rose to 74, of which 44 were registered in Belfast, 17 in Dublin, and 3 in Londonderry. The deaths referred to whooping-cough, which had been 8, 7, and 7 in the three preceding weeks, declined to 3 last week, of which 2 occurred in Belfast and 1 in Cork. The deaths from measles and scarlet fever were registered in Belfast, the 2 deaths from diphtheria in Dublin, and the fatal case of enteric fever in Ballymena; in each case the deaths from these diseases last week were below the average in the earlier weeks of the quarter.

The deaths referred to diseases of the respiratory system, which had been 46, 47, and 43 in the three preceding weeks, rose to 49 in the week under notice. Of the 419 deaths from all causes, 107, or 26 per cent., occurred in public institutions, and 8 resulted from different forms of violence. The causes of 11, or 2·6 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the 97 English towns the proportion of uncertified causes did not exceed 0·9 per cent.

KING'S COLLEGE HOSPITAL: OLD STUDENTS' DINNER.—The dinner of the past and present students of King's College Hospital arranged for Oct. 2nd next will not take place on account of the war.

Correspondence.

"Audi alteram partem."

ANTITYPHOID INOCULATION IN WAR TIME.

To the Editor of THE LANCET.

SIR,—On several occasions recently reference has been made in the press to the advisability of inoculating our troops against typhoid fever before sending the men abroad. The high necessity of this procedure does not appear to be sufficiently recognised. Yet our experience in the South African war showed that were typhoid fever to break out among such masses of men it would destroy many more lives than the fire of the enemy could do.

So necessary and so effective is this precaution that we would press on all commanding officers the importance of seeing that inoculation is widely carried out, especially in the case of all men who are likely to be sent abroad. It should, in our opinion, be made compulsory. Moreover, for reasons which are known to those most experienced, inoculation ought to be performed at least a fortnight before the man leaves this country. The procedure is simple and but little inconvenience is suffered.

We know that the officers of the Royal Army Medical Corps are overburdened with work at present. They are doing what they can. To save them this additional work we suggest that arrangements could be made so that Fellows of our respective colleges would undertake the task of inoculation. The laboratory of the Royal College of Physicians is prepared to supply the necessary vaccine, and when the organisation is complete we calculate that many hundreds of inoculations could be performed each week.

This matter is not only extremely important but also very urgent. It is on these accounts that we venture to ask you to give this letter some prominence in your columns.

We are, Sir, yours faithfully,

J. J. GRAHAM BROWN,
President of the Royal College of Physicians.

F. M. CAIRD,
President of the Royal College of Surgeons.

Edinburgh, Sept. 7th, 1914.

WANTED, AMBULANCE MEDICAL OFFICERS.

To the Editor of THE LANCET.

SIR,—Eleven officers (medical men) are required to complete the establishment of the 3rd East Anglian Field Ambulance—a home and foreign service ambulance. Applications, stating age, should be sent here *at once* to me.

I am, Sir, yours faithfully,

A. GRAHAM, M.B. Glasg.,
Captain, Acting O.C., 3rd E.A.F.A., Home Service.

Headquarters, 3rd East Anglian Field Ambulance,
Church Hill, Walthamstow, Sept. 9th, 1914.

THE RELATION OF FISH TO LEPROSY.

To the Editor of THE LANCET.

SIR,—Dr. J. M. Dalziel's letter on the above subject which appeared in your issue of August 22nd is another proof of the similarity which exists between Northern Nigeria and the Anglo-Egyptian Sudan in respect to matters medical and hygienic. I do not wish to discuss at any length the vexed question of leprosy and fish-eating, but, merely in the light of Dr. Dalziel's remarks upon the *Siluridæ* of Northern Nigeria, to direct attention to the observations of Captain R. G. Anderson, R.A.M.C., in Southern Kordofan. These will be found summarised on p. 107 of the first Review Supplement (1908) of the Wellcome Tropical Research Laboratories, Khartoum, and it will be seen that they tend to incriminate imperfectly cured mud fish. I secured some examples of these *Siluridæ* from Lake Keilak for the leprosy exhibit at Ghent last year, and found they belonged to the genus *Clarias*. The following is the note written at the time and taken from Captain Anderson's report:—

> This fish is caught in large numbers by the natives. It is eaten by Arab and Nuba alike with great relish, and is prepared by rough opening and cleaning, after which it is split or cut into slices and hung up to dry, at first in the sun and subsequently over smoke. Prepared in this manner it is carried from place to place by the itinerant vendor, finding its way to all the surrounding villages as well as to the Kadugli *sûk*. In the parched centre north of the province, there is *no* fish traffic of any sort and *no signs of endemic leprosy.*

A specimen of the fish will be placed in the museum here, but in considering the possible relationship of these fish to leprosy it is well to bear Dr. Dalziel's warning in mind and not to lay too much stress on native ideas. When in the Republic of Colombia I was told that there were many lepers in districts where fish was never eaten, and this is of course true in many parts of the world. At the same time, I am inclined to think that a dietary of badly cured and decomposing fish does in some way predispose to leprosy. I believe that Southern Kordofan, like Northern Nigeria, would be an excellent place to study this question, which has not yet been fully investigated and certainly deserves further attention.

I am, Sir, yours faithfully,

ANDREW BALFOUR,
Director-in-Chief, The Wellcome Bureau of Scientific Research.

10, Henrietta-street, W., Sept. 5th, 1914.

ORAL SEPSIS AND THE EXTRACTION OF TEETH.

To the Editor of THE LANCET.

SIR,—There can be no doubt the medical profession is indebted to Sir James Goodhart for his letters on the subject of pyorrhœa, for, as Mr. S. Spokes so well pointed out in his letter, there is teaching that has a very dangerous tendency, so far as the public's teeth is concerned, prevalent in the medical and dental profession.

This is not surprising, having in view what is called "the swing of the pendulum." Well within my memory doctors attached no importance to dental lesions and troubles until abscesses had formed at the roots of teeth, and then the patients were forbidden to have the offender removed until the swelling had gone down. The pendulum is now well over the other side. Quite recently a patient of mine of long standing, a most cleanly lady, whose mouth was very carefully kept, was told by a distinguished surgeon to come to me because she had pyorrhœa, yet all that was wrong was a little grey tartar that accumulates and is periodically removed. She was much disturbed, but quite ready, had I so recommended, to have all her teeth removed.

There must be no mistake, however. There are cases of pyorrhœa to-day the treatment for which is certainly extraction, and just as certainly there are cases of septic auto-inoculation due to pyorrhœa just as there are cases of so-called rheumatism due to gonorrhœa; but fortunately for the future of the race it is not considered necessary to remove the organ from which the sepsis is absorbed, nor is it necessary to remove the teeth save in exceptional cases until at any rate all curative measures have been tried. There are cases of pyorrhœa that I have seen with quite severe symptoms which have entirely cleared up after a voyage or long holiday which appear to be due to some want of resistance in the individual or constitutional disturbance as though the disease was a manifestation of some distant bacterial invasion, which revived health had cured.

I fear a great number of young people who are having their teeth removed and having artificial substitutes are laying up for themselves and others a rather unhappy state of affairs. It is well known to dentists how difficult it is to keep the lower denture in place in an old edentulous mouth, and I fear dinner parties in the near future will be accompanied by a clatter of porcelain that will make conversation trying, to say the least of it. I was lunching recently at a house where the clattering of the lower denture against the upper one was most noisy and disconcerting. The public nowadays talks pyorrhœa somewhat in the same way a few years ago it talked appendicitis. I was at Llandrindod Wells for three weeks at Easter, and in the hotel the one subject of conversation was pyorrhœa and its treatment by certain of the doctors there, who, the patients said, for pains and aches in limbs and joints advised extraction of teeth. I venture to enter into this controversy purely with the object of pleading for a little less heroic treatment, for, after all, wooden legs are poor substitutes for the genuine article, and many a limb condemned at first sight by the surgeon has subsequently been saved by treatment and patience.

All pyorrhœa does not require extraction, that is the truth and needs insisting on, and which Sir James Goodhart has helped by his timely letter to establish. I am, Sir, yours faithfully,

Cavendish-square, W., August 24th, 1914. MORTON SMALE.

To the Editor of THE LANCET.

SIR,—I have read the correspondence on oral sepsis in THE LANCET with much interest. Some time ago 22 hearts were shown at one medical meeting. They were all found to be infested with micro-organisms identical with those found in the patients' tooth sockets. Not long since one of my patients developed a febrile condition which was at first obscure. A bacteriological examination was made and pathogenic germs found round a crowned tooth stump. In spite of treatment the patient died. The heart was infected by these micro-organisms and no doubt caused death.

For many years I suffered myself from dyspepsia, constant "colds," &c. I decided my teeth were to blame, and I had them all out against the advice of my dentist and some medical friends. I have never regretted it. I am better in every way and do not mind the very slight difficulties of speech and mastication. The affectionate manner in which some people cling to hideous old wrecks of teeth, that offend the eyes and nasal organs of their friends, may say much for their constancy but little for their good taste.

I am, Sir, yours faithfully,
W. J. MIDELTON, M.R.C.S. Eng.,
Bournemouth, Sept. 7th, 1914. L.R.C.P. Lond.

ARTHRITIS DEFORMANS OF THE HIP-JOINT.

To the Editor of THE LANCET.

SIR,—Will you kindly give me leave to say that I am exceedingly gratified to find the authors of the paper on Osteo-arthritis of the Hip, published in THE LANCET of August 8th, agreeing with me that so-called sciatica is often, if not always, a symptom of the oncoming of that crippling disorder?

I ventured—greatly daring—to enunciate this opinion in my little book on "Sciatica, a Fresh Study," published more than a year ago, which I had come to long before then; and I feel confident as time goes on this view will be more and more accepted as correct, and that, as the authors say, "in all cases of so-called sciatica investigation of the movements of the hip should be undertaken."

I have been refreshing my memory by a reperusal of Dr. Adam's, of Dublin, "Treatise on Rheumatic Gout." We have travelled a long way from accepting the evidences furnished by morbid anatomy as *explaining* the natural history of disease. The new field of biological chemistry and the part played by the closed glands are leading us far from the dry bones of the old solidist pathology.

Whether sciatica as referring only to the sciatic nerve is a misnomer, seeing that the anterior crural branches seem more or less frequently affected, as Dr. R. Ll. J. Llewellyn and Dr. A. Bassett Jones have found, only strengthens the arguments in favour of a genuine morbus coxæ, which was the point I wished to prove. I may here be allowed to explain that all the records I have given in my book were of private and not of hospital cases, and therefore not so complete as they would have been had I had the good fortune to have better opportunities of studying them at leisure in hospital.

I am, Sir, yours faithfully,
Dingwall, August 30th, 1914. WILLIAM BRUCE.

THE SURGEON'S POLE.

To the Editor of THE LANCET.

SIR,—In reply to Mr. H. A. Lediard in your issue of August 8th perhaps the following quotation from a book dated 1853 in my library may indicate in which direction to search for further information on the matter: "These two companies (Barbers & Surgeons) were, by an act of Parliament passed in the 32 Henry VIII. c. 41, united and made one body corporate, by the name of the Barbers and Surgeons of London." This Act, however, at once united and separated the two crafts. The barbers were not to practise surgery further than drawing of teeth; and the surgeons were strictly prohibited from exercising "the feat or craft of barbery or shaving." The surgeons were allowed yearly to take, at their discretion, the bodies of four persons after execution for felony, "for their further and better knowledge, instruction, insight, learning, and experience in the said science or faculty of surgery;" and they were, moreover, ordered to have "an open sign on the street-side where they should fortune to dwell, that all the king's liege people there passing might know at all times whither to resort for remedies in time of their necessity." The nature of the sign is not stated, but may be in the Act itself. It is further stated that "the privileges of this company were confirmed in various subsequent charters, the last bearing date 15th April, 5th Charles I. By the year 1745 it was discovered that the two arts which the company professed were foreign to and independent of each other. The barbers and the surgeons were accordingly separated by Act of Parliament, 18th Geo. II., and made two distinct corporations." The footnote references are as follows: Pennant's London, p. 255; Stat. of the Realm, vol. i., p. 794; Edmondson's Compl. Body of Heraldry; Strype's edit. of Stow's Survey of London, b. v., ch. 12. Further particulars may also be found in "The History of Signboards," by Jacob Larwood and John Camden Hotten, published by the latter at London in 1866 (second edition), pp. 341–5, and a note on p. 25.

I am, Sir, yours faithfully,

August 30th, 1914. LUCUS.

ANNUAL REPORT OF THE MEDICAL OFFICER OF HEALTH OF BRISTOL.—The report issued for the past year by Dr. D. S. Davies, medical officer of health of Bristol, is more portly than any of its predecessors. It includes reports from the medical inspector of schools, a report on the work of the midwives in Bristol, remarks on the schools for mothers, a description of the administration of sanatorium benefit, and so on. The steady increase of all these subsidiary branches of the report gives a vivid idea of the growth of hygienic activities in recent times. A list of the principal voluntary hospitals and dispensaries in the city brings out the astonishing fact that in spite of the growing activity of the State in the care of the sick about 140,000 persons were treated charitably in 1913. This constitutes over one-third of the population of the city. Allowance must, of course, be made for the fact that many hospital patients are counted more than once, but even if a substantial margin be set aside for this one is constrained to wonder what is left for private practice after the charitable institutions and the State insurance and other services have been accounted for. The infant mortality rate remained low—97·5—and the birth-rate —22·4—continues the slight rise which was manifested in 1912 for the first time after a steady decline lasting over many years. Scarlet fever was very prevalent during 1913, a total of 1738 cases being recorded, as against 580 in the preceding year; but the case mortality was very low, only 0·3 per cent. The hospital accommodation was so inadequate that less than half the cases in which transference to the hospital was recommended by the practitioner in charge could be removed. The number of beds provided by the fever hospitals is only two-fifths of the total number that should be available according to the regulations of the Local Government Board. The enteric fever total—64—is the smallest recorded in the city's history, and of these only 5 were fatal. The report calls attention to another direction in which there is a deficiency in the institutional accommodation; there are no beds for advanced cases of phthisis apart from 97 beds provided for pauper patients. In regard to the treatment of tuberculosis, it is noted that the number of new patients that attended the municipal dispensary in 1913 was 696, as against 885 in 1912, when it was at work on a voluntary basis. During the year 474 insured persons and 13 dependents received sanatorium benefit—211 in sanatoriums, 147 in the dispensaries, and 129 at home. The senior tuberculosis officer, Mr. C. J. Campbell Faill, gives a summary of his results with tuberculin in something over 100 cases, and claims that material benefit was realised in over 40 per cent. Finally, there are several points of interest in regard to the care of infants and children. The registered midwives called in medical practitioners in 437 cases out of a total of 4854 attended by 77 midwives. It is noteworthy that out of 23 cases of puerperal fever notified during the year 3 were attended by medical men.

THE WAR.

THE MEDICAL EXAMINATION OF RECRUITS.

CONSIDERING the unprecedented numbers in which the young men of our country have been offering themselves lately as recruits for the regular and territorial armies, it is scarcely to be wondered at that some delays have occurred in dealing with them at various centres. The war came upon us suddenly, and the immediate setting up of sufficient recruiting stations to cope with a great wave of enthusiasm for military service has thrown a considerable strain upon the War Office and the bodies acting in concert with it, especially when it is remembered that the paramount duty for the first week or two of the war was to mobilise an expeditionary army and despatch it to the continent. The normal number of recruits drafted into the regular army in time of peace is probably not more than 35,000 in a year. During the past month, according to the Prime Minister's statement at the Guildhall, between 250,000 and 300,000 men have been accepted for service. These figures speak for themselves, and it would have been surprising if hitches and delays had not occurred at the outset. The machinery for recruiting cannot suddenly be expanded on a vast scale and put into smooth working order without some initial friction and confusion. At first the complaints in the public press were that the recruiting offices were inadequate in number to deal with the host of eligible applicants. This, however, was soon remedied. Then it was alleged—and the complaint is still being widely voiced—that large numbers of would-be recruits were being held up or turned away because the medical examining staff was quite insufficient. With this grievance we propose to deal shortly, since it is of direct interest to our readers, and representations of various kinds have been made to us upon the subject. Thus, for instance, we hear of civilian practitioners of good attainments who directly they heard of the need for more medical examiners offered their services to the War Office, but have so far not been called upon to relieve the overworked officers of the Royal Army Medical Corps by assistance in this direction. That such offers have been gratefully noted by the authorities we have every reason to believe; but we understand that only in the case of territorial battalions, which are, of course, quite independent of Lord Kitchener's army, have the services of civilian medical men been requisitioned for passing recruits—at least to any considerable extent. The reasons for this decision appear to be twofold. In the first place it is held to be desirable that the responsibility for certifying recruits as medically fit for service in the regular army should rest with regular officers in the Army Medical Service; and, secondly, the requirements as to physique, eyesight, and general suitability for active service are searching and of a very precise kind in the case of recruits for the regular army, and the Army Medical Department holds that this is work for experts alone—that is to say, for medical officers specially trained in the selection of the raw material for fighting. The Territorial Force is considered to be on a different footing, and the medical tests and standards are far less stringent. A consideration of these points will enable us to understand why many eligible young men have had to wait to the uttermost limit of patience before "passing the doctor," and why, on the other hand, certain public spirited practitioners whose circumstances have prevented them from applying for commissions in the Royal Army Medical Corps have not so far been allowed to help where their help seemed to be urgently needed. We are told that arrangements have now been made to facilitate enlistment throughout the country and to ensure that delays in the medical examination of recruits are reduced to a minimum. The army is still far short of the numbers needed for the successful conclusion of this great war, but system and foresight at headquarters will no doubt smooth away present difficulties. And if the drain upon the regular officers of the Army Medical Service, due to casualties at the front and other causes, should produce a real shortage of medical examiners at home we are assured that the offers of assistance from civilian practitioners will not be overlooked by those in authority.

RED CROSS WORK IN GERMAN LINES.

Mr. S. Osborn has been in charge of a Red Cross contingent in Belgium since the commencement of the war. The following notes by one of his assistants reached us on Sept. 9th from Brussels.

We have just returned to Brussels after spending a week at Gembloux treating German casualties from the battlefields around Namur and Aizeau. During that period about 350 Germans passed through our hands, and altogether we must have seen 1500 or more cases. At first some of the Germans refused to be treated by us, and as we were not allowed to help the wounded prisoners we had time on our hands in which to observe the German medical corps on active service. It cannot be said that their methods impressed us favourably. Among the cases that came under us for assistance wounds of the extremities were at least three times more common than in other parts, the upper extremity suffering equally with the lower. In the gunshot wounds there was the usual small wound of entrance with the larger one of exit, which was suppurating in 60 per cent. of our cases, showing that the German first field dressing is not a very efficient preventive against sepsis. The wounds of entrance healed rapidly, there was no sinus left, the typical wound at the end of four days being represented by a suppurating patch of tissue about an inch in diameter at the place of exit. We saw few fractures, but such as occurred were severe and compound. Several of these had been treated at dressing stations with plaster-of-Paris splints—a dangerous practice when the men were unable to be kept under observation for some time. A Hanoverian officer with his left arm in a plaster-of-Paris splint came to us and complained of pain in the hand. On examination Mr. Osborn found no evidence of circulation, and at the end of 45 minutes' work with a razor, as we had no clippers, the splint was removed. It had been intended that this man should have gone on to Liège, an eight hours' journey, without further medical attention. The German transport for wounded was very poor indeed; except for four light ambulance wagons, about 2000 wounded were evacuated through Gembloux on improvised farm carts, each cart containing a little straw and carrying about 12 men. The scheme was to collect the cases from the battles round Namur and Aizeau, to use Gembloux as the railhead, and to hurry all the cases without discrimination back through Liège to Germany. We saw one man, who was shot through the pubes, taken from bed, dressed in full kit with his rifle slung, and dragged along on foot to the station. Here the only accommodation provided for the wounded consisted of cattle trucks in which wooden benches had been placed, no space being left on the floor for the badly wounded. Of the great discomforts and the foul atmosphere of such a journey we can speak for ourselves, since we were compelled to use this means to return to Brussels. The feeding of the patients at our hospital was in charge of a German orderly, and here, again, there was a total lack of discrimination. Black bread and German sausage or fat bacon were provided every day, and if a man were too ill to eat such fare he went without. Fresh milk was impossible to obtain, but our nurses managed to secure condensed milk and weak coffee for a few of the gravest cases. We saw several operations in the big base hospital. It was a curious sight; a most extraordinary mixture of asepsis and filthy work. For instance, the region round the wound was shaved, yet half the hairs fell into the wound; the surgeon washed his hands most carefully, and then touched the cigar which he smoked all the time; the instruments were carefully sterilised by boiling, and then placed on a towel which had been used for the instruments for the last 20 operations. Big collections of pus and blood on the table were ignored, the only means of removal appearing to be on the uniform of the next patient. Anæsthetics were seldom given, and it must be said that the fortitude of both French and German was remarkable. Nearly every case witnessed consisted of removal of bullets from a suppurating part. Treatment consisted in enlarging the wound, probing and extracting with long forceps, and then forcing a way through the tissues with the forceps to the most dependent part, where a second incision was made, when a gauze wick was inserted. The authorities would not allow Mr. Osborn to perform any operation, but in one case, a French soldier, who had a wound just below the skin in the left thigh, he extracted the bullet by means of a razor borrowed from a soldier standing by.

ANTITYPHOID INOCULATION.

An advertisement emanating from the *Animals' Guardian* has been brought to our attention by several correspondents. It seeks to convince the public that the benefit of antityphoid inoculation is a delusion. The letter which we publish this week from the Presidents of the Scottish Royal Colleges, in supplement to letters already published from Sir William Osler and Sir William Leishman, writing as guardians of the health of the army, should dispose of the contentions of the editor of the *Animals' Guardian*. Probably none of our readers want converting or convincing, but we would draw attention to the Italian experience in the matter which is recorded in our columns this week.

CASUALTIES TO OFFICERS OF THE ROYAL ARMY MEDICAL CORPS.

In the supplementary lists of casualties published since our last issue the following are members of the Royal Army Medical Corps:—Killed: Captain A. S. Williams. Wounded: Captain M. Leckie, Captain H. M. J. Perry, and Captain C. W. Holden. Missing: Major J. H. Brunskill, Major H. W. Long, Captain G. H. J. Brown, Captain W. Crymble, Captain P. Dwyer, Captain C. T. Edmunds, Captain J. H. Graham, Captain H. B. Kelly, Captain P. C. T. Davy, Captain E. S. B. Hamilton, Captain H. C. Hildreth, Captain A. D. O'Carroll, Captain G. H. Rees, Captain M. Sinclair, Captain W. C. Smales, and Captain A. C. Vidal. Lieutenant M. K. Nelson, Lieutenant T. H. Bell, Lieutenant P. P. Butler, Lieutenant E. Davies, and Lieutenant H. J. S. Shields.

TEETH AND RECRUITING.

The fact that a large number of men have been rejected as recruits on account of their teeth has called forth protests from several quarters, but the opinions expressed show that they are not inspired by exact knowledge. Some of the statements have been a reflection on those responsible for the medical examination of the recruit because they did their duty. The dental standard has, as a matter of fact, during the present recruiting been considerably relaxed, and only those the conditions of whose mouths made them liable to break down from actual malnutrition have been rejected. That even under these generous conditions a large number of men have had to be rejected is no surprise to those specially conversant with dentistry. To disregard the condition of the teeth of recruits entirely would in our opinion be unsound practice, and would only mean in the near future the invaliding home of a number of men. The South African war taught this lesson. Laymen do not seem to realise that many of those rejected can easily be made efficient by dental treatment, and at the present moment the dental hospitals throughout the country and many private practitioners are busily engaged in voluntarily carrying out the work and adding thousands of efficient recruits to the army.

STERILISATION OF WATER-SUPPLIES FOR TROOPS ON ACTIVE SERVICE.

An interesting and valuable report from Professor G. Sims Woodhead, Lieutenant-Colonel R.A.M.C.(T.) Sanitary Service, includes a method of testing and sterilising water that should be known to those in charge of the water-carts supplying troops on active service.

EASTERN AND WESTERN MILITARY GENERAL HOSPITALS.

In our last two issues we published the names of the medical and surgical staffs which became available upon the mobilisation of the territorial general hospitals in London and in the north of England, together with some information as to the method of organisation. This week we give corresponding details in the case of the military general hospitals of the east and of the west, from which it will be seen that these hospitals also are excellently served in respect of both personnel and materiél.

First Eastern General Hospital.—During time of peace the office of this hospital is at 39, Green-street, Cambridge. The officer in command is Colonel J. Griffiths, and Major F. E. A. Webb and Quartermaster and Hon. Lieutenant R. H. Porter are attached. The day following receipt of orders for mobilisation the unit assembled in the New Museums, Cambridge, where it has since been quartered. In the course of two more days the whole of the extra personnel, 69 men, required to bring the unit from peace to war strength were recruited and are now in training. The nurses were ordered up on August 9th, and the full complement came into residence at Downing College, where they now are. The members of the *à la suite* staff, medical and surgical, were all notified and the necessary proportion have already taken up duty. The Leys school, where dormitories and beds were available to meet emergencies, was occupied on August 18th, and have since been occupied with casualties from the troops located here and in East Anglia. On August 30th the patients were transferred to Nevile's Court, Trinity College, which has been prepared as a temporary open-air hospital. The cloisters in this court have been adapted, and in it there are 256 beds and a large operating room to meet all requirements. The additional 264 beds are accommodated in tents erected on the paddocks behind the College. The Leys school was evacuated in order not to interfere with the educational work of the institution, and Trinity College is to be likewise evacuated, so as to avoid disturbing the usual work of the College. The provision for the wounded after the first week in October is being arranged for. Up to August 31st the patients here included only casualties among the troops, but on that date the first batch of 170 wounded from the front arrived. The authorities concerned have afforded the commanding officer every possible facility to carry out the work of preparation. On mobilisation the following physicians and surgeons form the staff:—Lieutenant-Colonels: Sir T. Clifford Allbutt, K.C.B., Mr. G. E. Wherry, Dr. J. B. Bradbury, and Dr. F. Deighton. Majors: Dr. L. Humphry, Mr. A. Cooke, Dr. E. L. Jones, Dr. F. W. Burton-Fanning, Mr. H. A. Ballance, Dr. J. A. Wright, Dr. P. S. Hichens, and Dr. R. A. Milligan. Captains: Dr. H. H. Brown, Mr. J. C. W. Graham, Dr. G. F. Rogers, Dr. G. S. Haynes. Dr. B. H. Nicholson, Dr. W. Malden, Mr. S. W. Curl, Dr. J. F. Gaskell, Mr. D. Mallam, and Mr. E. J. Y. Brash. In addition the work of the British Red Cross (Cambridgeshire), under the county director, the Rev. C. F. Townley, is well in hand and thoroughly organised as regards accessory hospital accommodation, transport of wounded, and collection and distribution of clothing. Other organisations are in being for help to the relatives who may journey here to visit the sick and for the collection and distribution of suitable literature.

Second Eastern General Hospital.—During time of peace the office of this hospital is at 117, Gloucester-road, Brighton. The officer in command is Major J. A. Rooth, and Lieutenant H. J. Walker and Quartermaster and Hon. Major T. F. H. Briscoe are attached. The hospital has been established in the new buildings of the Brighton Grammar School, situated in the Dyke-road, in a well-elevated, open, healthy position. The school consists of two main blocks, the school building and the boarding house, and is eminently suitable for a military hospital. Here there are about 300 beds, the remaining 220, to make up the establishment number, being placed at Stanford-road council school quite close by. In addition a large private house opposite the hospital is used as a barracks by the men of the unit, and the nurses are housed in the convent at The Upper Drive. The hospital contains a well-equipped operating theatre, where already many operations have been performed. There are an X ray room, with all the necessary apparatus for skiagraphy, a consulting-room for the treatment of minor casualties, a dispensary, where all the prescriptions are made up, and a mortuary; also rooms for the administrative staff, such as the administrator's office, the registrar's office, rooms for the matron, for the theatre sister, and for the nursing committee, who are responsible for the collection and distribution of the many gifts of fruit, tobacco, linen, &c., which are pouring in on the hospital. The school was occupied on August 7th, and was ready for the reception of patients in less than a week. About 50 cases of illness and accident were admitted in August. On August 31st a telegram arrived from the War Office with the information that 300 patients would arrive the next morning. All the necessary arrangements were rapidly completed at the hospital, a fleet of motor-cars and ambulances was collected, and on the morning of Sept. 1st, within two hours of the arrival of the first train at Brighton Central Station, 300 men were transported from train to ward without a hitch. Those who were well enough were sent to the bath-rooms, whilst the more serious cases were put to bed and got under treatment as soon as possible by the medical officers. On mobilisation the following physicians and surgeons form the staff. Lieutenant-Colonels: Dr. E. Hobhouse, Mr. R. F. Jowers, Dr. E. F. Maynard, and Dr. F. J. Paley. Majors: Dr. W. Broadbent, Mr. W. W. Griffin, Dr. D. G. Hall, Mr. A. H. Buck, Dr. C. F. Bailey, Dr. T. H. Ionides, Dr. F. G. Bushnell, and Mr. W. A. Bowring. Captains: Dr. R. Whittington, Dr. W. H. Brailey, Mr. H. H. Taylor, Dr. H. Gervis, Mr. G. Morgan, Dr. C. H. Bonham, Dr. L. A. Parry, Dr. A. M. Colcutt, Dr. R. Sanderson, Dr. J. Shardlow, Dr. A. J. Hutchison, Mr. C. N. Chadborn, Dr. A. G. Bate, Mr. M. N. J. Rigby, Dr. A. M. Daldy, Mr. R. P. Nash, Mr. W. R. Wood, Mr. H. N. Fletcher, and Dr. F. A. S. Hutchinson. Of these Colonels Paley and Maynard, Majors Buck, Bowring, Hall, and Bailey, and Captains Taylor, Parry, Bate, Whittington, Wood, Daldy, Hutchinson, Gervis, Chadborn, Shardlow, Brailey, and Colcutt have been called up, leaving 13 other medical officers to be called on when necessary. The nursing staff is made up of a principal matron, a matron, with about 30 sisters and 90 nurses. These are all fully trained and carefully selected, and every credit must be given to them for the assistance which they have given in the perfecting of the hospital arrangements. The administrator, Major Rooth, with the assistance of his staff of officers, non-commissioned officers, and men (every one of whom has thrown himself heart and soul into the work), must be heartily congratulated on the rapidity and thoroughness with which they have converted an empty building into an up-to-date and well-equipped military hospital, with 350 patients under treatment, both medical, surgical, and operative, all in less than a month from the declaration of war. Thanks to the excellent treatment the men are receiving, a good number, it is believed, will be fit again to take their places in the ranks. The men are receiving visitors constantly, and those who are not so incapacitated as to have to keep to bed can at will call upon a motor-car and even a carriage and pair of horses with footman complete, quite a number of such luxuries being placed at their disposal. The local ambulance brigade did splendid work when the men first arrived, and at a given signal no fewer than 50 private motor-cars were available.

First Western General Hospital.—During time of peace the office of this hospital is at 73, Shaw-street, Liverpool. The hospital is now established at the Fazakerley Hospital. The telegram ordering mobilisation was received at 9 P.M. on August 4th, and all officers, non-commissioned officers, and men were at once notified, and the principal matron was ordered to warn her staff. As all the officers whose services are available only on mobilisation reside in Liverpool, and all nurses had been warned and could be available in a few hours, the hospital was practically mobilised on August 5th. On August 7th permission was received to occupy Fazakerley Hospital, and this could have been done at once, the third day of mobilisation, but was postponed until next day to suit the hospital arrangements. On August 8th the unit arrived at Fazakerley Hospital and occupied quarters in the annexe, where 120 beds were ready, and all preparations made for increasing at the rate of 120 a day if necessary. The surgical and medical apparatus and X ray equipment were accepted on loan. The services of a bacteriologist and specialist for venereal diseases were arranged for. On August 9th what was almost a second mobilisation took place. The men's quarters were removed from the annexe to the new hospital to hasten entire occupation of the new hospital and administrative block. The hospital was inspected on August 11th by the G.O.C. in C. and the D.D.M.S., who expressed their entire satisfaction. The first two patients were admitted at 9.30 P.M. on August 11th. Since that date patients have been regularly admitted and dismissed, and all arrangements are working smoothly. Various special conditions have been attended by specialists. The Liverpool corporation, the West Lancashire County Association, and the staff are all to be congratulated on the speed and efficiency with which mobilisation took place. The officer in command of the hospital is Lieutenant-Colonel A. B. Gemmell, and Major C. Rundle and Quartermaster and Hon. Lieutenant A. Naldrett are attached. On mobilisation the following physicians and surgeons form the staff: Lieutenant-Colonels: Mr. R. Parker, Sir James Barr, Mr. W. Alexander, and Sir Ronald Ross, K.C.B. Majors: Mr. F. T. Paul, Dr. T. Bushby, Mr. R. Jones, Mr. R. W. Murray, Dr. T. R. Bradshaw, Mr. E. A. Browne, Mr. J. Utting, and Dr. P. Davidson. Captains: Mr. J. R. Logan, Dr. J. M. Hunt, Mr. F. C. Larkin, Mr. W. Permewan, Mr. D. Douglas-Crawford, Mr. J. L. Roberts, Mr. C. T. Holland, Dr. R. J. Buchanan, Mr. R. A. Bickersteth, Dr. W. B. Warrington, Dr. H. Armstrong, Dr. J. Hay, Dr. T. R. W. Armour, Mr. R. E. Kelly, Dr. V. C. de Boinville, Dr. L. A. Morgan, Dr. K. W. Monsarrat, Mr. A. J. Evans, and Dr. Pantland Hick. Since the opening of the hospital 288 persons have been admitted, 66 have been discharged, and 222 remain.

Second Western General Hospital.—During time of peace the office of this hospital is at Manchester. The officer in command is Lieutenant-Colonel J. W. Smith, and Major F. H. Westmacott and Quartermaster and Hon. Lieutenant F. B. Wild are attached. The hospital has been established in the municipal secondary school, Whitworth-street (420 beds), and the Day Training College adjacent (120 beds). As buildings not constructed for a hospital and having to be adapted as such none better could be hoped for. The school has a public garden on one side and a playing ground on the other, and is situated within the ring of the four great railway stations, the furthest of them three-quarters of a mile distant. In a lofty, well-lighted basement are the staff kitchens and dining-rooms, and large linen, pack, stewards', and general stores, staff ablution rooms, and laundry. On the ground floor (after providing administrative rooms and dispensary) and the two floors above it are the wards, on each side of a broad central corridor, with large windows, good cross ventilation, and heated by radiators. An elevator large enough to carry a bed has been fitted, as well as X ray room and operating theatres. The Royal Army Medical Corps orderly staff are quartered on the top floor. The quarters for the nursing staff are in Hulme Hall, Victoria Park (a University hall of residence). In addition to the hospital in these buildings the Retreat of the Convent of the Cenacle, Alexandra Park, offered for hospital use and accommodating 150 beds, has been accepted by the General Officer Commanding in Chief, Western Command. On mobilisation the following physicians and surgeons form the staff: Lieutenant-Colonels: Mr. F. A. Southam, Mr. W. Thorburn, and Dr. E. S. Reynolds. Majors: Mr. A. H. Griffith, Sir W. Milligan, Dr. R. B. Wild, Mr. J. J. Cox, Mr. A. H. Burgess, Mr. J. H. Ray, and Dr. G. R. Murray. Captains: Mr. A. Wilson, Dr. R. T. Williamson, Mr. E. D. Telford, Dr. E. N. Cunliffe, Mr. P. R. Wrigley, Dr. C. H. Melland, Dr. W. J. S. Bythell, Dr. F. C. Moore, Dr. R. W. Marsden, Dr. G. Wright, Dr. G. E. Loveday, Dr. J. Wharton, Dr. A. Sellers, Mr. W. A. Hooton, Dr. A. Donald, Mr. H. H. Rayner, Dr. W. H. P. Hey, Mr. J. P. Buckley, Dr. F. E. Tylecote, Dr. D. E. Cope, and Mr. S. R. Wilson. From this it will be seen that the *à la suite* medical staff includes nearly all the honorary staff of the Manchester Royal Infirmary (except Mr. C. Roberts and Dr. A. Ramsbottom, who have gone with the 18th Field Ambulance, Expeditionary Force), and seven are professors in the Victoria University. The professors of clinical surgery and medicine, Mr. Thorburn and Dr. Reynolds, are officers in charge of the surgical and medical divisions of the hospital. Eye work is in charge of Mr. Griffith and Dr. Wharton; ear and throat work, Sir W. Milligan; skin, Dr. Wild, who has for the time, owing to the great pressure in recruiting work, been appointed district medical officer for recruiting, and all the members of the *à la suite* staff not called on in the first roster have been summoned to assist in this work. In addition to their surgical work Mr. A. Wilson is chief anæsthetist, Dr. Bythell is in charge of radiographic work, and Mr. Hooton of dental work. Bacteriological and pathological work will by the kindness of Professor S. Delépine be done at the Public Health Laboratory by Dr. Sellers and Dr. Loveday. The latter has already done many antityphoid inoculations. The staff of nursing sisters has been most carefully enrolled and kept since 1908 by Miss M. E. Sparshott, organising matron, now principal matron, with Miss E. E. F. Fletcher as matron and Miss Woodhouse as assistant matron. The secretary and registrar, Mr. F. H. Westmacott, has had much training in the work of a military hospital since his appointment in 1908, and the officer commanding, Lieutenant-Colonel J. W. Smith, was in charge of the surgical division of the Ninth General Hospital, South African Field Force at Bloemfontein in 1900.

Third Western General Hospital.—During time of peace the office of this hospital is at 15, Newport-road, Cardiff. The officer in command is Lieutenant-Colonel D. Hepburn, V.D., and Major E. J. Maclean and Quartermaster and Hon. Lieutenant G. D. Purcell are attached. On mobilisation the following physicians and surgeons form the staff:—Lieutenant-Colonels: Dr. H. R. Vachell, Dr. T. Wallace, Dr. E. Le C. Lancaster, and Mr. O. E. B. Marsh. Majors: Dr. P. R. Griffiths, Dr. W. M. Stevens, Dr. C. Lewis, Dr. D. R. Paterson, Dr. B. W. Broad, Dr. A. Howell, and Mr. W. F. Brook. Captains: Mr. C. A. Griffiths, Mr. R. C. Elsworth, Dr. H. A. Schölberg, Mr. W. J. Greer, Mr. T. M. Thomas, Mr. W. Nicholson, Mr. E. Reid, and Mr. F. G. Thomas.

THE ROYAL HERBERT HOSPITAL.—At the Royal Herbert Hospital, Woolwich, some 300 patients have recently been admitted from the seat of war. A large proportion of the patients are surgical cases, and have received wounds in action. The injuries are, speaking generally, not of a very severe character, and most of them are wounds of the lower extremity. All the patients are progressing and are already benefiting by the healing influences of that atmosphere of quietness and order that distinguishes a well-managed hospital, where everyone is busy but where there is no noise or confusion. The last party of invalids, numbering nearly 200, arrived at Well Hall Station on August 30th, at 5 A.M. The Eltham auxiliary of the Red Cross Society were in readiness and provided everyone with hot beef-tea. The whole convoy were immediately transferred to hospital and every patient was comfortably settled in bed, with a complete change of clothing, within an hour of arrival at the railway station. We understand that the patients in the Royal Herbert Hospital will by degrees be evacuated into smaller hospitals in the district and into civil hospitals, in rotation, the patients eventually passing to convalescent homes in various parts of the country. The institution will thus be periodically cleared for use as a place of reception for serious cases from the seat of war. In this connexion it is satisfactory to note that already a large proportion of the cases are convalescent, and that none are giving cause for anxiety.

SECOND LONDON (CITY OF LONDON) GENERAL HOSPITAL.—In our issue of August 29th we gave a list of the *à la suite* medical and surgical staff of this military general hospital which has been established at St. Mark's College, Chelsea, and the adjoining secondary school of the London County Council. The hospital, with its 520 beds, is now complete and ready for the reception of sick and wounded combatants. Lieutenant-Colonel Eustace M. Callender, the commanding officer, has been in charge of the work of organisation and equipment, and the transformation of buildings which were never designed for such a purpose into a large military general hospital has proved an arduous but at the same time a highly interesting task. By the exercise of system, energy, and foresight, and with much willing help from all subordinates, the new hospital was practically ready for use within a month of the mobilisation of the Territorial Force. The provision of sufficient sanitary accommodation was the main structural problem and this has been solved by constructing sanitary annexes. Other temporary alterations have also been carried out, and an electric lift to convey a stretcher to every floor has been installed both in the medical and in the surgical wing. In the surgical block, which occupies the secondary school buildings, a capital operating theatre has been provided. The wards vary in size from the large airy hall which was formerly the gymnasium to small chambers suitable for the reception of one or two officers. The grounds of the college adjoin Chelsea station, and the intervening wall has been demolished at one point to allow patients to be brought direct from the platform to the hospital down an improvised slope.

DUCHESS OF WESTMINSTER'S WAR HOSPITAL.—The Duchess of Westminster has helped to equip and organise a hospital of 200 beds for the treatment of the wounded on the continent, as we announced some weeks ago. The hospital has received the consent and approval of the War Office and of the British Red Cross Society, and is to be run on military lines. Sir C. Inigo Thomas, G.C.B., late Permanent Secretary of the Admiralty, is acting as chairman, and Mr. Ian Hamilton Benn, M.P., as honorary treasurer. Major H. E. M. Douglas, V.C., D.S.O., is appointed Commandant, and the following gentlemen comprise the medical and surgical staff: Mr. C. Gordon Watson, Dr. W. P. S. Branson, Dr. Harold Pritchard, Mr. Sydney Scott, Mr. J. S. Burn, and Mr. Dudley Stone. The services have also been obtained of a fully trained nursing staff and a complete unit of the St. John's Ambulance orderlies. The organisation of the hospital is now complete, and it awaits orders from the War Office. Subscriptions and donations are urgently needed for the maintenance of the hospital, and will be thankfully received by the treasurer. Cheques should be made payable to the Duchess of Westminster's War Hospital Fund, and should be sent to 82, Harley-street, London, W., and crossed "Drummond and Co."

THE ROYAL SANITARY INSTITUTE AND FIELD AMBULANCE DETACHMENTS.—In response to an appeal in the *Journal of the Royal Sanitary Institute* for 750 men to form field ambulance detachments the list was filled up in less than a week. Among those who enlisted were some of the staff of the institute and a number of members and associates whose attainments we understand made them specially acceptable to the authorities. When the detachments were formed the institute was asked by the Territorial headquarters to arrange at very short notice a series of lectures for the men, and in two days a course of training was arranged at the institute, including first-aid, personal hygiene, camp sanitation and water-supply, and demonstrations in bandaging were given to the whole of the 750 men. The members of council and others who have helped in giving these lectures are: Professor H. R. Kenwood, Dr. A. Beresford Kingsford, Captain A. J. Martin (2nd London Sanitary Company), Mr. E. H. T. Nash, Dr. M. S. Pembrey, Dr. Charles Porter, and Mr. W. C. Tyndale. The bandaging demonstrations have been undertaken by Dr. Louis C. Parkes. A number of members of the institute have also sent in their names for the 2nd London Sanitary Company or offered assistance in the sanitary service of the country.

DUBLIN AND THE WAR.—Our own correspondent writes:—"Disappointment has been felt in medical circles in Dublin at the failure of the British Red Cross organisation to make use of the unit which had been formed at its suggestion in Dublin. Some weeks ago a Dublin surgeon was invited by the authorities at Devonshire House to get together a party of ten surgeons, ten dressers, and 20 nurses to proceed abroad as a Red Cross unit. The unit was reported to be complete within a couple of days. It was strongly manned, nearly all the surgeons being members of the staffs of one or other of the Dublin hospitals. After a fortnight's waiting they were advised last week that they might disband, as the War Office was not likely to require any more Red Cross units for a considerable time. The reason for such a decision by the War Office is not clear. It is understood that a unit manned in London was countermanded by the War Office at the same time. The members of both units must have been put to considerable inconvenience and some expense, which no doubt they will cheerfully bear. It is to be hoped that the official medical arrangements are so perfect that no outside aid is required."

Our correspondent also writes: "The various Dublin hospitals have been requested by the War Office to state what accommodation they can provide for wounded soldiers. All of them are setting aside a certain number of beds for the purpose, most of them a proportion of about 25 per cent. of their total accommodation."

THE DEPENDENCE OF RUSSIA ON IMPORTED MEDICINES: UNPATRIOTIC DRUGGISTS.—Prince Michail Obolensky, writing in the *Novoie Vremya* on the subject of medicines for the Russian army, says that prices have greatly increased, and he urges the interference of the Government. He adds that there are scarcely any medicines of Russian production, so that Russia is bound to turn to allies or neutral countries for her supplies. Another note in the same paper says that all the Russian houses that deal in medicines have raised their prices by 25 per cent. The Red Cross Society particularly protests against this advance, and has resolved to take measures to protect itself against the exactions of these firms.

THE HEALTH OF THE SWISS ARMY.—Our own correspondent in Zürich writes, under date Sept. 2nd: The sudden command of the Federal Government called the complete Swiss army to arms in the first days of August. The rapidity of the mobilisation was astonishing, as some 300,000 soldiers were under arms within two days and distributed all over the country and on all the frontiers in five or six days. Now the Landsturm, comprising men over 45, is slowly being dismissed. Owing to the clemency of the weather and the good sanitary arrangements only 44 deaths have been reported among the troops during August. Five of these were due to sunstroke, five to delirium tremens, six to suicide following mental derangement, and 13 to accidents. Two succumbed to typhoid fever, and the rest of the deaths followed various illnesses. The whole of the army was vaccinated or revaccinated. As regards infective diseases, seven cases of scarlet fever and 11 of typhoid fever have been announced. The typhoid fever cases were placed in hospital and measures taken to prevent any epidemic spread of the disease. Anti-typhoid inoculation is general.

NAVAL MEDICAL APPOINTMENTS.—"M.R.C.S." calls our attention to the dearth of news in this respect in our Service columns. There has been a very comprehensible scarcity of news from the Admiralty with regard to appointments in the Royal Navy, especially in the medical service. Now that mobilisation is complete few additional appointments are to be expected at present. We have published regularly all appointments which have been gazetted.

OLD PUBLIC SCHOOLS AND UNIVERSITY BATTALIONS.—The committee of the Old Public Schools and University Men's Force still urge all old public school and university men who are eligible for the force to come forward at once and enlist. Five battalions are being formed, and they will not be split up into smaller sections.

The London headquarters are at 66, Victoria-street, Westminster, and there are provincial recruiting offices at some 50 large centres.

Queen Charlotte's Hospital has undertaken to receive for their confinements any women amongst the Belgian refugees.

COLONIAL LOYALTY.—Mr. Norton Griffiths, M.P., and Mr. Arthur du Cros, M.P., have been authorised by Lord Kitchener to enrol all those colonials and overseas men resident in this country and desiring to serve together in a special infantry battalion or battalions. Applicants should apply to the Infantry Recruiting Office, White City, Shepherd's Bush (Uxbridge-road entrance), where arrangements have been made for medical examination and enrolment. Pay and rations will commence immediately. All those ex-colonials who could not be accepted for the 2nd King Edward's Horse are specially invited to apply.

FIELD GLASSES FOR THE ARMY.—Lord Roberts has appealed for field glasses for the use of officers at the front, with the result that a stream of callers at the National Service League offices, 72, Victoria-street, S.W., have promptly responded. In a few hours 500 glasses were received.

THE Ambulance Committee of the Metropolitan Asylums Board has decided to take steps for building ten motor ambulances on account of the calls that have been made on the ambulance service of the Board.

NATIONAL MEDICAL UNION.—At a meeting of the council of the Union on Sept. 5th the following resolution was passed:—

> That the council of the National Medical Union is prepared to submit a list of its members who are willing to place their services in various capacities in their districts at the disposal of the War Office.

THE LATE LIEUTENANT-COLONEL B. H. MUMBY, R.A.M.C. (T.F.).—In reference to the successful organisation on a war footing of the Fifth Southern General Hospital at Portsmouth, noted in THE LANCET of August 22nd, p. 531, it should be mentioned that for the last year or two Lieutenant-Colonel Mumby had worked hard in planning the arrangements recently so successfully carried into effect. He died at the age of 58 on April 29th when returning in a motor-car from Southampton. He had been in ill-health a considerable time previously. Up to the day of his death he fulfilled many onerous duties of a public character. He became medical officer of health of Portsmouth in 1884, and held the post for some ten years. In 1896 he was appointed medical superintendent of Portsmouth Borough Asylum. The son of Colonel Mumby, who at one time commanded the 3rd V.B. Hampshire Regiment, his services were early engaged in that battalion, to which he became surgeon, ultimately attaining the rank of Lieutenant-Colonel, R.A.M.C. (T.F.), and the command of the Fifth Southern General Hospital, in regard to which his excellent work obtained much commendation. He left a widow and several children.

THE NATIONAL RELIEF FUND.

SUBSCRIBE to the Prince of Wales's National Relief Fund.

To H.R.H. THE PRINCE OF WALES,
BUCKINGHAM PALACE, LONDON.

I beg to enclose £ s. d. as a donation to the National Relief Fund.

Name ____________________

Address ____________________

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The envelope containing this coupon need not be stamped.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—At examinations held in August the following candidates passed in the subjects indicated:—

Surgery.—D. Aucutt (Sections I. and II.), King's College Hospital; H. S. Baker (Sections I. and II.), St. Bartholomew's Hospital; A. G. Bodman (Sections I. and II.), Bristol; L. B. Clarke (Section II.), Cambridge and St. Mary's Hospital; W. E. K. Coles (Sections I. and II.), University College Hospital; L. S. Daly (Sections I. and II.), Manchester; J. A. W. Ebden (Sections I. and II.), Westminster Hospital; C. de W. Gibb (Sections I. and II.), Guy's Hospital; R. M. Handfield-Jones (Sections I. and II.), St. Mary's Hospital; G. W. Maw (Sections I. and II.), University College Hospital; A. N. Minns (Sections I. and II.), Guy's Hospital; T. S. Nelson (Sections I. and II.), Oxford and St. George's Hospital; G. D. Newton (Sections I. and II.), Durham; H. T. Roberts (Sections I. and II.), St. Mary's Hospital; M. P. dos Santos (Sections I. and II.), Louvain; R. H. Simpson (Sections I. and II.), St. Bartholomew's Hospital; C. R. Smith (Sections I. and II.). Guy's Hospital; L. H. Terry (Sections I. and II.), St. Bartholomew's Hospital; and J. A. Watson (Sections I. and II.), London Hospital.

Medicine.—D. Aucutt (Section I.), King's College Hospital; H. S. Baker (Sections I. and II.), St. Bartholomew's Hospital; A. G. Bodman (Sections I. and II.). Bristol; P. H. Burton (Section I.), London Hospital; W. E. K. Coles (Sections I. and II.), University College Hospital; L. S. Daly (Sections I. and II.), Manchester; C. D. Day (Sections I. and II.), St. Bartholomew's Hospital; J. A. W. Ebden (Sections I. and II.), Westminster Hospital; C. de W. Gibb (Sections I. and II.), Guy's Hospital; R. M. Handfield-Jones (Sections I. and II.), St. Mary's Hospital; G. W. Hassall (Sections I. and II.), Birmingham; H. R. Ibbotson (Sections I. and II.), Leeds; G. L. Lawlor (Section I.), St. Mary's Hospital; A. N. Minns (Sections I. and II.). Guy's Hospital; T. S. Nelson (Sections I. and II.), Oxford and St. George's Hospital; G. D. Newton (Sections I. and II.), Durham; L. E. Pimm (Sections I. and II.), King's College Hospital; R. H. Simpson (Sections I. and II.), St. Bartholomew's Hospital; C. R. Smith (Sections I. and II.), Guy's Hospital; and L. H. Terry (Sections I. and II.), St. Bartholomew's Hospital.

Forensic Medicine.—D. Aucutt, King's College Hospital; H. S. Baker, St. Bartholomew's Hospital; A. G. Bodman, Bristol; P. H. Burton, London Hospital; W. E. K. Coles, University College Hospital; L. S. Daly, Manchester; J. A. W. Ebden, Westminster Hospital; C. de W. Gibb, Guy's Hospital; R. M. Handfield-Jones, St. Mary's Hospital; A. N. Minns, Guy's Hospital; T. S. Nelson, Oxford and St. George's Hospital; G. D. Newton, Durham; L. E. Pimm, King's College Hospital; R. H. Simpson, St. Bartholomew's Hospital; C. R. Smith, Guy's Hospital; L. H. Terry, St. Bartholomew's Hospital; and E. M. Townsend, Middlesex Hospital.

Midwifery.—D. Aucutt, King's College Hospital; H. S. Baker, St. Bartholomew's Hospital; A. G. Bodman, Bristol; P. H. Burton, London Hospital; W. E. K. Coles, University College Hospital; V. H. M. A. Dangerfield, Paris; J. A. W. Ebden, Westminster Hospital; C. de W. Gibb, Guy's Hospital; A. E. Gravelle, King's College Hospital; R. M. Handfield-Jones, St. Mary's Hospital; A. N. Minns, Guy's Hospital; T. S. Nelson, Oxford and St. George's Hospital; H. B. Padwick, London Hospital; L. E. Pimm, King's College Hospital; R. H. Simpson, St. Bartholomew's Hospital; F. Simpson, London Hospital; C. R. Smith, Guy's Hospital; and L. H. Terry, St. Bartholomew's Hospital.

The Diploma of the Society was granted to the following candidates, entitling them to practise Medicine, Surgery, and Midwifery:—L. B. Clarke, G. W. Maw, H. T. Roberts, M. P. dos Santos, J. A. Watson, H. S. Baker, A. G. Bodman, W. E. K. Coles, V. H. M. A. Dangerfield, L. S. Daly, C. D. Day, J. A. W. Ebden, C. de W. Gibb, R. M. Handfield-Jones, A. N. Minns, T. S. Nelson, R. H. Simpson, C. R. Smith, and L. H. Terry.

ST. THOMAS'S HOSPITAL: OLD STUDENTS' DINNER.—In consequence of the war and the absence of so many St. Thomas's men on naval and military duty it has been decided to postpone the old students' dinner which was announced for Oct. 1st.

SOUTH-WEST LONDON MEDICAL SOCIETY.—At a council meeting of this society held on Sept. 3rd it was decided unanimously that the twenty-first annual dinner, which was announced in these columns, should be postponed indefinitely on account of the war.

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

PHILP, C. HASTINGS, M.B., B.C. Cantab., has been appointed Honorary Anæsthetist to the Herefordshire General Hospital.

THOMPSON, ROBERT BUSHER, M.B., Ch.B. Vict., has been appointed Public Vaccinator for Brixham (Devon).

WEBB, CHARLES C., B.A., M.B., B.C. Cantab., D.P.H. Vict., has been appointed Medical Officer for the Yatton District by the Long Ashton (Somerset) Board of Guardians.

Whincup, Frank, M.R.C.S., L.R.C.P., F.R.C.S. Edin., has been appointed Physician to the Royal Salop Infirmary.

Wright, Bertram E., M.B., Ch.B. Edin., has been appointed House Surgeon at the Royal Albert Hospital, Devonport.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

Banbury, Horton Infirmary.—House Surgeon. Salary £120 per annum, with board and residence.

Barnstaple, North Devon Infirmary.—House Surgeon. Salary £100 per annum, with board, residence, and washing.

Belgrave Hospital for Children, Clapham-road, S.W.—House Surgeon and House Physician for six months. Salary at rate of £75 per annum, each with board, residence, and washing.

Birmingham City Asylum, Rubery-hill.—Junior Assistant Medical Officer. Salary £200 per annum, with apartments, board, laundry, &c.

Birmingham, City Fever Hospital, Little Bromwich.—Assistant Medical Officer. Salary £200 per annum, with board, residence, and laundry.

Birmingham General Dispensary.—Female Resident Medical Officer, unmarried. Salary £240 per annum, with apartments, fire, lights, and attendance.

Birmingham and Midland Hospital for Skin and Urinary Diseases. —Clinical Assistant for three months, afternoon attendance only. Salary at rate of 52 guineas per annum.

Birmingham Union.—Dudley-road Infirmary: First Assistant Medical Officer, Second Assistant Medical Officer, and Fourth Assistant Medical Officer. Salaries at rate of £225, £180, and £160 per annum respectively. Erdington Infirmary and Cottage Homes: Assistant Medical Officer. Salary at rate of £180 per annum. Selly Oak Infirmary: Assistant Medical Officer. Salary at rate of £160 per annum. Apartments, rations, laundry, and attendance in each case.

Birmingham, Yardley-road Sanatorium and Anti-Tuberculosis Centre.—Third Assistant Medical Officer. Salary £200 per annum, with board and residence.

Bodmin, Cornwall County Asylum.—Junior Assistant Medical Officer. Salary £225 per annum, with quarters, board, laundry, and attendance.

Brentford Union Infirmary, Warkworth House, and Schools, Isleworth, W.—Second Assistant Medical Superintendent, unmarried. Salary £200 per annum, &c.

Bristol Royal Hospital for Sick Children and Women.—Female House Physician Salary £100 per annum, with board, rooms, attendance, and laundry.

Buxton, Derbyshire, Devonshire Hospital.—Assistant House Physician for six months. Salary £100 per annum, with apartments, board, and laundry.

Cancer Hospital, Fulham-road, S.W.—Two House Surgeons for six months. Salary £100 per annum each.

Canterbury, Kent County Asylum, Chartham.—Junior Assistant Third Medical Officer, unmarried. Salary £250 per annum, with apartments, lighting, heating, attendance, laundry, &c.

Carshalton, Surrey, Queen Mary's Hospital for Children.—Assistant Medical Officers. Salary at rate of £250 per annum, with board, lodging, and washing.

Chelsea Infirmary, Cale-street, S.W.—First Assistant Medical Officer. Salary £200 per annum, with board, washing, apartments, &c.

Cheltenham General Hospital.—House Physician and House Surgeon, unmarried. Salary £100 per annum each, with board, lodging, and washing.

Cheshire County Council.—Two District Tuberculosis Officers. Salaries £350 per annum.

Derby, Derbyshire Education Committee.—Temporary Assistant School Medical Officer. Salary £300 per annum.

Derby, Derbyshire Hospital for Sick Children.—Female Resident Medical Officer. Salary £80 per annum.

Epping Rural District Council.—Medical Officer of Health. Salary £100 per annum. Isolation Hospital: Medical Superintendent. Salary £200 per annum. Union: District Medical Officer and Public Vaccinator. Salary £125 per annum.

Exeter, Royal Devon and Exeter Hospital.—Assistant House Surgeon for six months. Salary at rate of £200 per annum, with board, apartments, and washing.

Great Northern Central Hospital, Holloway-road, N.—House Physician and House Surgeon for six months. Salary at rate of £60 per annum, with board, lodging, and laundry.

Great Yarmouth Hospital.—House Surgeon, unmarried. Salary £140 per annum, with board, lodging, and washing.

Guildford, Royal Surrey County Hospital.—House Surgeon. Salary £100 per annum, with board, residence, and laundry.

Halifax Royal Infirmary.—Second and Third House Surgeons, both unmarried. Salaries £120 and £100 per annum respectively, with residence, board, and washing.

Hampstead General and North-West London Hospital.—Two Female Resident Casualty Officers for Out-patient Department, Bayham-street, Camden Town, N.W., for six months. Salary at rate of £50 per annum, with board, residence, and laundry.

Harris, Parish of, Outer Hebrides.—Two Medical Practitioners, one for North and one for South Harris. Salary £300 per annum, &c., tax free.

Hornsey Education Committee.—Temporary Assistant School Medical Officer. Salary £175 per annum.

Hospital for Consumption and Diseases of the Chest, Brompton. —House Physician for six months. Salary 30 guineas.

Huddersfield Royal Infirmary.—Junior Assistant House Surgeon. Salary £80 per annum, with board, residence, and washing.

Hull Royal Infirmary.—Senior House Surgeon, unmarried. Salary £150 per annum, with board and apartments. Also Assistant House Surgeon. Salary at rate of £100 per annum, with board and lodging.

Hull, Victoria Children's Hospital, Park-street.—Female Resident House Surgeon. Salary £60 per annum, with board and laundry.

Ilford Urban District Council.—Medical Officer of Health, School Medical Officer, and Medical Superintendent of the Infectious Diseases Hospital. Salary £525 per annum.

Kent Education Committee.—Temporary School Medical Inspector. Salary at rate of £300 per annum.

Leeds Public Dispensary.—Two Resident Medical Officers. Salaries £130 per annum, with board, residence, and laundry.

Leicester, North Evington Poor-law Infirmary.—Two Assistant Medical Officers. Salary £200 per annum each, with apartments, rations, laundry, and attendance.

Leicester Royal Infirmary.—Assistant House Surgeon for six months. Salary at rate of £100 per annum, with board, apartments, and washing.

Liverpool, Royal Southern Hospital.—Two House Physicians and Three House Surgeons for six months. Salary at rate of £60 per annum, with board and residence.

Maidstone, Kent County Asylum.—Second Assistant Medical Officer, unmarried. Salary £280 per annum, with board, quarters, attendance, washing, &c.

Manchester, Hulme Dispensary, Dale-street, Stretford-road.—House Surgeon. Salary £180 per annum, with apartments, attendance, coal, and gas.

Manchester Northern Hospital for Women and Children, Park-place, Cheetham Hill-road.—House Surgeon. Salary £120 per annum, with apartments and board.

Manchester Poor-law Institution, Crumpsall.—Second Resident Assistant Medical Officer. Salary £135 per annum, with rations, apartments, fire, light, washing, and attendance.

Merstham, Surrey County Asylum, Netherne.—Assistant Medical Officer, unmarried. Salary £230 per annum, with board, lodging, and laundry.

Middlesbrough, North Riding Infirmary.—Senior House Surgeon for six months. Salary at rate of £100 per annum, with board, apartments, and laundry.

Mile End Old Town Infirmary.—Junior Assistant Medical Officer. Salary £140 per annum, with board, lodging, and washing.

Miller General Hospital for South-East London, Greenwich-road, S.E.—Resident Medical Officer and Junior House Surgeon. Salaries £150 and £85 per annum respectively, each with board, residence, and laundry.

National Sanatorium, Benenden, Kent.—Assistant Medical Officer. Salary £120 per annum, with board, lodging, and laundry.

Nottingham City Asylum.—Junior Assistant Medical Officer, unmarried. Salary £200 per annum, with board, apartments, and laundry.

Nottingham General Dispensary.—Assistant Resident Surgeon, unmarried. Salary £180 per annum, with apartments (not board), attendance, light, and fuel.

Nottingham General Hospital.—Senior House Physician. Salary £120 per annum, with board, residence, and laundry.

Peterborough Infirmary.—House Surgeon, unmarried. Salary at rate of £150 per annum, with residence, board, and laundry.

Plaistow Fever Hospital, London, E.—Female Second Assistant Medical Officer for temporary duty. Salary at rate of £100 per annum, with rooms and all found.

Poplar Hospital for Accidents, Poplar, E.—Senior Resident House Surgeon. Salary at rate of £150 per annum, with board and residence.

Preston Royal Infirmary.—Resident Medical and Surgical Officer. Also Assistant Resident Medical and Surgical Officer. Salaries £150 and £120 per annum respectively, with board, residence, and laundry.

Queen Charlotte's Lying-in Hospital, Marylebone-road, N.W.—Assistant Resident Medical Officer for four months. Salary at rate of £50 per annum, with board, residence, and washing.

Rochester, St. Bartholomew's Hospital.—Resident House Physician for six months. Salary at rate of £110 per annum, with board, residence, and laundry.

Rotherham Hospital.—Assistant House Surgeon. Salary £110 per annum, with board, lodging, and washing.

Royal Dental Hospital, Leicester-square, W.C.—House Anæsthetist three afternoons a week.

Royal Ear Hospital, Dean-street, Soho, W.—Honorary Radiographer.

Royal Waterloo Hospital for Children and Women, S.E.—Junior Resident Medical Officer. Salary at rate of £70 per annum, with board and washing.

St. Mary's Hospital for Women and Children, Plaistow, E.—Assistant Resident Medical Officer. Salary at rate of £100 per annum, with board, residence, and laundry.

St. Peter's Hospital for Stone, &c., Henrietta-street, Covent Garden, W.C.—Junior House Surgeon for six months. Salary at rate of £75 per annum, with board, lodging, and washing.

Salford Royal Hospital.—Resident Surgical Officer. Salary at rate of £120 per annum. Also House Physician. Salary at rate of £110 per annum. Also House Surgeon, Junior House Surgeon, and Casualty House Surgeon. Salary each at rate of £100 per annum. All for six months, with board and residence.

Salisbury (General) Infirmary.—House Surgeon. Salary £100 per annum, with apartments, board, and lodging. Also Assistant House Surgeon, unmarried. Salary £75 per annum.

Sheffield, East-End Branch of the Children's Hospital.—House Surgeon. Salary £120 per annum, with board and residence.

Sheffield University, Department of Pathology.—Junior Demonstrator of Pathology. Salary £200 per annum.

SHERBURN HOSPITAL, near Durham.—Medical Officer. Salary £300 per annum and house.

SHREWSBURY, ROYAL SALOP INFIRMARY.—House Physician, unmarried. Salary at rate of £110 per annum, with board and apartments.

SOUTH LONDON HOSPITAL FOR WOMEN, 88 and 90, Newington-causeway, S.E.—Two Female Clinical Assistants in Out-patient Department on Monday and Tuesday afternoons respectively.

SOUTH SHIELDS, INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY.—Junior House Surgeon. Salary £115 per annum, with residence, board, and washing.

TRURO, ROYAL CORNWALL INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with rooms, board, and washing.

TUNBRIDGE WELLS GENERAL HOSPITAL.—House Physician, unmarried. Salary £100 per annum, with board residence, &c.

VICTORIA HOSPITAL, Blackpool.—House Surgeon. Salary £150 per annum, with residence, board, and laundry.

VICTORIA HOSPITAL FOR CHILDREN, Tite-street, Chelsea, S.W.—House Surgeon for six months. Salary £40, with board, lodging, and washing.

WALSALL AND DISTRICT HOSPITAL.—Senior House Surgeon. Salary £150 per annum, with board, residence, and laundry.

WARRINGTON INFIRMARY AND DISPENSARY.—Junior House Surgeon. Salary at rate of £120 per annum, with board, apartments, and laundry.

WARRINGTON, LANCASHIRE COUNTY ASYLUM, Winwick.—Assistant Medical Officer, unmarried. Salary £250 per annum, with board, apartments, attendance, and washing.

WEST BROMWICH AND DISTRICT HOSPITAL.—Assistant Resident House Surgeon and Anæsthetist, unmarried. Salary £100 per annum, with board, residence, and washing.

WEST HAM AND EASTERN GENERAL HOSPITAL, Stratford, E.—Senior House Physician. Salary £120 per annum. Also Junior House Physician and Junior House Surgeon. Salary £100 per annum Board, residence, and washing provided in each case.

WHITEHAVEN AND WEST CUMBERLAND INFIRMARY.—Resident House Surgeon. Salary £120 per annum, with board, washing, and attendance.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House Surgeon and Resident Medical Officer, both for six months. Salary at rate of £125 per annum, with board, rooms, and laundry.

WOMEN'S HOSPITAL FOR CHILDREN, 688, Harrow-road, W.—Dental Surgeon. Salary 25 guineas per annum.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies for Certifying Surgeons under the Factory and Workshop Acts at Buncrana, in the county of Donegal; at Carrickfergus, in the county of Antrim; and at Leven, in the county of Fife.

Births, Marriages, and Deaths.

BIRTHS.

GAITSKELL.—On August 30th, at The Cottage, Lympstone, S. Devon, the wife of Charles E. Gaitskell, M.R.C.S., L.R.C.P. Lond., of a son.

HOLROYDE.—On Sept. 6th, at Barnsley, Yorks, the wife of Douglas Holroyde, M.A., M.B., B.C., of a son.

MORLAND-SMITH.—On Sept. 2nd, at The Hive, Exeter-road, Bournemouth, the wife of T. Morland-Smith, M.R.C.S., L.R.C.P. Lond., of a son.

MARRIAGES.

BROWNE—BILLINGTON.—On Sept. 1st, at the Parish Church, West Kirby, by the Rev P. A. Millar, uncle of the bride, F. Guy Fountain Browne, M.B., Ch.B. Liverp., younger son of the late Alfred Fountain Browne, Esq., and Mrs. Fountain Browne, of Oxton, to Andrina Katherine, eldest daughter of Mr. and Mrs. E. R. Billington, of West Kirby.

ROBERTSON—SEDDON.—On Sept. 1st, at Painswick Church (quietly on account of the war), by the Rev. W. H. Seddon, vicar, and father of the bride, William Robertson, M.B., Ch.B. Glasg., son of Andrew B. Robertson, of Kelvinside, Glasgow, to Dorothy, second daughter of the Rev. W. H. Seddon.

DEATHS.

BAIN.—On August 24th, at Straythorpe, York Place, Harrogate, Leslie Curtis, younger son of William Bain, M.D., F.R.C.P., aged 18 years.

BARNES.—On Sept. 6th, at Dorchester, Lieutenant-Colonel R. W. Barnes, R.A.M.C. (retired).

DENZILOE.—On Sept. 3rd, at Felixstowe, William Le Gros Denziloe, M.D., L.R.C.P. Edin., M.R.C.S. Eng., L.S.A., son of the late Dr. Matthew Denziloe, of Bridport, Dorset, aged 72 years.

GASKELL.—On Sept. 7th, at "The Uplands," Great Shelford, Walter Holbrook Gaskell, M.D., F.R.S., aged 66 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

During the continuance of the war the size of THE LANCET *will be curtailed. This has been necessitated primarily by the difficulty in ensuring an adequate supply of paper, but the contributions of most of our correspondents on the continent have failed, and will fail, to reach us. Many special features of* THE LANCET *have had to be sacrificed for the time, and while we ask the indulgence of our readers for this, we promise to restore them at the earliest possible opportunity.*

SLEEPING SICKNESS IN NYASALAND.

THE Diary of Mr. A. H. Barclay, the Acting Principal Medical Officer of Nyasaland, Part XXIII., carries this series of investigations into the incidence of sleeping sickness in the Protectorate from Dec. 31st, 1913, to May 30th, 1914. In that period 20 cases have been diagnosed, bringing the total number of cases discovered in the Protectorate up to 192. Two of the previously reported cases have died during this period. Of the 20 new cases now reported there have been 11 deaths recorded. Cases have now occurred over practically the whole fly area of the Protectorate. A particularly interesting case is No. 133, previously reported, in which the diagnosis was made on May 19th, 1913, and Dr. Conran now reports him as still alive and apparently well. He takes food well and appears well nourished, complains of no pain, and plays all day. No œdema or other physical signs. Temperature normal. No trypanosomes found at last three examinations, but trypanosomes were found at previous examinations in both smears and fresh blood, and the Royal Society's Commission used a citrated specimen of his blood for inoculation and obtained a strain of trypanosomes. On this case Mr. Barclay remarks that there can be no possible doubt of his infection with T. rhodesiense, and if his health remains good he will be the first recorded recovery from that infection in Nyasaland. The first case recorded in this series (1908) also recovered, but the species of trypanosome was not clearly established.

VIRULENT INSECTS.

To the Editor of THE LANCET.

SIR,—A month ago I was at La Smallah, Ault-sur-Mer, France, and I woke up on Friday morning, August 7th, to find my face covered with itching pimples. My wife presented a similar crop. On comparing notes with the other members of the household—all told we were ten—it was found that my sister-in-law and her little girl of 3 had each a few bites—bites they evidently were. They occupied a room directly over ours, which was on the ground floor front. The other members of the family were unaffected; two of these, a little boy and a maid, occupied a front room. On looking round for an explanation I was struck by the fact that a revolving light near the house illuminated most strongly our room and the room over it. An old manure heap in a corner of a vegetable garden was quite close to the house.

Amongst our acquaintances in the village we saw no signs of similar attacks. Our spots soon became more indurated, red, itching, and larger. Before lighting-up time that evening windows and shutters were firmly closed, and we went to bed with muslin shields round our heads. The unusual conditions and itching made it difficult to sleep. There soon began a bombardment of our shields by numerous buzzing insects. After an hour of this I turned the light on, but the enemy, quickly taking advantage of natural recesses and defiles, were not revealed by the searchlight. Having smoked under bed and bedclothes the greater part of an article humorously described in Ault as a cigar, cost 1½*d*., I turned in again, feeling that now I had done for them, though I had also nearly done for myself. They allowed me 10 minutes to indulge this pleasing fancy *en route* to dreamland, but no sooner was the frontier in sight than the attack was renewed with increased vigour, a vigour such as precluded all possibility of reaching the promised land.

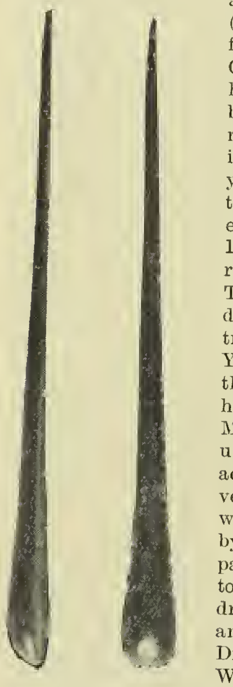
Towards morning an hour's sleep which tired nature exacted by way of rehabilitation was not regarded as an armistice by the unconscionable enemy, and the interval was a costly one for us, as the opposing forces negotiated the secret passages in the fortifications and inflicted serious punishment. There were 24 red monticuli, Vesuvius-like prominences visible on my forehead and cheeks alone; my hands and shoulders were adorned still more profusely. My wife's right eye was completely closed with œdematous lids, upper and lower, a Carpentier-like piece of execution.

The others in the house again showed comparative immunity. I got the manure heap removed and the site dug up; it was the only nidus apparently capable of rearing such a villainous family. Closing up the room completely for 12 hours, fumigating it with burning paper and formalin, was an accessory process adopted. We subsequently slept with open windows, and were subjected to no more inconvenience. For the past six years we have spent the greater part of the summer in the same villa, and have never previously been so attacked.

Is the experience a common one? The few insects that we succeeded in capturing presented the mosquito characters, but whether of the culex or anopheles or other species I cannot determine.

I am, Sir, yours faithfully,
D. T. Barry, M.D. R.U.I., F.R.C.S. Eng.,
Professor of Physiology, University College, Cork.

"PERKINS'S METALLIC TRACTORS."



The "metallic tractors" used for the relief of pain and disease by Dr. Elisha Perkins, (1745–1799), an American physician, for a long time president of the Connecticut Medical Society, were hammered out of iron and brass, being flat on one side and half-round on the other, and came in pairs, "the white" and "the yellow." After the inventor's death the tractors were commercially exploited, the price in London in 1802 being five guineas. They gave rise to a satirical poem "Terrible Tractoration" and also to much discussion on the merits of the treatment. Dr. A. B. Judson of New York writes that in 1884 four of them were found in the house of his grandfather at Plymouth, Massachusetts, where they had lain undisturbed for many years. The accompanying photo-engraving shows very nearly their size. Many cures were alleged to have been wrought by drawing them over the affected part. Doubtless specimens are yet to be found in cupboards and bureau drawers of old houses in America and England. Letters patent to Dr. Perkins, signed by President Washington, are said to be in the possession of the inventor's descendants at Springfield, Massachusetts, U.S.A.

THE EXETER INSURANCE COMMITTEE.

At the last meeting of the Exeter Insurance Committee it was reported that 2500 persons had not selected a "panel doctor," when one of the committee remarked that "they would never do so."

VITAL STATISTICS OF BERMUDA.

According to the Blue-book of Bermuda, just received at the Colonial Office, the resident civilian population is estimated at 19,935 persons—viz., 7060 white and 12,875 coloured. The birth-rate in the year 1913 was 31·25 (22·37 per 1000 white and 36·11 per 1000 coloured), and the death-rate 16·25 per 1000. The infants registered as born out of wedlock were in the proportion of 15·3 per 100 births (2·9 white and 19·6 coloured). The European infantile mortality per 100 living births was 11·2, the lowest rate for many years. The coloured rate also showed a marked decrease, being 16·3 per cent., as against 30·6 in 1910, 30·55 in 1911, and 20·0 in 1912. The deaths of children under 5 years of age formed 37·3 per cent. of the total deaths, excluding stillbirths, as compared with 47·8 in 1911 and 40·8 in 1912. Comparing white and coloured children under 5 years, the death-rate per 100 living births was 12·7 for white and 21·7 for coloured, as compared with 15·0 and 23·9 per cent. respectively in 1912. The deaths from cancer numbered 13 (5 white and 8 coloured), equivalent to a rate of 0·65 per 1000. The total rainfall in 1913 was 49·98 inches. There is no hospital maintained by the Colonial Government, but during 1912 an Act was passed outlining the building of a general hospital to be known as the King Edward VII. Memorial Hospital. The erection of the building has been commenced, and it is expected that a portion of it will be ready for use in 1915. There is a cottage hospital near the city of Hamilton which is supported by voluntary contributions, and hospitals are also maintained in connexion with the Imperial naval and military establishments. In the lunatic asylum there were at the end of the year 67 patients. The number of tourists arriving in the colony in 1913 was 21,595.

THE THERAPEUTIC VALUE OF THE POTATO.

To the Editor of The Lancet.

Sir,—In the memorandum from the Government referring to the shortage of certain drugs, with suggestions for economy, I note that, under the "Salicylate Group," it is suggested that in "many conditions loosely termed 'rheumatic' other drugs and measures be employed." Will you allow me to draw the attention of the profession to the preparations of the potato which will give speedy relief in these conditions? The reports which I have received from all parts fully bear out the results I gave in your issue of April 11th last. The directions for treatment are given in that number of The Lancet and also in the pamphlet on the Therapeutic Value of the Potato, published by Baillière, Tindall and Cox.—I am, Sir, yours faithfully,

Heaton C. Howard.

Nottingham-place, W., Sept. 7th, 1914.

VITAL STATISTICS OF ROME.

The British Consul (Mr. C. C. Morgan) mentions in his annual report that the population of Rome at the end of 1913 was returned at 596,463, this total including the garrison and the fluctuating population. There were during the year 15,122 births and 10,203 deaths, included in the latter being 3148 children under 5. The principal causes of death were: Pneumonia, 1404; enteritis, 977; consumption, 917; heart disease, 524; arterio-sclerosis, 484; nephritis 430; measles, 269; typhoid fever, 158; diphtheria, 63; and scarlet fever, 23.

WATERS OF TREBIZOND.

In a report on the affairs of the Turkish vilayet of Trebizond Mr. Satow, the British Consul, mentions that there is a spring at Kissarna, near the capital of the vilayet, of which the water is bottled and sold both locally and at Constantinople. It is a pleasant table water and has digestive properties. There is also a very similar spring near Surmeneh, which is also exploited in a small way. There are hot mineral baths (sulphur) three hours south of Bolaman, which are resorted to in the months of May and June by the people of the locality.

A FRENCH PHRASE-BOOK FOR NURSES.

A convenient little pamphlet of Useful French Phrases for Red Cross Work, for nurses, dressers, and other ambulance workers, can be had free on application to Hugo's Language Institute, 64 and 66 Oxford-street, 33 Gracechurch-street, and 205 Earl's Court-road. It contains some ordinary nursing questions and instructions, the names of the parts of the body, bandages, instruments, &c., with a phonetic rendering of the phrases which, if it fails to ensure an elegant French accent, would, if carefully followed, be undoubtedly intelligible to a Frenchman.

◆

M. A. T.—There are fairly good openings for women dispensers with the necessary qualifications. Since the Insurance Act came into force medical men have to a large extent been relieved of the work of dispensing, and therefore a position as a doctor's dispenser is difficult to get. But in the pharmacies of panel chemists and in public institutions women pharmacists are sometimes employed and are paid fair salaries. There is an association of women pharmacists with headquarters at Gordon Hall, Gordon-square, London, W.C., and women who think of adopting pharmacy as a career would be well advised to communicate with the honorary secretary.

J. MacA.—The Scottish Branch of the British Red Cross Society has its headquarters at 137, Sauchiehall-street, Glasgow. The country has been divided into four districts—the Western, Eastern, Central Eastern, and North-Eastern. The first includes Glasgow, the second Edinburgh, the third Dundee, and the fourth Aberdeen. The headquarters at Edinburgh are at 2, Frederick-street.

Communications not noticed in our present issue will receive attention in our next.

The following magazines, journals, &c., have been received :— The British Temperance Advocate, Peru To-day, Quarterly Review, Review of Neurology and Psychiatry, Monthly Cyclopedia and Medical Bulletin, Nordiskt Mediciniskt Arkiv, Journal of State Medicine, Canadian Journal of Medicine and Surgery, Archives of Internal Medicine, Sanitary Record and Municipal Engineering, Scientific American, The Post Graduate, Nederlandsch Tijdschrift voor Geneeskunde, &c.

Medical Diary for the ensuing Week.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

Monday.—10 a.m., Dr. Simson: Diseases of Women. 2 p.m., Medical and Surgical Clinics. X Rays. Mr. T. Gray: Operations. Dr. Pritchard: Bacterial Therapy Department. Mr. B. Harman and Mr. Gibb: Diseases of the Eye.

Tuesday.—10 a.m., Dr. Simson: Gynæcological Operations. 2 p.m., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

Wednesday.—10 a.m., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 2 p.m., Medical and Surgical Clinics. X Rays. Mr. Souttar: Operations. Dr. Simson: Diseases of Women. Mr. Gibb: Diseases of the Eye.

Thursday.—9 a.m., Dr. Bernstein: Bacterial Therapy Department. 2 p.m., Medical and Surgical Clinics. X Rays. Mr. T. Gray: Operations. Mr. B. Harman: Diseases of the Eye.

Friday.—10 a.m., Dr. Simson: Gynæcological Operations. 2 p.m., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

Saturday.—10 a.m., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Eye Operations. 2 p.m., Medical and Surgical Clinics. X Rays. Mr. Souttar: Operations.

LONDON HOSPITAL MEDICAL COLLEGE (University of London), London Hospital, Mile End-road, E.

Demonstrations in Clinical Medicine:—

Monday.—2.15 p.m., Dr. Wall: Pulmonary Tuberculosis. (Clinical Theatre.)

Tuesday.—2.15 p.m., Dr. Grünbaum: Diseases of the Blood. (Clinical Theatre.)

Wednesday.—2.15 p.m., Dr. Miller: Abdominal Diseases. (Out-patient Department.)

Thursday.—2.15 p.m., Dr. Thompson: Diseases of the Nervous System. (Clinical Theatre.)

Friday.—2.15 p.m., Dr. L. Smith: Common Cardiac Conditions. (Clinical Theatre.)

Saturday.—10.15 a.m., Dr. Hutchison: Demonstrations on Selected Cases. (Wards or Clinical Theatre.)

Demonstrations on Selected Surgical Cases and on Cases of Interest in the Wards of the Hospital:—

Monday.—2 p.m., Mr. Milne.
Tuesday.—2 p.m., Mr. Lett.
Wednesday.—2 p.m., Mr. Howard.
Thursday.—2 p.m., Mr. Warren.
Friday.—2 p.m., Mr. Walton.

THE THROAT HOSPITAL, Golden-square, W.

Monday.—5.15 p.m., Special Demonstration of Selected Cases.
Thursday.—5.15 p.m., Clinical Lecture.

ROTUNDA HOSPITAL POST-GRADUATE COURSES, Dublin.

Monday.—10 a.m., Obstetrical Lecture: Antepartum Hæmorrhage. 11 a.m., Examination of Patients and Minor Operations.

Tuesday.—10 a.m., Major Operations.

Wednesday.—10 a.m., Obstetrical Lecture: Antepartum Hæmorrhage (continued). 11 a.m., Examination of Patients and Minor Operations.

Thursday.—10 a.m., Major Operations.

Friday.—10 a.m., Gynæcological Lecture: Pelvic Infection 11 a.m., Examination of Patients and Minor Operations.

For further particulars of the above Lectures, &c., see Advertisement Pages.

EDITORIAL NOTICES.

It is most important that communications relating to the Editorial business of The Lancet should be addressed *exclusively* "To the Editor," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of The Lancet *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

The Index and Title-page to Vol. I. of 1914, which was completed with the issue of June 27th, were given in The Lancet of July 4th.

VOLUMES AND CASES.

Volumes for the first half of the year 1914 are now ready. Bound in cloth, gilt lettered, price 16*s.* carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

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The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

The Lancet Office, Sept. 9th, 1914.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Sept. 3	30·22	S.	...	117	78	58	58	58	Fine
" 4	30·11	E.	...	112	77	58	59	64	Fine
" 5	30·11	E.	...	108	67	60	56	62	Overcast
" 6	30·26	E.	...	121	71	61	60	63	Fine
" 7	30·17	S.E.	...	113	79	61	59	62	Fine
" 8	29·90	S.E.	...	121	77	62	66	69	Hazy
" 9	29·84	S.W.	...	121	78	62	62	66	Overcast

Communications, Letters, &c., have been received from—

A.—Australian Book Co., Lond.; Dr. M. H. Archibald, Derby; Mr. R. J. Albery, Lond.; Mr. E. Arnold, Lond.; American Medical Association, Chicago.

B.—Fleet-Surgeon P. H. Boyden, R.N., Lond.; Bristol Royal Infirmary, Secretary of; Bombay, Executive Health Officer of; Birmingham Corporation Sanatorium, Little Bromwich, Medical Superintendent of; Board of Agriculture and Fisheries, Lond.; Messrs. C. Birchall, Liverpool; Messrs. E. J. Burrow and Co., Cheltenham: Dr. E. Burnet, Lond.; Dr. S. Barwise, Derby; Brentford Union, Clerk to the; Messrs. T. B. Browne, Lond.; Messrs. R. and J. Beck, Lond.; Messrs. Burroughs Wellcome and Co., Lond.; Birmingham and Midland Hospital for Skin, &c., Diseases, Secretary of; Dr. W. Broughton-Alcock, Lond.; Dr. W. N. Barron, Lond.

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N.—Nottingham City Asylum, Clerk to the; North Devon Infirmary, Barnstaple, Secretary of; North British Rubber Co., Edinburgh; City of New York, Department of Health: *The Nursing Times*, Lond., Editor of; Norwood Sanatorium, Beckenham, Secretary of; National Medical Union, Lond., Hon. Secretary of; National Health Insurance Commission (England), Lond.

P.—Mr. F. R. Price, Lond.; The Press Bureau, Lond., Secretary of; Mr. L. A. Parry, Hove; Prudential Assurance Co. of America, Newark, U.S.A.

Q.—Queen Charlotte's Lying-in Hospital. Lond., Secretary of; Messrs. Quibell Bros., Newark.

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THE LANCET, SEPTEMBER 19, 1914.

The Lettsomian Lectures
ON
DYSENTERY.

Delivered before the Medical Society of London, 1914,

BY F. M. SANDWITH, M.D. DURH.,
F.R.C.P. LOND.,

GRESHAM PROFESSOR OF PHYSIC; LECTURER ON TROPICAL DISEASES, ST. THOMAS'S HOSPITAL, ETC.

LECTURE II. (PART II.)*

DIAGNOSIS OF AMŒBIC DYSENTERY.

IN the fourteenth century John Arderne wrote in London of the importance of a differential diagnosis between dysentery, hæmorrhoids, and cancer of the rectum, while his contemporary, John Mirfield, knew that dysenteric symptoms were not all due to the same cause. Five centuries later we learned that the differentiation between amœbic and bacillary dysentery, as also the distinction between true dysentery and diseases of the great intestine, such as cancer or the infiltration of Schistosomum hæmatobium, can only be made with accuracy when Entamœba histolytica has been searched for under the microscope. When amœbæ are found in fresh, warm stools, without contamination by urine, or when a fragment of mucus is placed on a warm slide, a pseudopodium may be seen to be protruding a new process, which makes it certain that you are not dealing with an epithelial or pus cell, or an air bubble or fat globule, or starch or proteid grains. If in a suspicious case amœbæ cannot be discovered, it may be worth while to pass a catheter into the rectum in order to examine the mucus which may become entangled in the eye of the instrument.

Rogers has rightly pointed out[6] that we are now furnished with an important practical help towards diagnosis by the discovery of the rapid curative action of emetine, because so far as we know at present this drug is only specific for amœbic dysentery. If the stools have not improved in number and character at the end of three days it is practically certain that the case in question is not one of pure amœbic dysentery. When in doubt as to the cause emetine may therefore be given as an aid to diagnosis, just as quinine has been used for many years to determine whether a fever is malarial or not. In Ceylon it is believed that many of the cases returned as dysentery in hospitals and dispensaries are really victims of ankylostomiasis. But the presence of the eggs of entozoa in the fæces should not preclude the possibility of a superinduced true dysentery, which may be amœbic or bacillary. Dr. Day lately informed me in Cairo that he had seen latent cases of bilharziasis of the rectum which became dysenteric when the host was invaded by amœbæ or bacilli; the rectal symptoms then yielded only to emetine or serum.

Lastly, it must not be forgotten that a patient may be suffering at the same time from the two chief types of dysentery. For instance, the returning pilgrims at El Tor, during the season 1910–11, showed a mixed infection of 90 cases out of a total of 328 dysentery admissions to the hospital. Rogers has recently analysed the most frequent errors of diagnosis in 1000 post-mortem examinations of medical patients in Calcutta.[7] He finds that the clinical diagnosis of amœbic dysentery has been misnamed tubercular or simple diarrhœa or peritonitis, while there have been single cases which were thought to be the following: Tubercular peritonitis, hepatitis, gangrene of rectum, intestinal obstruction, broncho-pneumonia, malaria fever, and anæmia.

TREATMENT.

There is an old superstition that nature ordains that an antidote to the ills of man shall be provided in close proximity to the source of evil. Those of us who in tender years learned this comforting doctrine from the nurses who pointed out the dock leaves growing not far from the stinging nettle may accept without surprise the fact that tropical South America provides for us Peruvian bark and Brazilian ipecacuanha, genera of the Rubiaceæ, and our chief armament in combating the two most widely spread tropical diseases, malaria, and amœbic dysentery.

Ipecacuanha.

Ipecacuanha is the root of Psychotria ipecacuanha, a small plant found in most parts of Brazil; this is known as Brazilian or Rio ipecacuanha, and is the only kind official in the British Pharmacopœia. Another variety imported from Colombia is known as Cartagena ipecacuanha; this is not official, though the United States Pharmacopœia admits both varieties. The term "ipecacuanha," derived from the language of the aborigines of Brazil, has been applied to a great number of emetic roots of South American origin. In an account of Brazil written by a Portuguese friar and published by Purchas in 1625 mention is made of three remedies for bloody flux, one of which is called igpecaya. In their work on the natural history of Brazil published at Amsterdam in 1648 Piso and Marcgraf described two plants to which the name was applied; one of these is now known to be the genuine ipecacuanha. The drug was in common use in Brazil at this time, but was not brought to Europe until 1672, when a traveller brought a quantity of the root to Paris. In 1680 a Parisian merchant became possessed of 150 lb. of the drug; it was largely prescribed by Helvetius, a Dutch physician practising in Paris, who kept its nature secret. The fame of the cures reaching the French Court, King Louis XIV. caused trials to be made, and as these were successful he accorded to Helvetius the sole right to sell the remedy. In 1688 the French Government purchased the secret from Helvetius for £800, and made the nature of the remedy public. The botanical source of ipecacuanha was not finally settled until 1800, when Dr. Gomez of the Portuguese Navy brought authentic specimens to Lisbon. As the remedy increased in demand numerous substitutes resembling the true drug came into use; in 1872 Professor Balfour enumerated 15 emetic roots used in various parts of the world and agreeing, to a certain extent, in being more or less annulated or striated externally. The destructive methods of collection employed in Brazil and the slow growth of the plant were responsible for a considerable scarcity of the drug, and numerous attempts have been made to cultivate ipecacuanha in India, Ceylon, and other tropical countries; a considerable quantity of a good quality of the drug is now exported from Singapore.

Supersession and Reintroduction of Ipecacuanha.

As an expectorant and emetic ipecacuanha held its own in Europe and India, but it soon ceased to

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* Lecture I. was published in THE LANCET of Sept. 5th (p. 637), and Part I. of Lecture II. on Sept. 12th (p. 683).

No. 4751.

be regarded as a specific for dysentery and was superseded for years by calomel and opium. In 1858, Surgeon-Major E. S. Docker again introduced large doses of ipecacuanha (20–90 grains) after opium, and only lost 1 out of 50 cases among British troops in Mauritius. As the consequence of its reintroduction into India the death-rate from dysentery in Madras fell from 71 to 13·5 per 1000, while in Bengal it was reduced from 88·2 to 28·8 per 1000. Fayrer states that nearly 11 per cent. of the cases among British soldiers used to be fatal, yet Docker had to wait until 1880 before he received any recognition of the important services he had rendered to mankind, when a gratuity of £400 was given him.[8] His treatment was found vastly more useful than the previous methods of bleeding, blisters, and mercury.

Forty years ago we were taught by Murchison that all cases of dysentery should be treated by one or two doses of ipecacuanha with an initial dose of laudanum and the application of a mustard leaf to the epigastrium, but when I was confronted with dysentery in Servia, Turkey, Egypt, and South Africa I failed to find that this remedy was a universal cure, and for some years almost entirely abandoned the use of ipecacuanha, putting my faith in the saline treatment, or in bismuth, tannigen, and tannic acid, with large enemata of nitrate of silver, sulphate of copper, or quinine.

I think it is now obvious that my failures, which were also experienced by many good clinicians in India and other tropical countries, were chiefly due to two facts: (1) we knew but little of the various types of dysentery, and when we met with no success or with very partial success we blamed the ipecacuanha, instead of discovering that we were very often aiming at bacilli with a weapon which we now know is only warranted to kill amœbæ; (2) we were taught to administer ipecacuanha in single doses, repeating it if it was vomited by the patient, and occasionally giving a third dose if necessary, but it was not the fashion to prolong the use of the drug. It hardly occurred to us to imagine that if slight temporary benefit occurred after one nauseous bolus, a permanent cure might be attained by continuing the remedy. Perhaps we should have been more persistent in our trials if we had had more faith in the wholly empirical remedy. The utmost that ardent supporters of the drug could tell us was that it was supposed to act on the liver and that extra bile was perhaps poured out to kill the unknown organism of dysentery and heal its ravages.

Thus ipecacuanha was again temporarily shelved in many dysentery countries until the use of it was revived by Sir P. Manson. When I first had the opportunity of seeing him prescribe it for amœbic cases by his own prolonged method, a dozen years ago, I confess to having felt very sceptical about its value. But I was at once impressed by observing that the house physicians, assistants, and nurses were all firm believers in the method and preferred it to other lines of treatment. Gradually, as amœbæ came more and more to the etiological front the scales fell from my eyes and I adopted the well-thought-out course of administration.

The patient is starved for four hours, say from 5 P.M.; at 8.45 P.M. a mustard plaster is applied to the epigastrium, the pillows are removed from beneath the patient's head, and 15 minims of laudanum in water are given to him. At 9 P.M. he has one dose of 30 grains of ipecacuanha, and to prevent vomiting he is kept absolutely at rest, the nurse being ordered to wipe his lips to prevent his even swallowing saliva for at least three hours, when he is allowed a small drink. The next night, with similar precautions, he is given 25 grains of the drug, preceded by 10 drops of laudanum. On the third night he takes 20 grains after 5 drops of laudanum. After this opium is no longer required and the ipecacuanha is gradually reduced to 5 grains and kept there till the course has lasted a fortnight, when the patient will have taken altogether 145 grains. The patients submit willingly to possible vomiting and rigid rest and make up by day for rather sleepless nights. The only improvement I have added to this method is that I give the drug in five-grain membroids or stearin-coated pills, which prevent absorption in the stomach.[9] Care must be taken that the capsules are not too well coated, for I once found an undigested membroid in the patient's fæces.

The Alkaloids of Ipecacuanha.

Pelletier in 1817 separated from ipecacuanha what he regarded as the emetic principle; this was named emetine.[10] His examination of the various American emetic roots in commerce showed important variations in their alkaloidal content. In 1894 and 1895 Dr. B. H. Paul and Mr. A. J. Cownley showed conclusively that the substance hitherto known as emetine was a mixture of several distinct bases; for one of these bases, itself uncrystallisable, but forming crystallisable salts, they retained the name emetine; the second base, which also formed crystallisable salts, they named cephaëline (the ipecacuanha plant was then known as Cephaëlis ipecacuanha). Traces of a third alkaloid were found, and this was afterwards named psychotrine.

The many varieties and substitutes for ipecacuanha were factors in themselves sufficient to militate against its successful use in dysentery; a further disadvantage was the emetic and depressant action of large doses. In 1890 Surgeon-Major Harris, of Simla, pointed out in a letter to THE LANCET[11] that de-emetinised ipecacuanha—meaning ipecacuanha freed from all its alkaloids—answered as well as ordinary ipecacuanha in the treatment of dysentery. Other investigators were unable to confirm this, and Bird showed in 1893 that some specimens of so-called ipecacuanha sine emetine contained up to 1·2 per cent. of alkaloid, whilst in other specimens the therapeutic value seemed proportional to the amount of alcohol-soluble extractive present, alkaloids being absent. Bird, and later Paul and Cownley, put in hand an examination of the non-alkaloidal extractive. It was found to have no emetic action in doses of 4–5 grains, but positive indications of any therapeutic activity appear not to have been obtained. Recently Finnemore has taken up the subject, but the results of any pharmacological investigations have not yet been recorded.

Official ipecacuanha root of good quality contains 2–3 per cent. of total alkaloids, of which emetine constitutes about 72 per cent., cephaëline 26 per cent., and psychotrine 2 per cent. In Cartagena ipecacuanha the emetine amounts only to about 40 per cent. of the total alkaloid, whilst the cephaëline reaches as much as 57 per cent. On account of the different proportion of the respective alkaloids, Cartagena ipecacuanha is excluded from the British Pharmacopœia. Of the two principal alkaloids cephaëline is regarded as the more active emetic but the less active expectorant. Chemically emetine is methyl-cephaëline, $C_{29}H_{40}O_4N_2$; Carr and Pyman have recently shown that psychotrine can be converted into cephaëline by reduction; a chemical relation between the three alkaloids is therefore established.[12] Several crystalline salts of the three alkaloids have been prepared and characterised.

Treatment by Emetine.

The use of ipecacuanha in dysentery was placed upon a scientific foundation by the observation of Vedder in 1910 that solutions of emetine, 1 in 100,000, have the power of destroying amœbæ of the A. limax type in broth culture.[13] Rogers confirmed this effect of emetine hydrochloride on Entamœba histolytica in dysenteric stools.

So early as 1829 emetine was employed with good effect by Bardsley, and again in 1890 Lieutenant-Colonel J. H. T. Walsh[14] administered it in dysentery with marked success. To Sir Leonard Rogers[6] our gratitude is due for his introduction of treatment by what is usually called the intramuscular, or, more accurately, the intracellular method. Like quinine the dose should *not* be administered immediately under the skin, for by this method, as usually recommended, painful lumps and bruises may occur. It is not necessary to insert the needle into the body of a muscle. The hydrochloride of emetine in sterile water is the most practical to use, and it may be injected three inches under the clavicle or elsewhere. I have never met with nausea or any other inconvenience except that there is very slight tenderness at the site on the day following the injection, and a few women have complained of slight muscular pain after a fortnight's course. An ordinary case requires half a grain of the salt morning and evening on the first day, after which the dose may soon be reduced to half a grain once a day; the reduction of the dose must be decided by the improvement in the patient and the stools. As no one yet knows for how long the treatment should be continued, and as I have seen several cases in London which had previously undergone a three days' treatment (without bismuth) in India, I have provisionally formed for myself the habit of giving daily injections for a week, and then injections on alternate days for a second week, and so far I have not met with any case which has relapsed after such dosage. By this routine method an ordinary case would get altogether about 6 grains, equivalent to 540 grains of ipecacuanha. In a gangrenous or critical case I should not hesitate to give $\frac{1}{2}$-grain, or even 1-grain, doses every four hours, if necessary. Emetine, when keratin-coated, may be given by the mouth at bedtime, but is liable to cause vomiting unless the ipecacuanha precautions are observed; it is not so rapid in its action as by the intracellular method.

As I have as yet had no experience of treating children with emetine, I may draw attention to two cases reported by Captain R. G. Archibald[15] from Khartum. One English girl, aged $2\frac{1}{3}$, passing 23 motions in the 24 hours, received injections of $\frac{1}{8}$ grain, which, spread over three weeks, amounted to a total of $2\frac{1}{6}$ grains. Her sister, aged 8 months, passing six motions, only required four doses, each of 1/12th grain, to get rid of all entamœbæ and symptoms. It is probable that children, as with ipecacuanha, will be found to be very tolerant of emetine. Captain Archibald, probably very wisely, recommends that emetine should be continually administered once a week or once a fortnight for a period of at least three months after the apparent cure of the patient.

When all symptoms have yielded to emetine and yet cysts reappear from time to time in the fæces, it is possible that ipecacuanha by mouth may succeed in banishing them more easily than a return to emetine injections. In support of this suggestion I may mention that a medical man from India consulted me lately about himself. He had undergone emetine treatment for dysentery in India, and had no symptoms except that he voided a little mucus, which contained hundreds of the so-called "minuta" cysts. He then injected himself every two or three days for two months with $\frac{1}{2}$ grain of emetine. The cysts persisted, but disappeared after ipecacuanha treatment by mouth.

Rogers has published some experiments carried out to determine the fatal dose of emetine hydrochloride; rabbits and monkeys were used, and, if we are to assume that man would be proportionately affected, he finds that the lethal dose for a man weighing 11 stones would be 15 grains intracellularly or 5 grains intravenously.[16]

There has been so great a demand for emetine during the last two years that its price has more than doubled, and in consequence a cheaper alternative has been put on the market, called "amebetine," which consists of the three known alkaloids of ipecacuanha unseparated from each other. I have tried it in a few mild cases with good results and without causing vomiting.

Emetine would seem not to have a cumulative effect in the system, for a medical man who had contracted dysentery abroad, and who consulted me last year, was so pleased with the effect of the drug on himself that he continued intracellular injections, each of $\frac{1}{2}$ grain, every night for three weeks, and then every other night for another three weeks, which makes more than 15 grains altogether. His last six injections were of amebetine. On coming to tell me of this protracted treatment, he said that he had never noticed nausea or any other discomfort. His appetite had steadily improved, his motions became of a darker brown colour, but still sometimes contained a little mucus.

Whether we employ emetine or amebetine, or whether any better derivative of ipecacuanha can be discovered in the future, we seem to-day to possess a chemical agent which can eventually destroy pathogenic amœbæ, not only in the laboratory, but also in the tissues and fluids of the living body. After 240 years of empirical use of ipecacuanha we can now dignify this drug as being parasitotropic for amœbic dysentery, and, what is better still, as monotropic, in Ehrlich's language—i.e., possessing a specific affinity for the protoplasm of the offending amœbæ, and yet being inert with respect to all the other constituents of the normal body.

During my recent visit to Ceylon I met an intelligent young English planter without medical training. He told me that he used to lose from dysentery about 40 imported Indian coolies every year in the labour force of 600 on his tea estate. He heard of emetine in 1913 and sent for some. He then treated all his cases of dysentery with the new drug, and during the following six months which comprised the dysenteric season he never lost a case. Dysentery is rife in all parts of Ceylon, and in 1911–12, 4576 cases were treated in the various Government hospitals, with 1665 deaths. One-fifth of the cases were treated in the Colombo hospital among vagrants and those whose drinking water comes from shallow unprotected wells. In the planting districts the disease is associated with an indifferent water-supply, but many patients under treatment for dysentery are really suffering from ankylostomiasis. Dysentery and diarrhœa are also the commonest diseases among Ceylon prisoners, for in the same year 2445 cases, with 125 deaths, were treated in the jail hospitals, including 758 cases, with 57 deaths, in Colombo.

Notes of Cases.

Many cases which come to us in private or at the hospital have, of course, been treated with all care and skill. Others have had no such fortune, and I should like to give the notes of a case to show how dysentery ought *not* to be treated, always remembering that the patient's own history of his case may not be strictly accurate.

CASE 3.—The patient, aged 27, an English baggage steward, was admitted into the Albert Dock Hospital in 1907. He stated that his dysentery had begun on leaving Penang for London, with 25 motions a day, blood, mucus, and tenesmus. He was immediately treated by the ship's doctor, who gave him a powder three times a day and a white mixture, followed by opium pills. During this voyage he was not kept in bed and was given ordinary food, and no ipecacuanha. On arrival in London he was still very ill and had 10 motions daily. He was then treated at his home in the country by a doctor for three weeks, who told him that no special diet was needed, but gave him a mixture and apparently thought lightly of the case, for he never inspected the fæces, though all details of the history had been supplied to him. The patient then left this doctor and dieted himself on light food, resting a great deal, though not actually in bed all day. This improved him so much that he went to sea again, though he still had three dysenteric stools daily. On the voyage out the ship's doctor gave him a mixture and powders, but never saw his stools nor prescribed rest nor special diet. When he reached Bombay he was much worse and had to be transhipped home. He thus came under a fourth doctor, who did his best to diet him but did not keep him in bed and never examined his fæces. On his return to London he had 18 stools per day and was sent to the hospital, where he was put to bed on a diet of milk and barley water. He was then given the ordinary routine ipecacuanha treatment, with the result that after the first day the myriads of amœbæ were reduced to a few and after the third day none could be found. Tenderness over the colon and tenesmus disappeared, and he said he felt better than he had for months. On the third day in hospital he had only one stool, and this continued until he left the hospital, without blood or mucus and having increased in weight.

I am grieved to say that some ships' surgeons are to-day not supplied with emetine, which seems to me criminal carelessness.

I began to substitute emetine for ipecacuanha in the autumn of 1912, and have used it since in every case in which amœbæ could be found, and in a few others where none could be discovered. With the exception of Case 12, I have met with universal success. I will not lengthen this paper by detailing every instance, but I will give very briefly the account of six consecutive cases of amœbic dysentery treated at the hospital in the summer of 1913.

CASE 4.—The patient, a Goanese, aged 38, contracted dysentery in Baltimore four months before admission. His five typical stools per day contained Entamœba histolytica and cysts. He was given eight injections of hydrochloride of emetine gr. $\frac{1}{4}$, followed by four injections of gr. $\frac{1}{3}$. No amœbæ were found after the fifth day of treatment, and the motions were reduced to three and after the sixth day to one per diem.

CASE 5.—The patient, aged 37, a Lascar, had had incessant diarrhœa for two weeks, 12 typical stools daily containing amœbæ. I gave him five daily injections of amebetine gr. $\frac{1}{3}$, which reduced the number of motions to six, and the amœbæ could not be found on the second and succeeding days. The drug was stopped for three days, because he had an intercurrent attack of broncho-pneumonia; then he was given santonin to expel his round worms, and then he returned to amebetine, of which he had eight more daily injections of gr. $\frac{1}{3}$. This reduced the number of evacuations to one daily.

CASE 6.—The patient, aged 27, an Englishman, from the tropics, gave a history of seven weeks' "diarrhœa," and had never been treated for dysentery. His motions contained amœbæ, mucus, and sometimes blood; they were watery and three or four in number per day. He had 15 daily injections of emetine gr. $\frac{1}{3}$, but from the fourth day of his stay in hospital amœbæ disappeared and he had a tendency to constipation.

CASE 7.—The patient, aged 46, an Englishman, had in Southern India three attacks of dysentery between 1907 and 1913, for one of which he was treated with ipecacuanha. On admission he complained of a dragging pain above the umbilicus, where there was slight tenderness on pressure, and mucus in fæces, but there was no blood and the bowels only acted once a day. Amœbic cysts were found and he was at once put upon injections of emetine gr. $\frac{1}{3}$, which were continued for 12 days. There was no trace of intestinal tenderness or amœbæ after the sixth day, but mucus occasionally appeared in the fæces for two months. Before he returned to India he was given amebetine gr. $\frac{1}{2}$ every night for a week, because his liver was slightly enlarged and tender on deep inspiration. He gained $8\frac{1}{4}$ lb. in weight and stated that he felt quite well for the first time for $6\frac{1}{2}$ years.

CASE 8.—The patient, a Japanese, aged 47, infected probably at Penang or Yokohama, had had four weeks' "diarrhœa" before admission with abdominal pain. There were 12 stools a day, consisting of almost pure blood and mucus, while the microscope revealed amœbæ free and encysted, with ova of Heterophyes heterophyes. Emetine gr. $\frac{1}{3}$ increased to gr. $\frac{1}{2}$ daily, until gr. 8 had been given, reduced his motions from 12 to 2 daily and they became normal in appearance. He was in hospital for 25 days and voided after treatment 50 adult heterophyes worms.

CASE 9.—The patient, aged 31, an Englishman, was attacked by dysentery and treated with ipecacuanha 11 years ago, but has spent the last seven years in England, occasionally having slight reminders of the disease. On admission he was found to have daily six stools, which were dark brown, watery, and offensive, and contained mucus, but no blood. Amœbæ in large numbers, free and encysted, were seen. The amœbæ disappeared on the fifth day of emetine injections, and there was only one daily evacuation.

During the same months cases which were clinically dysentery, but in whose fæces amœbæ could not be found by repeated examinations, were also treated with apparent success by emetine. I give two typical cases of this series which were not complicated, as coloured patients so often are, by the presence of entozoa.

CASE 10.—The patient, aged 28, an Englishman, suffered eight years before from dysentery, and had a return of it 11 weeks ago, after leaving Australia, and rapidly lost 14 lb. weight. He had on admission seven motions a day, watery with undigested food, mucus, and blood, but no amœbæ could be found. After nine injections of emetine gr. $\frac{1}{4}$, he had only one motion a day, formed and without blood or mucus.

CASE 11.—The patient, aged 25, an Englishman, had suffered from dysentery three years since and one year ago, but has been in England for the last 18 months. He had never been treated with ipecacuanha. On admission he had 12 motions daily, dark brown, offensive, watery with undigested food and mucus, but no blood and no amœbæ. During eight injections of emetine gr $\frac{1}{2}$, his motions became constipated and without mucus.

Among private patients I have treated a dozen cases, mostly from India, in whose fæces Dr. G. C. Low had discovered amœbæ, besides an equal number seen in consultation. Two of them were ladies who were suffering from habitual constipation. They all became apparently well after a course of emetine, the amœbæ vanished, and in none of them have I been able to hear of any relapse. One case was complicated by appendicitis, and an operation had to be performed directly the course of emetine was over. All patients state that after emetine treatment they have lost, among other things, an indefinite feeling of discomfort in the abdomen, which they find it difficult to describe.

In order to show that emetine is not universally successful in saving the lives of amœbic dysentery patients, I take this opportunity of reporting my one fatal case after 18 months' experience of the drug. It is quite possible that I ought to have given it in larger doses on this occasion.

CASE 12.—The patient, aged 26, a Japanese fireman, was admitted to hospital on Nov. 11th, 1913, with a three weeks' history of dysentery contracted in Bombay. His tongue was moist and covered with a creamy white fur, and he complained of pain and tenderness on the left side of the abdomen. He had 15 motions, containing blood, mucus, and amœbæ on the first day, and 19 motions on the second and third days after castor oil had been administered. On arrival he was at once given emetine injections gr. $\frac{1}{3}$, night and morning, which were increased to gr. $\frac{1}{2}$ six days later. His absence of knee-jerks and abnormal cardiac sounds made me fear that dysentery had supervened upon latent beri-beri. His fæces contained eggs of Trichocephalus dispar and Heterophyes heterophyes. Emetine reduced his temperature from 100° to 99°, and his evacuations from 15 to 8, but he gradually became more sleepless and exhausted, and died on Nov. 23rd in spite of bismuth, morphia, brandy, strychnia, and ether. His differential count on admission showed lymphocytes 25, large mononuclears 29, polymorphonuclears 46 per cent. At the post-mortem examination by Dr. Newham on the following day the body was generally emaciated, there were œdema of lungs, evidence of old pleurisy on the left side and congested peritoneum, while in the small intestine there were 2000 Heterophyes heterophyes worms, mostly in the jejunum. Upon them Dr. Leiper reported: "They are identical with the Egyptian form, and tally with the classical description by Professor Looss save in one point; the yolk glands are not confined to the lateral aspects of the worm, but clumps are seen at irregular intervals in the central portion among the coils of the uterus." There were almost no dysenteric ulcers above the ileo-cæcal valve, but they were very numerous throughout the large intestine and extended down to the transverse muscular coat; the mucous membrane between the ulcers was greatly swollen, hyperæmic and undermined; in places the wall of the bowel looked healthy, in others it was of a slate colour. The liver weighed 64 oz. and was of a pale colour, of normal consistence and friability, but in the right lobe, 1 inch from the under surface, there was an abscess, about the size of a walnut, containing yellow material, tinged here and there with red. The spleen was triangular in shape and small, weighing only $2\frac{1}{4}$ oz. All other organs were normal.

I should add that there was no evidence in this case of complication by bacillary dysentery, and Dr. Wenyon could find no amœbæ in sections of the large intestine, showing, therefore, that emetine had killed them. The whole of this large intestine is here for inspection.

Value of Bismuth.

For 30 years I have been a believer in the empirical use of bismuth (subnitrate or salicylate) during and after the special anti-dysentery treatment, and I still continue to use it as an attendant on emetine. I have found doses of 15 to 60 grains every four hours sufficient for an adult, and have tried to avoid constipation by giving a saline mixture once or twice a week. Dr. W. E. Deeks in Panama for the last six years has successfully adopted the plan of dosing patients by the teaspoon (about 3 drachms of bismuth subnitrate) every three or four hours. It was thought at one time that bismuth acted as a direct poison to entamœbæ, because they were found to disappear not only when lying free in the great intestine, but also when buried in the bowel wall. But Dr. S. T. Darling negatived this by culturing free-living amœbæ on media sown with bismuth.

Dr. W. M. James,[17] of Ancon, states that entamœbæ are very seldom met with in the stools after the second day of bismuth treatment, though he once saw them in great numbers on the seventh day. He thinks it quite probable that the action of the hydrogen sulphide of the bowel on the subnitrate may deprive the entamœbæ of an essential element of their food-supply. My own belief in bismuth as a secondary drug has increased since the introduction of emetine, because I notice that the cases of relapse after a few days of emetine which I have seen and read of are those which have not also had the benefit of a course of bismuth. Dr. James finds that if amœbæ are kept for one or two hours in a moist chamber before being fixed and stained certain degeneration forms appear, characterised by disappearance of the nuclear network and collection of the chromatin into large blocks against the nuclear membrane with loss of staining of the karyosome. In patients treated with bismuth subnitrate similar degenerative changes are observed in amœbæ fixed and stained immediately after their passage from the body.

In our present state of knowledge, and until it has been proved that emetine alone will banish the infection for all time, I agree with Dr. James in recommending "the simultaneous employment of bismuth subnitrate in large doses because of the difference of action of the two drugs against the entamœbæ. If there be any emetine-immune entamœbæ resulting from the employment of the alkaloid the bismuth subnitrate will effectually deal with them, and very possibly the latter drug will materially aid in the effectiveness of the emetine, just as mercury must also be employed with salvarsan in the successful treatment of syphilis, even though the action of bismuth is not that of a direct poison, as is the action of mercury."

The general treatment is the same for amœbic and bacillary dysentery, so I will postpone it to the next lecture.

COMPLICATIONS.

The chief complication of amœbic dysentery is abscess of the liver following hepatitis, and it is very much to be hoped that a universal and sufficiently prolonged treatment of dysentery by emetine will eventually lead to an enormous reduction of this complication, which succeeds dysentery, according to various statistics, in from 11 to 33 per cent. of hospital cases. Formerly we used to be thankful if we could put an end to dysenteric symptoms by any treatment, and we then seemed powerless to prevent any extension of amœbæ to the liver in our convalescent patients. Now that we know that emetine kills amœbæ we must be careful that our use of it is sufficiently prolonged to destroy not only the amœbæ in the intestine, but also those which have already been transported by the blood stream to liver or lung. In spite of the fact that I have seen Muhammedan patients who vowed that they had never had any use for alcohol, I still think that free libations play an important part, at least in Europeans, in the etiology of liver abscess. The well-known rarity of the complication among women may be partly explained by their smaller consumption of alcohol, and I have noticed on the very rare occasions when a European woman has suffered from it that she has been endowed with a typical masculine thirst.

Amœbic abscess of brain and spleen are met with occasionally in Egypt. Abscess of the lower lobe of the right lung may occur, and is not always recognised until it is encountered at the necropsy, when the diaphragm is found to be adherent to the liver and pleura. Local peritonitis may result from extension of the bowel ulceration, especially in gangrenous cases, but this is very difficult to diagnose during life. General peritonitis may follow the bursting of a liver abscess or a large perforation of the intestine, which usually occurs in the cæcum and is always fatal. Dr. R. P. Strong[18] found perforation 19 times in 100 fatal cases, but in 200 of his clinical cases it only occurred three times. Appendicitis, intestinal hæmorrhage, and sprue (in tropical countries) must be mentioned among rare complications, with arthritis as a sequela.

THE DANGER OF CARRIERS.

The importance of this question in every country has already been referred to while discussing amœbæ, but other papers on the subject have been published since I began writing this lecture. Dr. C. Mathis, for instance, found in Tonkin that 8 per cent. of a limited number of natives examined were acting as healthy carriers of Entamœba histolytica. He believes that direct human contagion is as important in the spread of the disease as the indirect infection by food and water, and quotes in favour of this view the absence of dysentery among troops in barracks and its sudden appearance under the more crowded conditions of camp life, as also the frequent attacks among doctors and nurses.[19]

Professor Landouzy has drawn attention to the occurrence of amœbic dysentery in 14 individuals who have never left France, and suggests that there is a gradual acclimatisation of this disease in that country. His record shows that there have been 7 liver abscesses and 5 deaths. Four of the victims had been directly associated with colonials who had returned from the tropics, but the others apparently had not. He suggests that amœbæ should be searched for in all cases of rebellious diarrhœa of unexplained orgin, even though there may be no blood in the stools. He insists that returned colonials who have attacks of dysentery must no longer be regarded as incapable of spreading the disease.[20]

Dr. E. B. Vedder considers that the presence of a considerable number of these chronic amœba carriers constitutes a sanitary menace to the community, and thinks it possible that they may be rid of their amœbæ by a course of enemata of quinine or silver nitrate[13] when emetine proves insufficient.

Lastly, Dr. S. T. Darling, in reporting a case of entamœbic colitis naturally acquired in a dog, reminds us that we should bear in mind the possibility of dogs and cats acting as carriers of amœbic dysentery.[21]

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STERILISATION OF WATER-SUPPLIES FOR TROOPS ON ACTIVE SERVICE.

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SOME years ago, whilst working at the sterilisation of the Cambridge water-supply, I found that it was not necessary to make a bacteriological examination in order to determine whether the bacillus coli group had been killed by the addition of certain quantities of bleaching powder (chloride of lime) to the water under observation. Working with very dilute solutions of bleaching powder I found that the amount of "available" chlorine required to be added to the Cambridge water to "sterilise" it was frequently only about 1 part in 7,000,000. In such cases the number of bacteria present was very small and the amount of organic matter very low, and I found, even after the addition of the above small quantity, that if, a quarter of an hour after the addition of the chloride of lime, I obtained a blue or a violet-blue reaction with iodide of potassium and starch, as much as a litre and a half or even two litres of the treated water did not contain a single "living" bacillus coli communis. In some earlier experiments I was able to demonstrate that the typhoid and cholera bacilli were perhaps even less resistant to the action of hypochlorous acid than was the bacillus coli communis, and I now realised that water to which bleaching powder had been added and which at the end of a quarter of an hour gave the above blue reaction could contain no living members of the bacillus coli communis group, the dysentery bacillus, or any of the pathogenetic organisms mentioned capable of development in bile salt broth or on special media. I suggested, therefore, that this chemical test might be utilised to take the place of a bacteriological examination wherever waters, varying from time to time in their bacterial contents or in the amount of organic matter contained in them, were being treated with bleaching powder as a sterilising agent, this test taking a few seconds only, against the 24 to 96 hours required for a bacteriological examination.

Carrying out a further series of experiments and following the lines laid down, first in this country and then more completely worked out in America, I satisfied myself that if the particulate matter could be removed from a water by means of any of the ordinary filters it was possible to render even a highly polluted water perfectly safe for drinking purposes by the addition of appropriate amounts of chlorine, and that these appropriate amounts could be determined by means of the iodine and starch test.

Quite recently I have heard from Colonel Horrocks, who has given considerable attention to this question, that instructions have been issued from the War Office that a definite quantity of bleaching powder should be added to any suspicious water *after careful filtration through a good rough filter.* Moreover, Colonel Horrocks informs me that he has devised a specially large and serviceable filter for the removal of particulate matter from water that is to be treated with this bleaching powder. I believe that by these means he has greatly reduced the risk of typhoid and other infections being conveyed through water-borne bacilli. I realise, of course, the difficulties of getting the test described below carried out in the field, but the importance of keeping the amount of bleaching powder as low as possible (so that there may be no taste of chlorine given to the water)—whilst at the same time of resting assured that a sufficient amount of bleaching powder has been added to render the water "sterile"—is so great that I venture to ask you to publish the following method of testing and sterilising water for the information of those in charge of the water-cart tanks supplying troops on active service.

All water except that from public tap-water (potable) supplies must be regarded as dangerous and unfit for drinking.

Filter through the best rough filter available—e.g., army service filter, improvised sand filter, &c.

Pollution in water may be detected and the water rendered safe for drinking by the following method:—

TEST BEFORE TREATMENT IN BULK.

Instructions I.—Rinse a clean service enamelled iron or earthenware reputed pint mug 1 (Fig. 1) with the water to be tested, leaving a few drops in the vessel. Add the 2 grammes of bleaching powder (chloride of lime, chlorohypochlorite of lime) contained in one of the glass tubes "A" (white label) and make into a thin paste, rubbing it down with a clean stylographic pen, penholder, pencil, or glass or other similar clean rod available. Then add 500 c.c. or 18 oz. of water (i.e., fill to within ¼ inch of the lip of the enamelled mug or ⅜ inch of the lip of an earthenware mug) and mix thoroughly by pouring into a second mug (Fig. 2) and then back into 1. The quantities indicated below of the resulting solution may be used for testing purposes; the remainder is used for sterilising the water. This solution should contain 0·66 gramme of available chlorine.

FIG. 1.

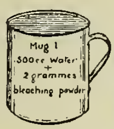


FIG. 2.

Instructions II.—Now fill four service reputed pint mugs to within ¼ inch of the top with the water to be tested. Then allow the bleaching powder solution to rise in a pipette graduated to contain 0·15 c.c. (Fig. 8) to the mark (b); wipe the outside of the pipette and blow the contents into one (Fig. 3) of the four mugs of water to be tested. Add two similar charges of the pipette to a second of these mugs (Fig. 4), three charges to a third (Fig. 5), and four charges to a fourth (Fig. 6), in each case mixing thoroughly (as under Instructions I.), and allow to stand for 15 minutes. Then into a clean mug (Fig. 7) crumble one of the small tablets of iodide of potassium contained in tube "C" (red label); also after powdering, in the corner of an envelope or between a couple of layers of clean paper, one of the compressed starch tablets "B" (blue label)—other forms of soluble or boiled starch may be used if these tablets are not available—and pour into it the water from 3, and mix by pouring backwards and forwards from one vessel to the other. Add iodide of potassium and starch to 4, 5, and 6, treating in the same way. When a blue colour appears in any of these mixtures it is an indication that the chlorine has not all been used up in that mixture; what remains sets iodine free from the iodide of potassium, which acting on the starch gives a blue colour—i.e., more available chlorine than was necessary to carry oxygen to the organic matter and less resistant organisms has been added, and the water treated in bulk as under Instructions III., is rendered "safe." To free the water from the bacillus coli communis and from non-spore-bearing pathogenetic water-borne organisms it is not necessary to add more bleaching power than is indicated as required by the test.

FIG. 3.

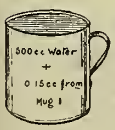


FIG. 4.

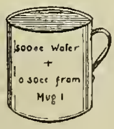


FIG. 5.

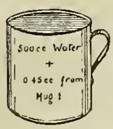


FIG. 6.

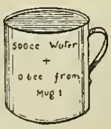
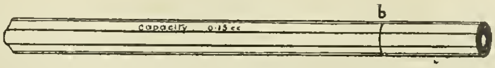


FIG. 7.

FIG. 8.



2/3 size.

Instructions III.: Sterilisation of the water.—Should No. 3 give a blue, violet, or brown colour (best seen by daylight) the contents of No. 1 (Fig. 1) may be divided into two equal parts, each of which is sufficient to sterilise 110–120 gallons of water. Distribute this amount, pouring equal quantities into each of the four divisions of the service tank when it is about half filled, and when filled allow to stand for 20 minutes. The water may then be used for drinking without filtration or further treatment. Should No. 3 give no colour, but No. 4 become blue, add the whole of the contents of No. 1 to 110–120 gallons, distributing in the same way and rinsing the mug several times so as to wash into the tank the whole of the bleaching powder. Should No. 4 give no colour, but No. 5 become blue, dissolve a second sterilising powder "A" (2 grammes of bleaching powder) and add half of it along with the contents of No. 1 to the 110–120 gallon tank. Should No. 5 give no colour, but No. 6 become blue, add the whole of the contents of the two tubes "A" to 110–120 gallons. In each case allow the water to stand for 20 minutes before issuing it for drinking. Should No. 6 give no colour the water should be regarded as highly polluted, and as palatability is a matter of some importance it should be boiled. By the addition of more bleaching powder, however, up to 6 or 8 grammes per 110–120 gallons it may be rendered innocuous, though in some cases it may be less palatable.

N.B. (1) The great advantage of this method is that it is not necessary to await the result of a bacteriological examination. The amount of bleaching powder required to render the water safe for drinking purposes may be determined in 20 minutes. Where a new or a variable water has to be used, this is a matter of prime importance.

(2) Other advantages are that with exception of the pipette no special apparatus is required, and that as the same solution is used for both testing and sterilising any fall in the available chlorine content of the sterilising powder is equalised by a similar fall in the test solution, and the need for the addition of more sterilising powder at once indicated.

(3) If for any reason the supply of standard sterilising tubes should fail it will be found that three times as much fresh, clean, dry, loose bleaching powder (which should contain 33 per cent. of available chlorine) as can be lifted on a sixpenny piece grasped at the edge between the thumb nail and the tip of the first finger and used as a spoon weighs 2 grammes and corresponds to the amount contained in one of the standard sterilising tubes.

(4) A rough test of the condition of the water to which bleaching powder has been added may be made by taking a cupful of water from the tank 15 minutes after the addition of the sterilising powder, dissolving in it one each of the tablets "B" and "C" (starch and KI) and mixing thoroughly. Should no colour appear add another charge to the tank, and again apply the rough test.

(5) A treated water to be "safe" should, at the end of 15 minutes, always give a blue "reaction" on the addition of the tablets "B" and "C."

This method may also be used for the testing and sterilisation of the water-supplies of small communities. I hope shortly, as a result of a series of experiments now nearly completed, to publish further information on several important points concerning the action of bleaching powder on spores, the effect of "killing" the chlorine, &c. In the meantime, I wish to express my thanks to Messrs. Parke, Davis, and Co. for their valuable help in working out the details of a really practical method and for agreeing to supply the testing outfit containing bleaching powder and tablets of iodide of potassium and starch, to Sir John Brunner, Bart., to Messrs. Burroughs and Wellcome, and to the United Alkali Company, all of whom have assisted me with valuable information. Finally, I must place on record my indebtedness to my assistant, Mr. W. A. Mitchell, who has carried out a number of the experiments for me and kept them going when I was occupied with other work, often of a very different kind, that has had to be done during the last few weeks.

Cambridge.

JUXTA-EPIPHYSIAL STRAIN OF THE LOWER END OF THE HUMERUS AND ITS DETECTION BY A DIAGNOSTIC LINE.

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(*With a Note on Treatment, by* W. H. TRETHOWAN, F.R.C.S., M.B., B.S. Lond., *Surgeon to the Orthopædic Department, Guy's Hospital.*)

THIS condition is a common one, and is, as far as my experience goes, unrecognised by the surgeon. The ultimate effect is limitation of flexion and extension. I believe it constitutes the explanation of deficient movement in the elbow-joint so often met with in after-life, when the patient is seldom able to give a definite history of injury. The injury, or the accident causing it, is often very trifling and easily forgotten.

Many years ago an examination of the X ray reports of Guy's Hospital showed that of all the cases of children therein recorded 20 per cent. suffered from fracture of the lower end of the humerus. To-day, owing to the increased uses of the X rays, the percentage is nothing like so great, but it still ranks as the commonest fracture of child life. In the complete fracture the bone gives way somewhere across the upper part of the olecranon and coronoid fossæ, the line of fracture running first horizontally backwards, then upwards and backwards. The lower fragment is displaced backwards, taking with it the ulna and radius. (Fig. 1.) Occasionally the lower fragment does not get bodily displaced, but is tilted backwards, the upper end still remaining in contact with the humerus, while the lower end is forced back. (Fig. 2.)

A still less pronounced condition is that seen in Fig. 3, where the bone is just beginning to tear, and in Fig. 4 a mere bending is visible, which is invariably overlooked. This latter is the condition I would call attention to, and would point out a means by which it can easily be detected.

In the normal adult humerus, viewed radiographically from side to side, the lower joint surfaces present themselves as a complete circle. (Fig. 5.) It is easy to make out the floors of the two fossæ above this circle. If A B, a straight line, be ruled along the anterior border of the humerus its continuation downwards will be found to cut the circle at its centre or thereabouts. This line gives us the proper position of the lower articular surfaces of the humerus. In other words, when the centre of the circle or disc, which is the X ray shadow of the lower articular surfaces, falls behind the continuation of a straight line representing the general direction of the anterior surface of the humerus there is a certainty of a bending or breaking of the lower end of this bone. Where the epiphysial cartilage is still present and is evident as a clear space, the articular surfaces do not give a perfect circle but usually a half circle. In applying my diagnostic line it will be necessary to complete the circle, in imagination or with dividers. The rule will then hold good, and the centre will be found to fall on, or in front of, the diagnostic line.

Children suffering from this bending of the lower end of the humerus complain of pain in the elbow-joint, but movement is good and the swelling is moderate. They are treated for a traumatic synovitis. It would be better if all these injured joints were radiographically examined in the method I have detailed above, the greatest care being taken to get a purely lateral radiogram, which can only be accomplished by careful arrangement of the limb during screen examination.

The illustrations are tracings from skiagrams.

FIG. 1.

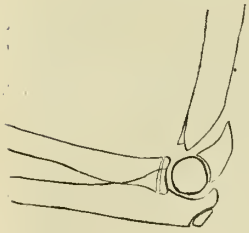


FIG. 2.

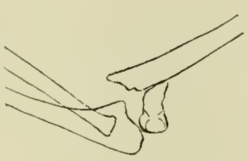


FIG. 3.

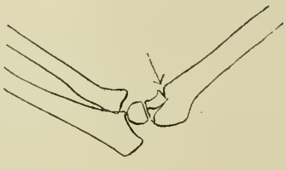
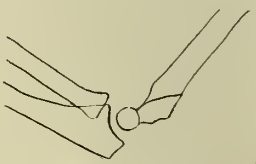
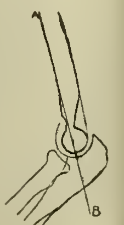


FIG. 4.



Fractures and bending of lower end of humerus.

FIG. 5.



Diagnostic line.

A NOTE ON THE TREATMENT OF THIS CONDITION.

The accident which produces this condition may be a fall on the outstretched hand, a twist of the forearm, or direct violence. Voluntary movements are painful, and there may be distinct tenderness on pressure immediately above the epiphysial line. The ultimate limitation of flexion and extension is a mechanical result due to the backward displacement and rotation of the lower fragment, which remains unrecognised and uncorrected. Complete restoration of function necessitates correct anatomical reposition, and this can easily be accomplished within a reasonable time of the accident by manipulation and forcible correction under an anæsthetic.

The treatment is similar to that of severer degrees of fracture in this region. The forearm should be supinated, then fully extended, and, finally, fully flexed on the upper arm and fixed in this position for a fortnight. Strapping and bandages should be used for this purpose, splints being better avoided. The severe degrees of fracture—the so-called separated epiphysis—may occasionally require an open operation to obtain complete correction, but this will not be commonly the case.

An X ray screen examination will show whether the reduction is complete or not. In any fracture of the lower end of the humerus the one thing to avoid is the too early use of passive movements. All inflammatory symptoms should have subsided before the elbow is allowed to be moved. Massage, as far as it can be done without moving the joint, may be permitted within a few days of the injury. At the end of the period of immobilisation in acute flexion the forearm may be lowered a little and held merely in a sling. Active movements within the small range possible may be encouraged, but passive movements should be prohibited. The best indications for allowing more freedom to the joint are the retention of the range of active movement already won and the absence of pain on movement.

Failure to recognise the pernicious effects of early passive movements in elbow injuries leads to continued inflammation of the joint and protracted stiffness from increased adhesions and callus formation, and may result in a severe degree of permanent disability later. Passive exercises may be usefully employed when the range of movement is increasing.

THE CULTIVATION OF THE TUBERCLE BACILLUS:

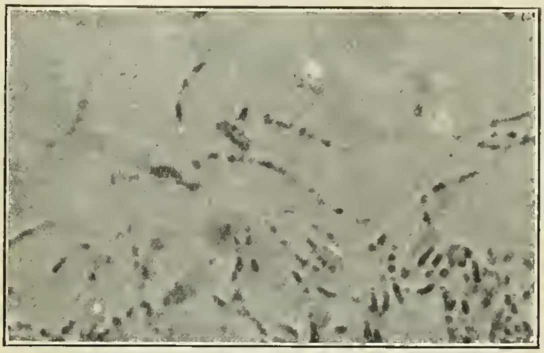
CHANGE IN FORM BY GROWTH ON SPERM OIL AND GLYCERINE-EGG MEDIUM.

BY A. H. MILLER, M.A., M.D. CAMB., M.R.C.P. LOND.,
JOINT PATHOLOGIST TO THE SALFORD ROYAL, MANCHESTER CHILDREN'S, AND MANCHESTER NORTHERN HOSPITALS.

WHILST working on the cultivation of the tubercle bacillus with the aid of waxy substances I have found the tubercle bacillus on glycerine egg (Dorset's medium), to which has been added a little sperm oil, a liquid wax, undergoes certain changes herein described. It loses its power, in part, to stain with carbol-fuchsine. When stained with carbol fuchsine and simply washed, without being further decolourised, a very peculiar appearance is presented. (See Figs. 1 and 3.)

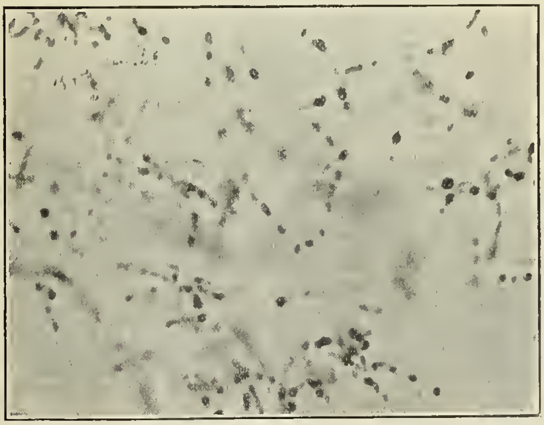
Before going into the changes of the bacilli themselves a description of the mode of growth and the method of making the medium should be given. In the earliest experiments 1·25 per cent. of sperm oil[1] was added to 2 parts of egg with 1 part of 6 per cent. glycerine in normal saline (0·85 per cent.). The bacilli appeared in about the usual time as they ordinarily appear on Dorset's medium, if anything later, in colonies discrete and rather larger and more confluent than is usually found with Dorset's medium alone. But when the percentage of sperm oil was raised the growth altered in character. With actively growing bacilli the growth for the most part appears as a thick, greyish, greasy-looking (in fact, it is greasy) pellicle, spreading uniformly over the surface, and especially thick towards the bottom of the tube, near the water of condensation. This pellicle takes perhaps from two to three months before it reaches its maximum, or the growth may only occur as a few white discrete colonies, well raised above the surface. If these, when they have reached a convenient size, are spread over the remainder of the surface growth is accelerated and the bacilli themselves undergo a corresponding change. At the present time a 2·5 per cent. mixture gives the most constant growth, but a 3·75 per cent. mixture, if the bacilli grow well, a richer growth. With a 5 per cent. mixture the bacilli do not seem to grow so well—the colonies are smaller—and growth does not take place so uniformly as may occur with lower percentages. But this may be due to the proportion of sperm oil, glycerine, and egg not being properly adjusted.

FIG. 1.



Photomicrograph of tubercle bacilli growing on a 2·5 per cent. mixture. Two to three months old culture.

FIG. 2.



Photomicrograph of culture nearly three months old growing on 5 per cent. sperm oil.

To make the medium the sperm oil is poured on to the beaten-up and filtered egg, with the usual precautions as regards sterility, and the glycerine in normal saline is added to the amount required. The mixture is then well shaken in a flask, poured into sterile test tubes, and set. To get a uniform mixture it has been my custom to set low down in Koch's steamer that coagulation may take place as quickly as possible before all the oil rises to the surface. Each tube is well shaken whilst being laid down in the steamer. Coagulation takes place in about three minutes, care being taken not to let the media rupture. It is then sterilised by steaming for about an hour on three successive days high up in the steamer.

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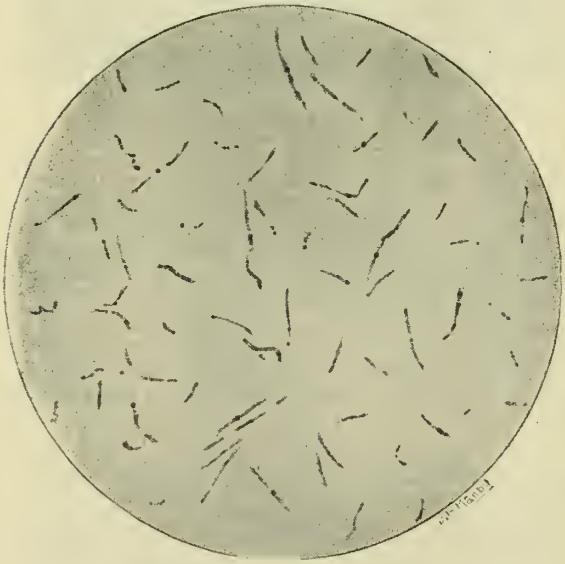
[1] The refined sperm oil as ordinarily bought at a drug house.

In typical and most favourable growths the tubercle bacillus is altered. In shape it becomes plumper, much longer, and its ends terminate somewhat finely—this is best seen when stained by Gram. The protoplasm of the bacillus undergoes changes. It refuses to stain with carbol-fuchsine in certain parts. Figs. 1 and 3 illustrate these changes. The particular slides from which the figures were made were decolourised with acid-alcohol for about one minute, but the same appearance is given in some cultures, when after staining with carbol-fuchsine the slide is simply washed in water, without any further decolourisation. It will be seen that the bacillus is not stained except in certain parts. In many of the bacilli the staining to non-staining parts assumes some regularity, first a staining portion either in the form of a band, or "granule," then a non-staining band or zone, and so on, through the length of the bacillus, so that the bacillus looks extremely "beaded." These "granules" (Fig. 2) are large, round, refractile bodies, distending the body of the bacillus; they are extremely acid-alcohol fast, and usually are the last to go on decolourising with acid-alcohol, HCl 1 cubic centimetre, 70 cubic centimetres of 70 per cent. alcohol, and water to 100 cubic centimetres. The bacillus can be, within quite a short time of decolourisation, some few seconds, rendered colourless except for these refractile "granules." There does not appear to be any method in which the bands or "granules" are situated in the length of the bacillus. Sometimes there is only one round body at the end as the spore of a tetanus bacillus, or there may be one at each end giving a bipolar appearance, or there may be one or two, or more, situated either close together or far apart. I may say here that a very similar appearance is given in a plate and photographs in a paper by Wherry.[2] The body and colourless portions of the bacilli refuse to stain with such dyes as methylene blue and Bismarck brown used as counter-stains. No doubt some of the staining portions of the bacilli are what are known as metachromatic granules, but an Ernst[3] preparation does not give the same "beaded" appearance as a fuchsine one. The "beaded" appearance of a fuchsine preparation is brought out much clearer when decolourised with the usual decolourising agents; but decolourisation must not be carried too far, as the bacilli and "granules" may become so faint as to be scarcely visible. I have seen the bacilli completely decolourised as white shining masses within a period of two minutes or a little more. By Gram there is a very uniform picture of faint diaphanous forms, with violet-staining "dots" in the length of the bacillus.

FIG. 3.



A drawing of sperm oil tubercle bacilli as seen by the eye under the microscope × 1000.

This description applies to cultures which have grown with a rich, moist, greasy growth on the higher percentages of sperm oil, and where time has been given to let the changes come about—i.e., the older the culture the more it forms "granules." Fig. 3, a drawing, was from a culture not quite two months old grown on a 3·75 per cent. mixture of sperm oil and glycerine egg. It has been growing since October last on a 1·25 per cent. mixture, and has been subcultured twice till April, when it was subcultured a third time on to the 3·75 mixture. Although the drawing represents bacilli growing on sperm oil since October, yet the same changes occur and to the same degree in two months' time or less when grown on the higher percentages as 3·75 or 5. A strain of bovine bacilli kindly given me by Dr. J. C. G. Ledingham, of the Lister Institute, behaves apparently in the same way; it seems to give the same changes microscopically and is growing luxuriantly on the mixture of egg, sperm oil, and glycerine.

Most of this work was done whilst assistant clinical pathologist to the General Infirmary, Leeds, the remainder here.

The Joint Hospitals Pathological Department, Manchester.

ANKYLOSTOMIASIS IN FIJI.

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DISTRICT MEDICAL OFFICER, FIJI.

THE methods adopted for the prevention and treatment of ankylostomiasis in the Navua district of Fiji during the year 1913 are, I think, worth a brief note in THE LANCET.

The Navua district of Fiji contains just over 2000 indentured Indian immigrants distributed among 12 large estates. The whole district is a large swamp with an annual rainfall of over 100 inches. For the three years previous to 1913 the general death-rate for the indentured Indians, excluding deaths from accident and violence, was as follows:

Year.	Adults.	Children.	Total (per 1000).
1910	75·7	237·8	96·6
1911	34·2	156·5	48·1
1912	36·7	137·9	50·3

On my appointment to act as medical officer to this district in February, 1913, it appeared that this death-rate was almost entirely due to the excessive amount of ankylostomiasis among the coolies, the majority of whom showed marked signs of infection. In previous years a certain amount of work had been done for the prevention of the disease, but no really wholesale campaign had been undertaken.

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[2] Wherry, W. B.: Some Chemical Conditions favouring the Production of "Spores" in B. tuberculosis, Centralblatt für Bakteriologie, Originale, 1913, vol. lxx.

[3] Staining the slide with Löffler's methylene blue and passing slide over a Bunsen flame for half a minute after steam begins to rise. The preparation is then washed and counter-stained for one to two minutes in watery Bismarck brown.

My campaign included the following measures:—1. Improved general sanitation in the coolie lines especially. 2. Greater care by the overseers that the latrines were used. 3. Portable latrines for use in the field. 4. Immediate (or as early as possible) treatment of all coolies obviously affected. Over 4000 treatments by thymol were given in the year. 5. Immediate treatment of the skin eruption. 6. Education of those in authority. 7. Explanation to the coolies. 8. Frequent inspection of all coolies for signs of ankylostomiasis. 9. Spraying of lines and neighbourhood of lines with 1 per cent. solution of ferrous sulphate. The Vancouver-Fiji Sugar Company detailed a gang of coolies with an overseer for this work. 10. Boots were tried as an experiment with the labour of one estate. This last measure has since been abandoned owing to the difficulty of supervision. The coolies take their boots off when the overseers are not looking. Measure No. 3 was not properly carried out. It is my opinion that Measure No. 8 is the most efficacious as regards immediate results.

The death-rate for 1913 per 1000, including deaths from accident and violence, was: adults, 19·47; children, 116·00; total, 29·31. Exclusive of deaths from accident and violence (notions of which vary with different observers) the death-rate per 1000 for that year was: adults, 18·42; children, 96·0; total, 26·29. Mr. L. A. Andrews, hospital superintendent at Tamanua Hospital, was responsible for a very large share of this work, whilst the manager and overseers of the Vancouver-Fiji Sugar Company gave all the help in their power. Without the coöperation of these gentlemen the result could not have been achieved.

Fiji.

EARLIER INDICATIONS OF GAS FORMATION BY COLIFORM ORGANISMS,

WITH DESCRIPTION OF A MODIFIED FERMENTATION TUBE.[1]

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AND
F. NICHOLLS.

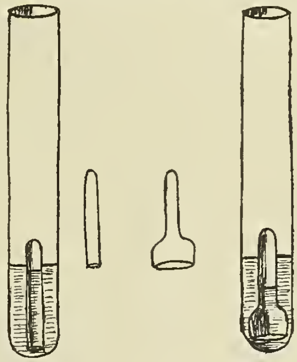
(From the Pathological Laboratories of the Bristol University and Bristol Royal Infirmary.)

THE formation of gas during bacterial growth on nutrient media containing sugars, &c., has been used as an indication of the power of the microorganism to hydrolyse and to utilise these substances. Bacteria differ in their capacity to break up monosaccharides, disaccharides, polysaccharides, glucosides, alcohols, &c., and this character has suggested the collection and identification of the products of cleavage as a means of differentiation and classification.

Of late years special attention has been directed to the quantity and quality of the gas produced, and the results obtained have led to a better knowledge of the metabolic activities of B. coli, &c.[2] The apparatus generally employed for this purpose is somewhat complicated, and the organisms have been allowed to grow for about seven days prior to the analysis of the gases produced.[3]

For qualitative work, in order to demonstrate the presence of gas-forming organisms in clinical materials or during the examination of water or milk, a straight glass tube, known as Durham's tube, is frequently employed in preference to the U-shaped or similar tubes. By its use this stage in diagnosis is completed in from 12 to 24 hours. Many instances occur, however, in which the saving of a day or even of a few hours is of consequence to the laboratory worker, clinician, or patient. To lessen the time, therefore, Emrys-Roberts investigated the effect of increasing the sugar content of the media, and found that when the usual 1 per cent. of lactose was made up to 15 per cent. the gas formation was accelerated. With some slow lactose fermenters, which required 26 days with 1 per cent. solution, he obtained gas formation in two days when a 15 per cent. solution of lactose was employed.

The work now recorded has resulted in a further diminution of the time involved, making it possible to demonstrate the formation of gas in about four hours. It has also indicated certain differences in the rate and type of cleavage of the several substances. We have found that an advantage is gained by using a tube for the collection of the gas which is bell-shaped at its lower end and almost entirely fills the test-tubes (see Figure).[4] The whole of the gas formed in the lower stratum of fluid passes upward into the collecting tube, while convection currents are set up which cause gas evolved in the middle portion of the media to find its way into the dome-shaped cavity.



Old tube. New tube.

Elsewhere the advantage of neutralised pure silk peptone over Witte's peptone, or other complex mixtures, as bacterial food has been shown by one of us, and silk peptone has been employed with success in the present set of experiments.[5] Table I. shows the comparison of Witte's peptone and silk peptone as media for growth of colon bacilli, and points out that the best results are got with a media composed of 2 per cent. silk peptone and 5 per cent. lactose—that is to say, gas becomes evident in 4 hours, as compared with 8 hours by the ordinary tube, or 10 and 12 hours when Witte's peptone is employed.

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[1] The cost of this work has been covered by grants from the Bristol University Colston Society.

[2] Rogers, Clark, and Davis: Journal of Infectious Diseases, 1914, vol. xiv., p. 411.

[3] Frieber: Centralblatt für Bakteriologie, Orig., 1913, Band lxix., S. 437.

[4] Made by Herr Firma Goetze, Härtelstrasse, Leipzig.

[5] Walker Hall: Journal of Pathology, vol. xix., 1914.

The Witte's peptone solution was prepared in the usual manner. The silk peptone was used in the crude form made by Hoffmann-La Roche, Basle. The results obtained with purified silk peptone will be reported later. After solution of the crude silk peptone in distilled water it was sterilised; alcoholic solution of phenolphthalein was then added to an aliquot portion, and the amount of sodium hydrate necessary for obtaining a neutral point was determined. The lactose or other sugar was then added and the solution steamed as usual on successive days. The dose of organisms was 100,000,000 or 200,000,000. Counting was carried out in a hæmocytometer. It was found that an average standard loopful of urinary sediment in cases of cystitis contains about 100,000,000 organisms. The inoculated tubes were examined hourly throughout the set of experiments.

TABLE I.—*Time of Gas Formation by Coliform Organisms in Hours. Rapid Fermentation Tube and Ordinary Tube.*

Media.	Number of coliform organisms inoculated into 4 c.c. of medium—							
	100 millions.		200 millions.		400 millions.		800 millions.	
	Special tube.	Ordinary tube.	Special tube.	Ordinary tube.	Special tube.	Ordinary tube.	Special tube.	Ordinary tube.
2 per cent. silk peptone.	Hours.	Hours.	Hours.	Hours.	Hours.	Hours.	Hours.	Hours.
+ 1 per cent. lactose	10	12	10	15	9	10	6	10
+ 5 ,, ,,	4	8	4	8	3	6	3	6
+10 ,, ,,	10	12	4	12	4	8	4	8
+15 ,, ,,	12	16	11	14	5	10	8	10
2 per cent. Witte's peptone.								
+ 1 per cent. lactose	7	10	6	8	4	8	4	8
+ 5 ,, ,,	10	12	8	12	6	11	4	8
+10 ,, ,,	10	12	8	12	5	11	5	8
+15 ,, ,,	10	12	8	10	5	10	5	8

TABLE II.—*Time of Gas Formation by Coliform Organisms in Varying Media.*

Media.	Number of coliform organisms added to 4 c.c. of medium—							
	100 millions.		200 millions.		400 millions.		800 millions.	
	Special tube.	Ordinary tube.	Special tube.	Ordinary tube.	Special tube.	Ordinary tube.	Special tube.	Ordinary tube.
Neutral veal broth with 1 per cent. Witte's peptone—	Hours.	Hours.	Hours.	Hours.	Hours.	Hours.	Hours.	Hours.
+ 1 per cent. lactose	4	6	4	6	4	6	4	6
+ 5 ,, ,,	5	7	4	6	4	6	3	6
+10 ,, ,,	4	7	4	6	4	6	3	6
+15 ,, ,,	6	10	6	8	4	8	4	8
Neutral veal broth with 1 per cent. silk peptone—								
+ 1 per cent. lactose	6	9	5	9	5	8	5	7
+ 5 ,, ,,	5	9	4	8	4	8	4	7
+10 ,, ,,	5	9	4	8	4	8	4	7
+15 ,, ,,	5	10	4	10	4	10	4	10

TABLE III.—*Time of Gas Formation by Slow Lactose Fermenters.*

Medium. Neutral veal broth with 2 per cent. silk peptone and 5 per cent. lactose.

Strains.	Number of organisms added to 4 c.c. of media—							
	100 millions.		200 millions.		400 millions.		800 millions.	
	Special tube.	Ordinary tube.	Special tube.	Ordinary tube.	Special tube.	Ordinary tube.	Special tube.	Ordinary tube.
	Hours.	Hours.	Hours.	Hours.	Hours.	Hours.	Hours.	Hours.
Penfold I.	21	42	21	42	16	18	16	18
Penfold III.	16	21	16	18	16	18	14	17
Penfold Amb. F. ...	6	12	4	11	4	10	4	9

In order to see if the gas formation could be still further accelerated neutral veal broth containing 1 per cent. Witte's and silk peptone and varying amounts of sugars was employed. The veal broth in all the experiments was tested for the presence of sugar prior to the addition of lactose, &c.; gas was not produced in it by B. coli during seven days. Table II. gives the results given by a laboratory strain of B. coli.

As a result of these observations it was decided that a good medium for B. coli was neutral veal broth with 2 per cent. silk peptone and 5 per cent. lactose. This medium was accordingly employed for the growth of some slow lactose fermenters, originally isolated by Dr. W. J. Penfold, of the Lister Institute, and made available by the courtesy of Professor E. Emrys-Roberts, of Cardiff. These strains fermented lactose in 2, 5, and 26 days. From Table III. it will be seen that with the medium now employed the time was reduced to 11, 18, and 42 hours, while the use of the special fermentation tube reduced this still further to 6, 16, and 21 hours.

When constant doses of B. coli are added to equal quantities of silk peptone media containing various sugars, the time at which the gas formation is first evident in the modified tube appears to be proportionate to the complexity of the substance concerned. Table IV. shows a gradual increase in the time necessary for gas evolution from the mono- to the poly-saccharides and the various glucosides and alcohols. How far these times will prove constant with different strains and under varying conditions is a matter which is now engaging our attention.

TABLE IV.—*Gas Formation by B. Coli in Various Sugars, &c.*

Dose 100 millions. Medium. Veal broth with 2 per cent. silk peptone and 1 per cent. sugars, alcohols, or glucoside.

—	B. coli.		Pneumobacillus.	
	Special tube.	Old tube.	Special tube.	Ordinary tube.
Monosaccharides—	Hours.	Hours.	Hours.	Hours.
Arabinose	4	7	5	10
Lævulose	5	7	6	17
Glucose...	6	8	5	8
Galactose	6	9	4	9
Disaccharides—				
Lactose...	7	10	8	11
Maltose...	8	10	8	11
Saccharose	10	16*	5	17
Trisaccharides—				
Raffinose	16	28	5	10
Polysaccharides—				
Dextrine	28	42	6	10
Starch	72	96	22	—
Glucoside—				
Salicin	72	96	8	11
Polyatomic alcohols—				
Mannite	7	16	6	8
Sorbite	16	20	5	10
Dulcite	21	42	8	18
Glycerin	120	140	16	18
Adonite...	7 days.	—	12	18
Inulin	9 ,,	—	22 ?	—

* Another strain 40 and 90 hours.

Some further results already obtained have suggested an inquiry into the question of media in relation to the capacity of organisms to ferment sugars. Growth of intestinal bacteria in silk peptone solutions is associated with increased activities in the breaking-down of the generally used sugars, glucosides, or alcohols. The assumption of these characters has induced us to proceed with an investigation into the constancy of gas-forming properties and the underlying principles concerned.

The silk peptone facilitates the growth of colon bacilli in solid media also. When the Witte's peptone in nutrient agar is replaced by silk peptone, growth is more rapid, and in the presence of sugars gas is produced in about eight hours—namely, in half the time which is usually taken.

PARATYPHOID INOCULATIONS.

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LATE ASSISTANT, PASTEUR INSTITUTE, PARIS.

A SPORADIC case of paratyphoid fever having been diagnosed in the service of Dr. August Marie at the asylum of Villejuif, he and Dr. Legrain requested me to inject a certain number of their patients, with a view to determine any efficacy of such inoculations in preventing the spread of the disease or its becoming endemic. The causative bacillus isolated from the case diagnosed was not kept, and my first thought was to employ varied strains in series of patients who had been in association with the sufferer and watch results. Others, non-injected, would serve as controls. Marked reactions following injections of the paratyphoid B bacilli prepared according to the usual methods soon showed themselves, and in the interests of the inmates I felt justified in enlarging the sphere of work and in attempting to find a method applicable and, we trust, useful in this asylum, or whenever preventive or curative injections may be indicated.

Of the published results of prophylactic injections of paratyphoid B bacilli I may for its particular interest cite those of Castellani, who in his interesting paper[1] has shown that certain strains of paratyphoid B when heated to 50° C. during one hour were non-virulent. However, with two strains I found that there was a localised abscess formation if the dose, even for a second, were 750 million. There is always present the important question of difference of strain to be considered. Without entering into the question of the division into separate groups of bacillus enteritidis, B. suipestifer and bacillus paratyphosus B, it may be stated that the earlier work was confined to five strains of what were typical of the group paratyphoid B; they were isolated from blood streams. Four were from sporadic cases where the symptoms bore close relation to those seen in typhoid fever. The fifth strain, B (a.), was from the epidemic at Wrexham, where it will be recalled the subjects infected showed symptoms of acute toxæmia, known as food poisoning, and subacute typhoid-like fever, with certain later cases showing a transmission of the infection. Close serological relationships brought this bacillus B (a.) into line with the four other strains, B (w.), L_1, L_2, and M, as distinguished from those of a typical B. enteritidis and B. murium later studied comparatively.

A method to be employed should permit immediate application of the recently isolated microorganism to those suffering and to contacts, doses being made accordingly. Where a carrier is responsible special measures should also be applied.

Injections of certain strains of other related groups were also made with a view to determine the practicability of a similar method for paratyphoid A bacilli and for any useful results to be gleaned from an inter-group comparative study. Colonel Leishman's publication of statistics goes to show that antityphoid vaccination does not protect against paratyphoid A infections, and Hay's report on paratyphoid B infections after recent attacks of typhoid fever may be cited in proof of the absence of an inter-group immunity from B. typhosi.

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[1] Journal of the Ceylon Branch of the British Medical Association, October, 1913

My guiding theory has been that immunity for the endotoxin-containing microbes depends mainly on the production of anti-endotoxic properties of sera, reinforced phagocytosis, and changes produced in certain sensitive body cells that will serve them in their defence. The bacilli after contact with their specific antiserum give rise to less local reaction, are more readily lysed and taken up by phagocytes, and may be by other body cells, thus facilitating their being dealt with. It has been shown that subcutaneous injections of certain micro-organisms do lead to the formation of anti-endotoxic serum properties. Rowland has recently demonstrated their formation to plague bacilli. Animal experiments have shown that dead micro-organisms prepare the body for the living, and in general the latter give a higher degree of immunity. Such a procedure I have followed in the attempt to vaccinate man. Heat modifies according to its duration and intensity, and I hold it is better to apply only that degree necessary. The bacilli were thus attenuated; few were killed (as was determined by sowing various dilutions of them and of the unheated).

To have on hand a prepared animal antiserum whose antibodies would specifically sensitise the strain causing an epidemic is a remote chance; and it appeared of value to determine if one could use the serum of a patient when specific antibodies were produced, or that of one or more subjects who had received previously two small injections of the dead bacilli. One could thereby sensitise the micro-organisms with antibodies present in human sera and give much larger doses thereof without troublesome reactions, and I trust produce the rapid and lasting immunity seen to be produced by other sensitised micro-organisms. Steady and patient procedure, careful clinical observations, and serological examinations have led to the evolution of a method which clinically is giving apparently most satisfactory results. It is to be hoped that the difficulty of vaccinating certain animals against strains of paratyphoid B does not equally apply to man. The application of this double method with certain other micro-organisms—B. coli, proteus, typhosus, streptococci, staphylococci, and gonococci, etc.—has been employed in treatment, and one is here again much encouraged to continue it.[2]

Preparation of injections.—In the double method employed a 20-hours growth of bacilli on peptone agar was washed off in 10 c.c. saline and for the preparation of dead bacilli was heated to 53° C. for B. paratyphosus A and B. typhosus, or 56° C. for B. paratyphosus B during one hour, counted or otherwise enumerated, centrifuged, and the deposit diluted in saline, so that 1 c.c. contained 250 million bacilli. In the preparation of the attenuated living sensitised bacilli the 10 c.c. dilutions were heated to 50° C. for paratyphoid A and typhoid, and to 53° C. for paratyphoid B during one hour, then counted or otherwise enumerated, centrifuged, and the deposit diluted to have 25,000 million to 1 c.c. saline. One-tenth of this was placed to each c.c. of inactive human serum in a centrifuge tube. They remained in contact half an hour at 37° C. and 12 hours in the ice chamber. The contents were centrifuged and the deposit diluted with saline to contain 250 million to 1 c.c. Serological examinations indicated the using of the above quantities. The human sera were taken before a meal and eight days after the second injection of dead bacilli. All preparations were kept in such a dilution and in a cool dark place till wanted.

Inoculation intervals were 7–9 days. I did not think it necessary to exclude tuberculous subjects if the disease be not obviously active, nor those who showed but a trace of albumin in their urines.

Reactions.—These will be described with each series. In general it was observed that dead bacilli of the paratyphoid B groups gave rise to more local reaction than similar numbers of typhoid T. or paratyphoid A. These reactions were always concentrated rather than extended. The higher elevations of temperature never lasted beyond 36 hours. In earlier series, following injections of unheated bacilli, there was an occasional persistence of an unabsorbed abscess, sometimes up to five weeks, wherefrom living bacilli were isolated. Prolonged general symptoms were not produced, and the blood slowly diminished in agglutination and fixation of complement powers. Such reactions and findings were instructive in showing localised defence. The bacilli could never be isolated after injection (24 or 48 hours or some days) from the blood, fæces, or centrifuged urine. All serological examinations of blood made two months after the last injection showed less specific amboceptor and agglutinin properties than that taken after eight days, and these results, together with the fact that despite the uncleanly habits and close daily contact amongst inmates of an asylum there has been after twelve months no case of fever, tend to confirm previous findings after typhoid bacilli injections that the bacilli are not conserved nor excreted, but are destroyed locally or in the body tissue.

Bacilli.—The strains T (v.), BL_1, BL_2, and B.M are of recent isolation, B (w.) and P. A have been conserved about two years, and B (a.) and T., and B. enteritidis longer. The bacillus murium is kept in its most virulent state for the mouse by passage. It is with this strain that the rat virus sent out by the Pasteur Institute is prepared.

Series 1.

TABLE I.

Groups of subjects.	Sept. 22nd, 1913.	Oct. 2nd, 1913.	Oct. 16th, 1913.	Oct. 28th, 1913.
1, 2, & 3.	250 m. T. dead. ...	500 m. T. dead. ...	250 m. T. sensitised living. ...	500 m. T. sensitised living.
4, 5, & 6.	250 m. P. A dead. ...	500 m. P. A dead. ...	250 m. P. A sensitised living. ...	500 m. P. A sensitised living.
7, 8, & 9.	250 m. P. B (a.) dead. ...	500m. P. B (a.) dead. ...	250m. P. B (a.) sensitised living. ...	500 m. P. B (a. sensitised living.
10, 11, & 12.	250m. P. B (w.) dead. ...	500m. P. B (w.) dead. ...	250 m. P. B (w.) sensitised living. ...	500 m. P. B (w.) sensitised living.

Reactions.—After the first two doses (see Table I.) the local and general reactions were all slight. After the two later living vaccines there were no noteworthy general reactions. The local reactions following in those who had received the bacilli typhosi or paratyphosi A were small and passed in three to four days, but in those who had received the two living strains of B. paratyphosus B (a.) and B (w.) they were marked. The reactions were concentrated, and on the fifth day following the first living—i.e., third—injections all except one (No. 10) had slight infiltration and softening at the site. Three days later I pipetted from Nos. 8, 9, and 12 a little unabsorbed fluid which showed microscopically few microbes, mainly intact phagocytes, little serous exudate, and no signs of necrosed tissue. A pure culture of bacilli was grown. All signs of reactions disappeared after three to four weeks. Following the last injection the results were similar in all save No. 10. In the case of No. 7 I was just able five weeks after injection to withdraw into a pipette some remaining unabsorbed fluid. It showed microscopically degenerated and intact phagocytes, but no microbes, and on agar a few colonies of the bacilli in pure state grew. The inflammatory redness and œdema around the concentrated reactions disappeared after some days, but a quantity of exudate equal to about 1 c.c. was slow in absorption. The method showed clinical defects and was abandoned as impracticable of application to the strains of paratyphoid B employed.

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[2] International Congress of Medicine, 1913.

After the first two injections and after four injections the sera were taken and agglutination properties examined. Time, three hours at laboratory temperature (Table II.). The sera were pooled by groups. Dilutions 1 : 10, 1 : 50, 1 : 100, 1 : 500, 1 : 1000. Cultures of 18 hours. Controls all negative. A regrettable accident to some control tubes prevented the recording of the fixation of complement test with accuracy. It appeared that the complement was fixed by smaller quantities of serum after four than after two injections, though the last two injections were of sensitised microbes. This point will be later referred to in detail.

TABLE II.

Sera	T.	P.A.	P.B(a.).	P.B(w.).
After first o Injections.				
Bac. T.	1 : 200++	—	—	—
,, P.A ...	—	1 : 100 slight.	—	—
,, P.B(a.)...	—	—	1 : 50+	—
,, P.B(w.)	—	—	—	1 : 100++
After four Injections.				
Bac. T.	1 : 500	—	—	—
,, P.A ...	—	1 : 500	—	—
,, P.B(a.)...	—	—	1 : 500	1 : 100
,, P.B(w.)	—	—	—	1 : 500+

Series 2.

This series was next undertaken to essay, with the two strains of paratyphoid B (a.) and B (w.), the method introduced by Castellani, with later injections of living sensitised unheated bacilli. In the same series were included two groups of subjects, to each of whom were given higher doses of P.A or of another strain of B. typhosus recently isolated from the gall-bladder of a patient who died from typhoid fever of acute toxæmic form. The 10 c.c. dilutions of 20-hours growth containing about 25,000 million bacilli in saline 0·85 per cent. were heated at 53° C. during one hour. The paratyphoid A and typhoid bacilli were thus killed, but the paratyphoid B (a.) and B (w.) resisted. All doses were made to 1 c.c. saline 0·85 per cent. Grouped sera were used for sensitising; these were taken eight days after the second dose. (Table III.)

TABLE III.

Groups of subjects.	Oct. 21st, 1913.	Oct. 25th or 28th, 1913.	Nov. 4th, 1913.	Nov. 10th, 1913.
1, 2, 3, 4, & 5.	250 m. P. B (a.) ... heated 53° C. 1 hour, living.	750 m. same. ...	125 m. sensitised living. ...	125 m. same.
6, 7, 8, 9, & 10.	250 m. P. B(w.) ... heated 53° C. 1 hour, living.	750 m. same. ...	125 m. sensitised living. ...	125 m. same.
11, 12, 13, 14, & 15.	500 m. P. A ... heated dead.	1000 m. same. ...	250 m. sensitised living. ...	250 m. same.
16, 17, & 18.	500 m. T (v.) ... heated dead.	1000 m. same. ...	250 m. sensitised living. ...	250 m. same.

Reactions.—The reactions to the first injections were as in Series 1. After the second dose the local reactions to bac. P.A and bac. T (v.) were slight and passed entirely in 4 days. Those to bac. P.B (a.) and P.B (w.) were similar for 2 days, but persisted and became concentrated, slightly red, and indurated masses 2·3 cm. in diameter. On the eighth day I pipetted from Nos. 1, 2, 3, and 6 the unabsorbed fluid which gave similar findings to those found in Series 1. After doses 3 and 4 both bac. P.B (a.) and P.B (w.) produced in Nos. 1, 2, and 6 an initial inflammatory œdema and redness of about 10 cm. with later a central point of fluctuation till a nodule formed.

Clinically the bac. P.B (a.) and P.B (w.) in initial injections as living heated bacilli did not lead to the innocuous injection of these as living sensitised non-heated bacilli, nor was the fourth dose, exactly similar to the third, more rapidly absorbed. The marked virulence of these two strains of paratyphoid is diminished by this heat (as may be judged from the first dose compared to the third and fourth). The small collections of pus after the second doses are probably due to the endotoxins of the bacilli, for by culture and the microscope there was a diminution and not a proliferation of bacilli. General reactions were never marked. The clinical results again determined the impracticability of utilising the para. B bacilli so treated. The two strains of paratyphoid used are markedly more toxic for man than three others later studied, and I presume from this that the strains employed by Castellani were also less toxic.

The serological examinations (Tables IV. and V.) were made with sera taken on Nov. 2nd, 1913 (heated to 55° C. for half an hour). Dilutions 1 : 10, 1 : 50, 1 : 100, and 1 : 200. Agglutination as in Series I. Various media were tried for P.A and various ages of culture. Even a highly immunised animal (rabbit) autogenous serum only agglutinated it at 1 : 200 after 12 hours at 37° C., while previously it had done so in 1 : 2500 dilutions.

TABLE IV.

Sera pooled.	Antigens.			
	B (w.).	T.	P.A.	B (a.).
B (a.) ...	0·1 partial. ... 0·2 positive. ...	0·1 partial. ... 0·2 positive. ...	0·1 negative. ... 0·2 partial. ...	0·1 partial. 0·2 positive.
P.A ...	0·1 negative. ... 0·2 ,, ...	0·1 negative. ... 0·2 partial. ...	0·1 partial. ... 0·2 ,, ...	0 1 partial. 0·2 ,,
B (w.) ...	0 1 negative. ... 0·2 partial. ...	0·1 negative. ... 0·2 ,, ...	0 1 negative. ... 0·2 ,, ...	0·1 negative. 0·2 ,,
T.	0·1 negative. ... 0·2 ,, ...	0·1 partial. ... 0·1 ,, ...	0·1 negative. ... 0·1 ,, ...	0·1 negative. 0·2 ,,

TABLE V.

Sera of those injected.	Antigens.			
	B (w).	T.	P.A.	B (a.).
B (a.)	1 : 10	–	–	1 : 200+
P.A	–	–	–	–
B (w.)	1 : 200+	–	–	–
T.	–	1 : 100+	–	–

Further serological examination after 4 doses (Table VI.).

TABLE VI.

Sera.	Antigens.			
	B (w.).	T.	P.A.	B (a.).
B (w.)	0·2+ ...	0·2 – ...	0·2 – ...	0·2+partial.
T.	0·2 – ...	0·15+ ...	0·2 – ...	0·2 –
P.A	0·2 – ...	0·2 – ...	0·2+ ...	0·2 –
B (a.)	0·2+ ...	0·2+ ...	0·2 – ...	0·2+
Agglutination.				
B (w.)	1 : 250+ ...	– ...	– ...	–
T.	– ...	1 : 200 ...	– ...	–
P.A	– ...	– ...	– ...	–
B (a.)	– ...	– ...	– ...	1 : 250

Sera taken after injections of paratyphosus B (w.) and B (a.) fixed complement with three other strains of paratyphics B as antigens—viz., BL_1, BL_2, and BM—at the dose of 0·2 c.c., but had very slight agglutinating action upon them, the B (w.) serum more than the B (a.) serum. The serum of patient who had received T. fixed complement with other strains of T. employed as antigens and agglutinated them. The antiserum still failed to agglutinate P.A, while its specific amboceptor contents were increased. Serum B (w.) showed a more marked absolute specificity for its antigen than did B (a.) serum. Specific strain amboceptors can be often first determined. After further injections of the antigen the amboceptors may fix complement on to other allied antigens. The agglutination test remained here, as most often, the more specific. The sensitised microbes following injections of unsensitised microbes slightly increased the agglutination titre, but more so the complement fixation property of the sera.

The next two series show the results from the direct application of sensitised living paratyphoid and typhoid bacilli.

Series 3.

Four patients received as initial injections doses of bacilli living and sensitised by sera from patients who had received two doses of the dead micro-organisms. The first three had para. B (a.) and the fourth B (w.). Each an initial dose of 125 million; then after seven days a second similar dose; a week later a third dose of double the number. To another group para. A bacilli similarly prepared were injected in the same doses.

Reactions.—General reaction slight in all instances. Local reactions markedly concentrated and long to absorb following each dose of B (a.) Those following the injections of B (w.) were as usual, but slightly less than those following B (a.). The subjects who had P.A took much longer to absorb the injections than those mentioned in the earlier series, who previously had injections of the dead micro-organism. My impression from these few cases was that the previous injection of dead micro-organisms does not lead to increased local reaction to the subsequent sensitised living. The injection of living sensitised para. B (a.) produced no change in the tuberculous lesions of a subject.

The serological examinations showed after two doses no fixation of complement in 0·3 c.c. of serum and no agglutination. After the third doses there was specific fixation of complement with P.A, but by not less than 0·3 c.c.; no agglutination. With two para. B (a.) sera the agglutination titre was 1 : 50. One serum gave very slight fixation of complement by 0·3 c.c, but the other serum this exceptional result. Patient's previous history could not be learned. (Table VII.)

TABLE VII.

Antigens ...	P.B (w.).	P.BL$_1$.	P.BL$_2$.	P.B.M.	P.B. (a.).	T.	P.A.
Serum P. B (a.)...	0·1 ∓ 0·2 +	... 0·1 + ... 0·2 +	... 0·1 ± ... 0·2 ±	... 0·1 ∓ ... 0·2 +	... 0·1 + ... 0·2 +	... 0 1 - ... 0·1 +	... 0·1 ± ... 0·2 +

Series 4.

These same two strains of paratyphoid B and strains of paratyphoid A and typhoid were injected living and sensitised by immune animal specific sera. These sera were from eight rabbits to which six doses of the respective antigens were given, beginning by subcutaneous injections and later peritoneal, the last two injections consisting of first a half and then a whole culture on agar slant (heated to 53° C. during one hour and so not killed). Certain results of the serological examination of these rabbits' sera are appended for their interest (Table VIII.), especially in following on Major Lyle Cummins's work on the paratyphoid A organism.[3] The antitoxic properties were also tried and will be later reported. The value of these serological findings as indicative of immunisation I do not think it necessary to here discuss.

TABLE VIII.

Rabbit sera.	Antigens. B (w.).	T.	P.A.	B (a.).	BL$_1$.	BL$_2$.	BM.	Enteritidis.
P A ...	0·05 + 0·1 +	0·05 + 0·1 +	0·05 + 0·1 +	0·05 – 0·1 –	0 05 + 0·1 +	0·05 + 0·1 +	0·05 – 0·1 ±	0·05 – 0·1 ±
T.	0·05 – 0·1 –	0·05 + 0·1 +	0 05 + 0·1 +	0·05 ± 0·1 +	0 05 – 0·1 –	0·05 - 0·1 ±	0·05 – 0·1 –	0·05 - 0·1 ±
B (a.) ...	0·05 + 0·1 +	0·05 - 0·1 +	0·05 – 0·1 –	0·05 + 0·1 +	0·05 + 0·1 +	0·05 – 0·1 +	0 05 – 0·1 –	0·05 - 0·1 –
B (w.) ...	0 05 + 0·1 +	0·05 - 0·1 +	0·05 - 0·1 –	0 05 + 0·1 +	0·05 + 0·1 +	0·05 + 0·1 +	0·05 + 0·1 +	0·05 – 0·1 -
				Agglutination.				
P.A ...	1 : 500	1 : 500 slight.	1 : 2500	1 : 50 slight.	1 : 100	1 : 200	1 : 200	0
T.	1 : 100 slight.	1 : 3000	1 : 100	0	0	1 : 50	0	0
B (a.) ...	1 : 500	1 : 100 +	1 : 100 +	1 : 2500	1 : 1000 +	1 : 10	1 : 1000 +	0
B (w.) ...	1 : 2000	1 : 100 +	1 : 100 +	1 : 500				0

[Note.—L$_2$ was partly self-agglutinated in 0·85 per cent. of saline. The culture was shaken with glass beads during four hours without disassociation. After leaving still for some time the saline containing the bacilli that had not clumped and fallen was taken. This strain has always been most easily agglutinated or clumped. In broth cultures they fall to the bottom and leave the liquid clear. Comparative examination with this strain was therefore difficult.] A survey of results show, as in the tested human sera after injections, a more marked specificity to the antigen injected especially in agglutination titre, and certain group reactions.

Two subjects received each two doses, at seven days' interval, of 125 million B. paratyphosi B (a.), and one subject two similar doses of B (w.). The bacilli were sensitised by their respective immune rabbit serum. The general reactions were almost *nil*, but the local were concentrated, and though the inflammatory redness and œdema disappeared after one week an unabsorbed fluctuating mass containing about 1 c.c. remained during three weeks. It showed in pipetting off some sero-pus mainly intact phagocytes, little débris, no microbes to the microscope; however, a few colonies of the strain injected grew on culture media.

[*Note.*—By contrast two other subjects, who had previously received at eight days' interval doses of 250 and 500 million heated bac. para. B (a.) or B (w.), bore much better a subsequent third dose of 250 million of the similarly sensitised living B (a.) or B (w.)—i.e., twice the quantity given to those above described. Though there was never fluctuation to be felt at the site, the local inflammation remained 14 days before entire disappearance.]

Conclusion.—There was not sufficient attenuation of the bacilli by sensitisation with the employed human or rabbit specific sera to continue their employment in such doses. It is to be recalled that these two strains are the most virulent of seven strains of the paratyphoid group B studied.

With the strains of paratyphoid A and typhoid the giving of sensitised living bacilli in certain doses in the following experiment is shown to be without any inconvenience. (Table IX.)

TABLE IX.

Groups of subjects.	Dec. 17th, 1912.	Dec. 26th, 1912.	Jan. 4th, 1913.
1, 2, and 3	250m. P A sensitised by rabbit serum in 1 c.c.	... 500 m. of same in 1 c.c.	... 750 m. of same in 1½ c.c. saline.
4, 5, and 6	Same as above sensitised by human serum.	... 500 m. of same	... 750 m. of same in 1½ c.c. saline.
7, 8, and 9	250 m. T. sensitised by horse serum.	... 500 m. of same	... 750 m. of same.
10, 11, and 12	250 m. T. (v.) sensitised by human serum.	... 500 m. of same	... 750 m. of same.

Reactions.—To P.A.—A slight general reaction with rise of temperature followed each injection. Highest temperature (rectal), 38 8° C., was the morning after the third dose. Locally very slight reactions followed each dose. In three subjects the second dose took one week to disappear completely. The two methods of sensitising seemed to give comparable reactions.

To T. and T. (v.)—The T. (v.) was a recently isolated and very virulent strain; the T. was an old laboratory culture and the one used in my original applications of vaccination by sensitised bacilli typhosi. The general and local reactions were comparable to those following P.A. The temperature of two subjects who had T. rose to above 39° C. after the second dose, and one subject who had T. (v.) had a temperature over 39° C. after the first and second dose. The third dose was well borne by all. There was no difference in reaction between the recently isolated and old laboratory strain. In fact, in other work I have seen similar results. Locally the reactions were very slightly more than those following P.A.

The impression gained was that the bacilli P.A and T. or T. (v.) gave rise to local reactions much less marked than those to paratyphosi B (a.) and B (w.), and that they may be given in these doses living and sensitised by either the animal sera used or by human immune serum. As noted in my earlier publications, specific amboceptors were not determined in the sera taken after two doses of sensitised bacilli typhosi, and agglutination when present was always very slight. The sera of the subjects having only sensitised bacilli B (a.) and B (w.), withdrawn eight days after the second injection, were also negative, and there was no agglutination in dilutions above 1 : 10. A week after the third injection the serum, 0 2 c.c., of one subject who had P.A showed only partial fixation of complement with the specific antigen, but did not cause agglutination. Another serum was negative, but had an agglutination titre of 1 : 60. Sera after the third dose of bacilli T. or T (v.) each gave a very slight fixation with 0·2 c.c. with either strain as antigen. There was little agglutination. I may add that sera taken after two similar doses of dead and unsensitised bacilli T. or P.A or P.B showed with 0·2 c.c. fixation of complement on to their respective antigen and agglutinated macroscopically their strains infected in dilutions of 1 : 125.

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[3] Royal Army Medical Corps Journal, September, 1913.

Series 4a.

The reactions in five subjects who received sensitised unheated living bacilli P.A at a higher dose than 750 million show that the virulence of this strain of P.A does not justify a general utilisation of such high doses. Further, 5 female subjects who had 500 and 1000 million heated bacilli P.A in two previous injections and showed definite specific anticorps in their sera very slowly absorbed the injection, given eight days later, of 1000 million P.A sensitised and living unheated. In virulence as judged by subcutaneous injection the P.A lies midway between the bacilli typhosi and paratyphosi B (a.) and B (w.). 1000 million sensitised living bacilli typhosi are in my experience absorbed after a few days.

In utilising the observations heretofore made and facts determined, the following double method has been devised, and its application with all strains has given satisfactory results as judged from clinical and practical standpoints. Making use of the principle first applied by Castellani, I have added to sensitisation the part attenuation of the micro-organisms by heat. Before giving the results it should be repeated that the paratyphosi BL₁, BL₂, and BM are less virulent than B (a.) and B (w.), as the application to man has shown. For convenience of space the subjects will be taken in groups. All cited are from Dr. Legrain's service and are female asylum patients.

Seven cases, of ages varying from 18 to 49 years, received at intervals of 7 to 9 days, 250 million and 1000 million dead heated (53° C. one hour) P. A; then 1000 million living heated (50° C. one hour) bacilli sensitised by serum from the same group taken one week after the second injection. Local reaction was most apparent after the first injection, but in no instance marked or necessitating repose from usual occupations. Two had a rise of temperature (rectal) to 39° C.—one after first and third dose, the other after second dose. It fell each time to below 38° C in 12 hours. One patient who had had typhoid fever at 11 years of age showed a temperature chart markedly different from the others, as the temperature rose to 38·8° C. after each injection.

Fifty-five subjects received by the same procedure bacilli P. B (a.) (12), or B (w.) (10), or BL_1 (5), BL_2 (6), BM (10), B. enteritidis (Gaertner) (6), B. murium (Danysz) (5), (this latter of extreme virulence for the rat and mouse) in doses of 250 and 750 millions dead heated at 56° C. one hour, and 750 million living heated (53° C. one hour) and sensitised by the withdrawn human antiserum. If a subject shows himself of general hypersensibility to the first dose, which is rare, the two later should be one-third of the above quantities.

Reactions.—Local.—It was found better and equally practical to divide up doses that only 250 million be injected at one place. The reactions were in all cases slight and passed in three to four days.

General.—Temporary malaise was rare. The temperature (rectal) rose slightly in practically all after each injection. The three highest recorded—39·5° C., 39·4° C., and 38·8° C. —were very transitory and followed the first injection of B. enteritidis and the second injection of para. B (w.). Subjects who had had typhoid fever previously, or were in the first or second stage of tuberculosis, showed no variation from the average by their local and general reaction and no determinable activation of the affected areas in the latter groups of subjects. It is to be noted that to some subjects a hot compress was applied at the sites of injections.

A typical protocol of the serological findings from the many examinations done is appended. (Tables X. and XI.) The increase of the numbers of injections showed a corresponding rise in properties of the sera acting upon the specific, and extending often to other related antigen strains. Certain strains, notably para. BM, gave rise to a more extended amboceptor production than others. The agglutinating power of sera did not bear relation to their amboceptor contents. It showed throughout the many examinations a more marked specificity. The P.A gave rise to serum properties which will be seen to define it from the B group. It, also, like many strains of P.A, tended strongly to resist agglutination. For some unaccountable reason the laboratory culture, despite variation in the media, became entirely resistant. The culture from a slowly absorbing exudate following its injection in too high a dose in the earlier series was found by chance to be agglutinable.

The complement-fixation tests were carried out in titrating complement with sheep globules and antisheep rabbits' serum to complete hæmolysis in half an hour at 37° C., and taking twice that quantity. The antigen was then titrated with this quantity of complement, and the quantity which permitted complete hæmolysis employed. Sera were first inactivated and then tested for amboceptors for sheep's globules. If hæmolysis was produced at dose of 0·2 c.c. when in presence of titrated complement and sheep globules, it was found advisable not to use such sera in fixation tests, or they were employed only in very small doses—e.g., serum of L_2. All necessary control tubes were made up and examined at the same time.

A. After dead unsensitised micro organisms when the sera were used for sensitising and preparing the bacilli for further injections.

TABLE X.

Sera.	Antigens.												
	B (w.).	T.	P.A.	B (a.).	BL_1.	BL_2.	BM.	B. enteritidis	T. (v.).	T.c.	T.r.	T.k.	B. murium
P.A ...	0·1 –	–	+	–	–	–	–	–					
	0·2 ±	–	+	±	±	±	–	–					
P.B (w.)	0·1 –	–	–	–	–	–	–	–					
	0·2 ±	–	±	±	±	±	–	–					
P.B (a.)	0·1 –	–	–	+	–	–	–	0					
	0·2 ±	–	–	+	±	±	±	0					
$P.BL_1$ ...	0·1 –	–	–	+	+	+	+	–	–				
	0·2 +	+	+	+	+	+	+	–	–				
$P.BL_2$ ...	0·05 ±	–	–	–	–	+	–	–	–				
P.BM ...	0·05 –	+	–	+	+	–	+	–	±	±	?	?	0
	0·1 +	+	+	+	+	+	+	–	+	+	+	+	+
	0·2 +	+	+	+	+	+	+	±	+	+	+	+	+

Normal human sera all negative in these quantities.

After dead and sensitised living bacilli.

Sera.	B (w.).	T.	P.A.	B (a.).	BL_1.	BL_2.	BM.	B. enteritidis	T. (v.).	T.c.	T.r.	T.k.	B. murium
P.B (w.)	0·1 +	–	–	±	–	–	–	–	–				
	0·2 +	±	±	+	±	±	±	–	±				

The further injections of living sensitised bacilli did tend to increase the detectable amboceptor production as here shown with P.B (w.) serum. It is to be noted that P.B (w.) as an antigen does not produce strong complement-binding properties, though marked agglutination is always determined in the serum.

B. Agglutination after dead unsensitised micro-organisms. The bacilli typhosi, B. murium, and B. enteritidis were only agglutinated by their respective serums, save in low dilutions, after 12 hours. Suffice it to say for P.A serum, that it agglutinated its new culture strain, but no strain of T. or P.B. Conversely, none of the sera examined during this work, other than P.A sera, agglutinated the P.A bacilli. After two injections of dead micro-organisms P.A the agglutination titre was 1 : 200 slight, 1 : 100+, time three hours at 37° C. After further injections of sensitised living the titre was still only very slight in 1 : 200, even after 12 hours at 37° C. L_2 was partially agglutinated in 0·85 saline and was not employed in these tests.

TABLE XI.

Strains	B (a.)		B (w.).		BL_1.		B.M.	
	after 1 hr.	18 hrs. 37° C.	1 hr.	18 hrs.	1 hr.	18 hrs.	1 hr.	18 hrs.
B (a.)...	1 : 50+	1 : 250	0	1 : 50 slight.	1 : 10	1 : 250	0	1 : 10
B (w.)	1 : 10	1 : 50	1 : 100	1 : 250+	1 : 50+	1 : 250	1 : 10	1 : 100 slight.
BL_1 ...	1 : 10 slight.	1 : 50 slight.	1 : 250	1 : 250+	1 : 250	1 : 250+	1 : 50 slight.	1 : 250
BL_2 ...	1 : 10 slight.	1 : 10	1 : 100 slight.	1 : 100	1 : 10	1 : 100	0	1 : 200 slight.
BM ...	1 : 10	1 : 10	1 : 100	1 : 250	1 : 100 slight.	1 : 100 slight.	1 : 50	1 : 200 slight

The agglutination titre was slightly raised by the further injection of living sensitised agglutinated bacilli following upon the two injections of dead unsensitised bacilli.

The repeated examination of stools sometimes made after a purge has been given, blood and centrifuged urine failed in all cases to reveal the presence of the organism inoculated.

A number of subjects who had been vaccinated some months previously against typhoid fever were injected with one or other of these various strains of paratyphoid B. The reactions were similar to those who had not been so vaccinated. I may here add, however, that it has been my experience to find that if one waits so long between a first and second, or second and third injection of the same antigen, a certain part of the modifying influence from earlier dose or doses as judged by reactions has passed off, and the nearer we approach the last series of injections the less the reactions to the second series of injections of the same or a related strain.

These later results have been most gratifying, and it appears that one can by this method prepare and commence immediately the injections of any specific micro-organisms of this group causing an epidemic. Those injected do not suffer from painful reactions. The initial small dose determines a very endotoxic strain; also, the rare hypersensitive patient. The assured sensitisation by a specific antiserum and attenuation by heat permit the giving of living organisms. I have avoided the use of the word vaccine, as time alone can show the value of paratyphoid bacilli inoculations, such as has been shown with the typhoid bacilli. Certain specific properties present in the sera of patients injected have been determined, and those that appear interesting described. In THE LANCET[4] I have dealt with this question. Throughout the three years of study on the subject of typhoid and paratyphoid vaccination I have followed the suggestion kindly given me by Lieutenant-Colonel Sir William Leishman, and have injected a number of inmates in each section, the remainder serving as controls. All remain under observation from year to year. Such a basis for statistics has proved most useful this year when in the service of Dr. Llwoff, where the first series of subjects were vaccinated in 1912 with the living sensitised typhoid bacilli; there were 14 cases of typhoid amongst the non-vaccinated and none amongst the vaccinated, 10 per cent. of all.

The use of human sera and therapeutic results on animals will be discussed later. I have used specific human sera in the sensitisation of many and varied micro-organisms for a very long period and have seen no contra-indications to their use. The risk of transferring disease can be eliminated by care, or if desired the patient's own serum may be employed. This is very advantageous in treatment of chronic conditions.[5] When trying the therapeutic action of sera certain results were judged on subcutaneous abscesses. Mayer and Linser, Spiethof and Revaut have employed human blood or sera in skin diseases. The last considers a stimulation of phagocytic defence is produced.

A year ago, in collaboration with Dr. Lagane, of the Pasteur Hospital, we injected autogenous B. typhosi sensitised by tested sera taken from convalescents in their fourth or fifth week. One severe case of typhoid fever, "forme adynamique," with pulmonary complications, and whose life was despaired of, bore such vaccines well, and they may have greatly aided in her recovery. Doses were given subcutaneously, the initial being 250 million, increased and repeated daily for three days. With Lieut.-Col. Robinson I have employed the serum treated Para BM in the treatment of a case of paratyphoid B infection with definitely good results.

When in one of the early series four patients had small localised infiltrations following the bacillary injections, each received 10 c.c. of the heated serum of one of four others who had been injected with the same strain of micro-organisms. To two more, both having a small infiltration also due to paratyphosus B (a.), I gave 10 c.c. of serum from two subjects who had received T. and P.A injections respectively. The curative action on the inflamed area was very slight, though it appeared to diminish more quickly than in two patients who had received no serum and who served thus as controls. No distinction of results could be made between those who had received specific and non-specific antisera. One patient's reaction was interesting. Ten minutes after a hot compress had been applied to the infiltration on the evening of a specific antiserum injection, the region where the serum was injected became red and painful, to pass off by the morning. No reactions followed the injections of human sera. These doses in serum therapy may be considered small. As, however, Chantemesse has found even small doses of anti-typhoid horse serum lead to marked reactions, sudden enlargement of the spleen, Peyer's patches, and glands, this caution was indicated.

The question of paratyphoid injections on the extensive scale to which typhoid injections have reached has been considered. Professor Vincent made certain experiments, and recently Major Cummins has published[6] his results on a series of men. The apparent failure of B. typhosi injections against B. paratyphosi A and B, as judged from results quoted earlier, makes the question of practical interest. Infections with a strain of the group of paratyphoid B (including B. Gaertner and B. murium) appear to be of too rare occurrence to need the application of an extended scheme of injections, while the marked variability in virulence and variety in the groups and of their toxins fills the study of such a possible means of prevention with difficulties. We are, I think, led to give our attention to prophylaxis, also to treatment and vaccination by early injections of the isolated strain when sporadic or epidemic cases appear. The double method described permits of such procedure. It would be extremely valuable to find in the typhoid-paratyphoid group a strain which as antigen would create an immunity against the strains of this numerous group. In this direction the interesting serological results of the sera from the subjects who received the strain paratyphoid BM, which have fixed complement on to and shown opsonins for all the strains of B. typhosus, paratyphosus B, B. enteritidis, B. murium, and paratyphosus A, employed as antigens, have encouraged experiments into the anti-endotoxic properties of the sera, and into the value of this strain to protect against infection by all these allied strains. The serum-treated bacilli will also be tried for vaccination,[7] also continued in treatment as in case above.

To meet a possible criticism that I have not made known any experiments on animals prior to the application of the methods to man, such were undertaken. (One avoids encumbering the literature with indefinite results.) The difficulties attendant thereon were apparent. For some long time I have enjoyed the exceptional advantage of following the researches of Besredka, also those of Skrzynski in Danysz's laboratory. They have for some years been essaying endless methods and routes to vaccinate the mouse, which, as is known, takes the disease with certain strains and has similar findings on autopsy as man. However, there is no means of testing local reactions, as there follows no persisting infiltration formed in the subcutaneous tissue as occurs with high doses or not sufficiently attenuated bacilli in man. With another race of animal, the rabbit, on which I was testing virulence, the slowness of absorption to a subcutaneous injection of dead or living bacilli was a most noteworthy point. We have tried the sera of subjects inoculated with sensitised vaccines on mice by injecting it and then giving a virulent passage strain of paratyphosus B under the skin. It gave more protection than normal sera. Skrzynski has experimentally proved and Bassich[8] has recently published that mice may be vaccinated by subcutaneous inoculations against certain lethal doses given subcutaneously, but it is not yet shown that such injections protect mice against a strain that is infective by the mouth. These few experiments out of many may be quoted. They demonstrate the difficulties and present impossibility of gaining much useful information from experiments with the paratyphoid B strains on animals. One most useful indication gained was that the mouse supports a higher dose of sensitised than non-sensitised bacilli—a result seen also in man.

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[4] THE LANCET, August 24th, 1912, p. 504.

[5] Brit. Med. Jour., 1914.

[6] Royal Army Medical Corps Journal, September, 1913.

[7] Brit. Med. Jour., August [illegible]th, 1914.

It was necessary to proceed with the greatest prudence and be guided by clinical observations, just as when after the brilliant researches of Professor Metchnikoff and Besredka on the chimpanzee with sensitised B. typhosi I determined the doses applicable in prophylaxis and treatment in man. All subjects treated have remained in a condition of health similar to that prior to the injections. I wish to express my deep sense of gratitude and appreciation to Dr. Roux, also to Professor Metchnikoff and Professor Besredka, in whose service I have enjoyed the inestimable honour and advantage of carrying out the laboratory experiments, and to Dr. Marie and Dr. Legrain for their much esteemed clinical collaboration.

Queen Alexandra Military Hospital, Millbank, S.W.

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[8] Société de Biologie, 1914.

UNIVERSITY OF SHEFFIELD.—Dr. J. B. Leathes (professor of pathological chemistry in the University of Toronto) has been appointed professor of physiology in the place of Dr. J. S. Macdonald, who has accepted the chair of physiology in the University of Liverpool.—Dr. Harold Scurfield, medical officer of health of the city of Sheffield, has accepted the invitation of the council to become professor of public health in the university.

PROPOSED TUBERCULOSIS DISPENSARY FOR TORQUAY.—The Local Government Board has approved of the scheme proposed by the Devon county council of purchasing a villa, "Larchmont," for the provision of a tuberculosis dispensary in Torquay. The Torquay town council and the residents, including several medical men, opposed the scheme, and considerable regret is felt locally at the decision of the Local Government Board.

THE BEIT MEMORIAL FELLOWSHIPS FOR MEDICAL RESEARCH.—Notice is being given by advertisement that the sixth election of Fellows will take place on or before Jan. 1st, 1915. Applications must be received on or before Oct. 15th, 1914. Forms of application and all information may be obtained by letter only, addressed to the Honorary Secretary, Beit Memorial Fellowships for Medical Research, 35, Clarges-street, Piccadilly, London, W.

Reviews and Notices of Books.

Nouveau Traité de Pathologie Générale.

Publié par CH. BOUCHARD, Professeur Honoraire de Pathologie Générale à la Faculté de Médecine; G. H. ROGER, Professeur de Pathologie Expérimentale à la Faculté de Médecine, Médecin de l'Hôtel-Dieu. Tome II. Rédigé par MM. F. BESANÇON, E. BODIN, J. COURMONT et A. ROCHAIX, J. GUIART, H. ROGER, P. TEISSIER. Paris: Masson et Cie. 1914. Pp. 1174. Price 28 francs.

THE first volume of this comprehensive work on general pathology was reviewed in THE LANCET of Oct. 26th, 1912. When complete it will extend to four large and bulky volumes. Somewhat less than one-half of the entire text, nearly 500 pages, is required for the elaborate treatise of Professor H. Roger on Intoxications and Auto-intoxications. No better expositor of this subject could have been found. Professor Roger subdivides his subject as follows: (1) General considerations on intoxications; (2) the sources of intoxication; (3) auto-intoxications; and (4) actions of poisons on the organism. On reading this contribution one is surprised at the enormous mass of facts which the author has marshalled in orderly array. It is a compendious treatise in which searchers after facts may dig for details with a certainty of finding them. The author takes a wide view of his subject. Poisons are classified as endogenous and exogenous; the channels by which poisons enter the body are next considered. Absorption through the digestive, respiratory, urinary, genital, and cutaneous surfaces is discussed, as well as subcutaneous absorption and absorption by pathological tissues. Intravascular injections are considered and the conditions that favour absorption, leading on to the question of "toxic doses," a subject that is treated with great detail. Then follows an elaborate account of the relation between chemical constitution and toxicity, the action of poisons on the organism, including the blood, lungs and nervous system, and the channels by which poisons are eliminated. The protective rôle of the liver is admirably portrayed.

In the second part the alimentary, putrid, and non-alimentary poisons are successively and successfully dealt with. As to alimentary poisons, those regularly present in our food are first discussed and then accidental poisonous ingredients in food. Most interesting are the author's statements respecting alcohol regarded as a food, though it must not be concluded that it is either a good or a cheap food. There is much that is new and original in the chapter on putrid poisons. Under non-alimentary poisons the following, amongst others, are discussed: pollen, tobacco, opium, morphine, cocaine and ether, and poisoning in the course of daily work, "professional or trade intoxications," and intoxications during fœtal life. This part is brought to a close by a particularly interesting account of "venins" from serpents, fishes and scorpions, the latest researches of Richet and others on sea-anemones and anaphylaxis being included. Auto-intoxications under normal and under pathological conditions are next passed in review. The toxicity of extracts of the various tissues, digestive secretions and digestive products, the poisons of the blood and urine, are all successively discussed. Amongst the pathological auto-intoxications those resulting from gastro-intestinal, hepatic, and renal incompetence are very fully dealt with, and their significance and causes explained. Uræmia, eclampsia, affections arising from defects of the ductless glands, injuries to the skin and nervous system, and then the auto-intoxications arising from parasitic and infectious diseases, from cancer, acetonæmia, uricæmia, ammonæmia, and azoturia bring this elaborate, comprehensive, and thoughtful treatise to a close.

The contribution on the general etiology of parasitism and infection, by P. Teissier (pp. 487–678), begins with a concise and interesting history of the causes of infectious diseases, including microbes and parasites. The importance of animal parasites—e.g., certain protozoa—as disease-producers is fully emphasised, as well as of the parasites belonging to the vegetable kingdom—i.e., zoo-parasites and phytoparasites. The viruses which are invisible to the microscope, but which can pass through certain filters, are dealt with in detail. The pathogenic properties—vitality, virulence, modes of parasitic life, the physical and chemical conditions which favour or retard their growth and development, the influence of light, electricity, dryness, oxygen, ozone, and the variability of resistance of pathogenic germs—are passed in review. After a consideration of the habitats of microbes (air, soil, water), their foods and means of transport, the larger animals are discussed as reservoirs of microbial or parasitic diseases, a caution being given as to the dangers in this connexion associated with domestic animals. Lastly, man himself as an agent de propagation is dealt with under the titles of: (1) hetero-infection, (2) hetero-contagion, and (3) auto-infection. The adjuvant and predisposing causes of parasitism and infection are next discussed. The article terminates with a most interesting historical and practical account of epidemic diseases.

F. Bezançon gives in 100 pages a straightforward practical, and clear account of "les bactéries." First a general summary is given of their form, size, structure, granulations, metachromatic corpuscles, pigments, mobility, reproduction, chemical composition and nutrition, and the products of microbial life, and, lastly, of the operations by means of which the species may be diagnosed—including inoculation in animals. The main part of this memoir is taken up with a description of the general characters of the principal species of pathological microbes in man under the following heads: (1) coccaceæ, (2) bacteriaceæ, (3) aerobes and anaerobes, (4) spirillaceæ, (5) corynebacterium, and (6) acid-resisting bacilli.

E. Bodin writes clearly of the parasitic fungi in man. The memoir is well illustrated, and it deals in an attractive way with a subject which is apt to be neglected. To Jules Guiart is entrusted the biology and pathogenic rôle of animal parasites, one of the most interesting chapters in the book. We most heartily commend its intimate study to the zoologists as well as to the pathologists. A most excellent, well illustrated monograph.

To J. Courmont and A. Rochaix about 200 pages are assigned, in which they discuss and elaborate infectious disease under the following headings. The acute virulent attack, the channels of entry, and the virulent agents themselves, first line of defence at the port of entry; the second line of defence—phagocytosis and the bactericidal power of the "humours," causes which favour infection; third line of defence—general reactions of the organism, and the special reactions of organs and tissues.

We offer hearty congratulations to the various authors for the compendious, practical, and readable account of the subjects dealt with in a book that should find a place in every medical library.

Traité de Chirurgie d'Urgence.

Par FÉLIX LEJARS, Professeur à la Faculté de Médecine de Paris, Chirurgien de l'Hôpital Saint-Antoine, &c. Septième Édition, revue et augmentée. 1086 figures, dont 729 dessinées par le Docteur E. DALEINE et A. LEUBA, et 198 photographies originales ; 20 planches hors texte. Paris : Masson et Cie. 1913. Pp. 1167. Price 30 francs.

THIS work is so well known and has passed through so many editions that it would be hard to say anything about it that is not already known to the medical profession. The new edition has been brought up to date and represents present-day surgery, especially of the French school. The additions are five new chapters on acute dilatation of the stomach, the surgical treatment of acute pancreatitis, obliteration of the mesenteric vessels, sigmoiditis, and the dislocations of the pelvis. In discussing acute dilatation of the stomach the author relates an interesting case in which this condition occurred in a woman, 58 years of age, after a supravaginal hysterectomy. Great benefit resulted from placing the patient in the ventral position; ultimately, however, she died from toxæmia. The author considers that in this case the acute dilatation was brought about by the swallowing of air, mixed with saliva, and he attributes it to the excessive quantity of saliva secreted as a result of the anæsthetic. The gastric mucous membrane is irritated and secretes mucus copiously, while the distention of the stomach with saliva and mucus causes kinking at its orifices, and so the distension becomes still more marked. For the treatment he advises the ventral decubitus and the passage of a stomach tube.

The account of acute pancreatitis and its treatment is very clearly written, and an interesting description of the obliteration of mesenteric vessels is given. There are also 92 fresh illustrations. Since we reviewed the last edition[1] an English translation has appeared.

The Newer Physiology in Surgical and General Practice.

By A. RENDLE SHORT, M.D., B.S., B.Sc. Lond., F.R.C.S. Eng., Hunterian Professor, Royal College of Surgeons; Examiner in Physiology for the F.R.C.S., &c. Third edition, revised and enlarged. Bristol: John Wright and Sons, Limited; London: Simpkin, Marshall, Hamilton, Kent, and Co., Limited; Toronto: The Macmillan Company of Canada, Limited. 1914. Pp. 256. Price 5*s.* net.

IN reviewing the first issue of this work in THE LANCET of June 8th, 1912, p. 1541, we described its contents, pointing out its great value for practitioners and expressing the hope that it might appear in a second edition in which yet other applications of recent physiology to surgical problems might be described. This hope was fulfilled in a very few months, for in THE LANCET of August 10th of the same year, p. 370, we had to renew our commendation of a second edition, containing considerable extensions, a new chapter, and the introduction of several new subjects.

It will be seen that in the title of the present

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[1] THE LANCET, May 28th, 1910

(the third) edition the word "new" has been changed to "newer," suggesting a further increase in scope. On perusal we find this to be the case. New chapters are introduced on the vitamines and the genital glands, while the chapters on surgical shock, the pituitary and pineal glands, and on digestion have been to a great extent rewritten. The opening chapter on vitamines discusses their relationship to deficiency diseases, and gives a neat summary of our knowledge upon this subject so far as it has been advanced, but, as the author is careful to point out, "we must wait for further observations before deciding whether the pathology of the disease (e.g., rickets) is simply fat starvation, or whether the patients have been deprived of a necessary vitamine." Important additions have also been made in the chapters on the thyroid and the spinal cord. The importance of an acquaintance with our newer knowledge of the physiology of the thyroid and its functions to the general practitioner, as explaining many formerly obscure clinical conditions. is obvious. The chapter on surgical shock is excellent. The theory of Crile and Mummery, the acapnia theory, the oligæmia theory, and the theory of suprarenal exhaustion are explained, and in connexion with the last named the author's "adrenalinscope," which it is claimed will show appreciable evidence of the presence of even 1 in 500 million of adrenalin (Parke, Davis), is described. The author himself leans to the view that surgical shock is brought about by nociceptive impulses inhibiting or paralysing the important nuclei in the region of the fourth ventricle, and perhaps in the cerebellum, which, as Sherrington and others have shown, are continually sending impulses down the spinal cord, maintaining its functional activity and increasing muscular tone. With inhibition of these impulses tone is abolished and blood pressure may fall. The respiratory centre, and even the vasomotor centre, may share in this inhibition.

Great as was the value of the book at its first issue, it is now indispensable to the general practitioner who wishes to keep himself versed in the rapidly augmenting area of physiological knowledge ready to be applied in medicine. Evidence of the author's practical acquaintance with his subject from experimental investigation is plentiful in the book.

Natural Therapy: a Manual of Physio-therapeutics and Climatology.

By THOMAS D. LUKE, M.D. R.U.I., F.R C.S. Edin., Medical Superintendent, Peebles Hydropathic, N.B., and NORMAN HAY FORBES, F.R.C.S. Edin., F.R S. Edin. Bristol: John Wright and Sons, Limited. Pp. 316. Price 5*s.*

WE have already commented on the nature and scope of this book which gives a good description of the various methods and appliances necessary for the numerous processes which may be carried out at recognised spas or in private houses or institutions.

Mr. Forbes's remarks on medical climatology and the principles of climatic treatment are brief but practical. He suggests certain "golden rules" which he rightly thinks will be of use to the busy practitioner. We agree that it is a matter for regret that there is no systematic teaching of medical climatology in this country, and yet medical men are being constantly asked to recommend climatic resorts to their patients. The hints and suggestions offered by Mr. Forbes are well worth consideration. It is satisfactory to note that considerable attention is paid to British resorts, more especially as under existing conditions a very large proportion of the continental ones are out of the question.

On again perusing this volume we can express the favourable opinion we previously formed.

On Dreams.

By Prof. Dr. SIGMUND FREUD. Authorised English translation by M. D. EDER. With an introduction by W. LESLIE MACKENZIE, M.D. Aberd., LL.D. London: William Heinemann. 1914. Pp. 110. Price 3*s.* 6*d.* net.

Dr. Eder is to be congratulated on his excellent translation of Professor Freud's small explanatory volume on his theory of dreams. In view of the complicated terminology of the original we are the more grateful to the translator that we are not every now and then pulled up by a too literal rendering of a German idiom or by an unwonted scientific expression. For new ideas in psychology we suppose a new terminology is requisite, but at least it should conform with accepted methods of word-formation and usage. In this connexion we do no more than justice to Dr. Eder when we say that we think his translation is superior to others of Freud's books that have appeared in this country.

The essay itself is purely expository and explanatory; it contains a succinct account of the Freudian hypothesis of dream construction, with its condensation, displacement, dramatisation, and so on. A selection of picked dreams is given to exemplify these hypothetical processes. The reader will meet in this little book with reassertions of the now no doubt familiar tenets that dreams are the concealed realisations of repressed desires; that most of the dreams of adults can be traced by analysis to erotic desires; that repressed infantile sex desires form the most frequent and the most powerful impulses for the formation of dreams; that the dream is the guardian of sleep. Professor Freud has outlined his position in these pages quite clearly, and while he disclaims pretension to have dealt with all the problems of the dream, he has nevertheless furnished the reader with a very fairly comprehensive account of his views. To those who merely seek information, therefore, the book will be welcome. Whether Professor Freud carries conviction in his statements need not be discussed here.

LIBRARY TABLE.

Materia Medica for Nurses. By A. S. BLUMGARTEN, M.D., Instructor in Materia Medica at the German Hospital Training School for Nurses. New York: The Macmillan Company. 1914. Pp. 644. Price 10*s.* 6*d.* net.—Looking at the fulness of this textbook and its 644 pages, one asks oneself why the words "for nurses" form part of the title. In the preface attention is drawn to the replacement of technical terms, when they are not in common use, the teaching of facts rather than words, and a progressive procedure from the known to the unknown, as characteristics of the book that render it suitable to its professed purpose. So much normal physiology as is necessary to a clear understanding of drug action is incorporated. Little attention is paid to therapeutics, as it is the nurse's duty not to treat disease but to administer medicines and observe their effects. We think the book contains a great deal too much for those for whom it is expressly intended—at any rate, until they have attained to such a standard of experience and proficiency that they might read the ordinary text-books on the subject with advantage. For medical students, and even for general practitioners, it contains much that might be of service both in subject matter and method. It needs careful editing, however. We have noted a number of mistakes—oleoresinæ as a nominative singular; rheii, once misprinted pheii, for rhei (p. 105); phenolphtalein for phenolphthalein; ichthosulphonas for ichthyosulphonas; aspirosperminal for aspidosperminal; and so on. Aspirin, though mentioned under salicylic acid, is not indexed. Numerous trade preparations are introduced. Finally, we emphatically protest against the statement on p. 417 that veronal is "a very safe drug."

Collected Papers by the Staff of St. Mary's Hospital, Mayo Clinic, Rochester, Minnesota, for the year 1913. London and Philadelphia: W. B. Saunders Company. 1914. Pp. 819. Price 24*s.* net.—We welcome another volume of the collected papers coming from the Mayo Clinic. The size of the volume is an indication of the activity of this surgical centre, which has won a world-wide recognition. The writers are 28 in number, and there are 78 papers in all. These deal with nearly the whole arena of surgical practice, but especially with the alimentary canal, though another important section is that devoted to studies of the thyroid gland. Among the 15 papers on this subject we may mention one by Dr. Charles H. Mayo, based on the 5000 operations on the thyroid which have been performed at the Mayo Clinic during 25 years. It is of interest to note that the 5000 cases were almost equally divided between simple goitres and exophthalmic goitres.

Exercises for Women, with Illustrated Details of Mat Exercises. By Florence Bolton, A.B., Stanford University, Director of Women's Gymnasium, Stanford University. New York and London: Funk and Wagnalls Company. 1914. Pp. 141. Price 4*s.* net.—The first few chapters of this useful book concern the bodily mechanism, and deal with such exercises, and certain conditions which the exercises are intended to meet, as have occurred most frequently in the course of a long practical experience in gymnastic work and physical examination. The first chapter contains some interesting and helpful remarks concerning the importance of deep breathing for women, the bad results of pelvic congestion, more particularly as regards the menstrual periods, and the proper and improper use of the feet in walking. In the second chapter the important question of clothes and shoes is considered, and in the third are some general remarks *re* the proper place and the proper manner in which exercises should be employed. The next three chapters deal with a complete series of mat exercises suitable for women, and in an appendix these are tabulated for the use of teachers. A very useful and clearly written work of its kind.

The Backward Child. By Barbara Spofford Morgan. London and New York: G. P. Putnam's Sons. 1914. Pp. 263. Price 5*s.* net.—The experience of school administrators has proved that the problem of retardation in children is distinct from that of the detection and correction of physical defects. The typical backward child may or may not be healthy; his mental deficiency or aberration is not of the kind or degree which demands institutional treatment. On the other hand, unless the nature of his abnormality be discovered and specially dealt with he will not be able to obtain the full advantage of the ordinary curriculum. Mrs. Morgan describes in clear and untechnical terms the system by which she tests the senses and faculties of backward children, and the types of special training which, in her experience, have proved successful in removing the obstacles to normal development. In comparison with the elaborate investigations described, e.g., in Schulze's work, Mrs. Morgan's method is simplicity itself, no apparatus being required beyond a few pictures, a box of letters, an assortment of coloured worsteds, and so forth. The tests themselves are so clearly described that any intelligent teacher, granted a certain psychological acumen, might apply them, but there seems no doubt that they would suffice to effect at least a provisional diagnosis and classification of the commonest forms of retardation. They provide for the qualitative appraisement of the various forms of sensibility. A point dealt with in more than one section is the advantage which may be taken of idiosyncrasies in the furtherance of general development. Thus a child who could not learn to read, having been found to be "ear-minded," was taught the alphabet by being encouraged to play tunes on a piano on the white keys of which the letters had been printed. "As a matter of practical experiment," says the authoress, "backward children can be brought up to a normal average in their lessons by half an hour's daily individual training. The person in charge of the training may even be inexperienced, provided only the diagnosis has been made by a competent examiner, and the directions given by her for training are clear-cut and specific." Apart from the undoubted interest and value of the work upon which it is based, Mrs. Morgan's little book deserves commendation for the ease and lucidity of its style. It should receive the serious attention of all who are interested in educational matters.

MISCELLANEOUS VOLUMES.

Florence Nightingale to her Nurses (London: Macmillan and Co., Limited. 1914. Price 1*s.* net. Pp. 147) is a little volume made up of a selection from Miss Nightingale's addresses to probationers and nurses of the Nightingale School at St. Thomas's Hospital. They are altogether admirable. Written for women working in the world, and a very real and hard world at that, they dwell on the spiritual side of work, and yet are illuminated with that sound common sense which has always been a characteristic of the great saints, such, for instance, as St. Bernard and St. Francis Xavier. It would make an excellent text-book for the thousands of willing, yet untrained and professionally ignorant women, who at this time are offering themselves for nursing work, with a very slight idea of the difficulties and responsibilities of the calling.

The *Proceedings* have been published of the Fifth Annual Conference of the British Hospitals Association, which was held at Newcastle-on-Tyne from June 18th to 20th, 1914 (London: Scientific Press, Limited. Pp. 94). They contain besides the address of welcome by the Lord Mayor of Newcastle, papers by Dr. G. H. Hume on the Voluntary Hospital on its Trial; by Councillor Herbert Shaw, of Newcastle-on-Tyne, on the Voluntary Hospitals in Relation to Social Service Work; by P. J. Michelli, C.M.G., on Pensions for Hospital Employees; by William Straker, corresponding secretary of the Northumberland Miners' Association, on the Proposed Amendment of the Truck Acts, 1831–1896, and How it may Affect the Voluntary Hospitals; with the discussions thereon.

Four reference books claim attention. As the *Annual Charities Register and Digest*, compiled by Mr. C. S. Loch (London: Longmans, Green and Co. 1914. Pp. 682. Price 5*s.* net) is now in its twenty-third edition, it seems unnecessary to say more than that it is a classified register of charities in or available for the metropolis, and a digest of information respecting legal and voluntary means for the prevention and relief of distress and the improvement of the condition of the poor. In addition to a review of the year's progress in organised benevolence there are articles by competent authorities on various branches of charitable work, and an introduction entitled, "How to Help Cases of Distress." An elaborate index facilitates easy reference.—— *The Girls' School Year Book* (London: The Year Book Press. 1914. Pp. 665. Price 3*s.* 6*d.* net) is described as the official year book of reference of the Association of Head Mistresses. In the first part of the book the personnel of each school is given, together with fees and hours of attendance, curriculum, scholarships, and so forth, and in the second part there are articles on various openings for girls on leaving school and on matters of general interest to both parents and scholars. The right of insertion in the text of the book has been limited to public secondary girls' schools, which are distinguished from private schools by the fact of possessing a governing body.——The *London Matriculation Directory*, June, 1914 (London: W. B. Clive, The Tutorial Press, Limited, High-street, New Oxford-street, W.C. Pp. 142. Price 1*s.* net), contains much information suitable for prospective candidates for degrees at London University, in addition to the examination papers set at the June matriculation examinations, with appropriate answers. Notes on the text-books in each subject and comments on the examination papers are also given.—— The list of *Medical Homes for Private Patients*, published annually by the Scientific Press, Limited, price 6*d.*, affords useful information to the busy practitioner desirous of ascertaining what particular home, sanatorium, or health resort will suit a particular patient. As, however, according to the preface, "this little book is designed to be of service to both medical men and their patients," we regret to find that the list of consulting physicians, surgeons, and specialists previously adversely commented on by us still mars an otherwise commendable little book. For the profession such information is quite unnecessary; for the public it may be very misleading.

JOURNALS AND MAGAZINES.

Quarterly Journal of Experimental Physiology. Edited by E. A. Schäfer, W. D. Halliburton, C. S. Sherrington, E. H. Starling, and A. D. Waller. Vol. VIII., Nos. 2 and 3. London: Charles Griffin and Co., Limited. 1914. Pp. 103–302. Price 15*s.*—The Effect of Pituitary Extract on Milk Secretion in the Goat, by Reuben L. Hill and Sutherland Simpson. In 1910 it was shown by Ott and Scott that in the goat intravenous injection of pituitary causes a marked increase in the rate of milk secretion. The same result obtains in lactating cats and dogs. The authors have made more extended researches, and they find that: 1. Intravenous or subcutaneous injection of the extract obtained from four ox pituitaries produced a marked increase in the amount of mammary secretion of a goat when milked 15 minutes after injection. 2. A corresponding decrease below normal follows at the next milking several hours later. 3. As pointed out by Hammond, there is also a marked rise in fat content in the milk secreted after injection, but there is no sudden fall in the fat percentage at the next milking, as was observed by this investigator. 4. The solids, not fat, of the milk appear to be unaffected by the extract.—The Influence on Metabolism of Administration of Small Amounts of Thyroid Gland and of Anterior and of Posterior Lobe of Pituitary, by James Arthur Hewitt. Administration of fresh ox thyroid to adult white rats in daily amounts of 0·5 grm. and over to each rat causes loss of body weight *pari passu* with the amount of thyroid given. Administration of 1 grm. fresh ox thyroid diminishes the appetite and consumption of food, while 0·5 grm. fresh thyroid greatly increases it. Administration of thyroid causes retention of nitrogen, but the retention is much greater when 0·5 grm. is given than with larger amounts. Thyroid gland administered in small amounts—0·25 grm. to 0·125 grm. of fresh gland—to white rats, fed on an otherwise normal diet, produces results which differ according to the amount of gland given.—Diastolic Blood Pressure Estimations by the Auscultatory and Oscillation Methods, by G. Spencer Melvin and J. R. Murray. The authors describe their methods and the use of the Erlanger sphygmomanometer. The observations were made on healthy young adults and children. They conclude that the auditory method, checked by comparison of the tactile and auditory systolic indices, is by far the simplest and most precise method of blood pressure estimation. In healthy young adults the diastolic pressure is about 68 mm.—Changes in the Hydrogen Ion Concentration of the Blood Produced by Pulmonary Ventilation, by T. H. Milroy. The author describes the method of carrying out electrometric measurements on cats and dogs. Pulmonary ventilation with air or air and oxygen produces a rapid fall in hydrogen ion concentration, reaching its lowest level after a very short period of ventilation. Ventilation with gas mixtures rich in CO_2 leads to a rise in (H+) instead of a fall. Very probably the activity of the respiratory centre is largely dependent upon the hydrogen ion concentration of the blood. —Studies in the Physiology of the Nervous System, XX., Rhythmic Movements as Immediate Reflex Phenomena of Compound Stimulation; and XXI., Rhythmic Movements as Successive (or Terminal) Reflex Phenomena of Compound Stimulation [Progression Conditioned by Antagonistic Reflex Stimuli], by T. Graham Brown. These two elaborate papers occupy over 70 pages. A satisfactory résumé of the authors' conclusions is given in a summary.—The Pressor Bases in Normal Urine, by William Bain. Normal urine of adults contains certain bases which when injected into the blood stream of anæsthetised or pithed animals produce a marked rise of arterial pressure, and it would appear that they are either reduced in amount or absent from the urine of patients with high blood pressure. The most abundant base present is soluble in ether, and was isolated as an oxalate. After ether extraction amylic alcohol dissolves out from the residue a small amount of pressor material. It was not isolated, and its pressor effect may be preceded by a fall of blood pressure. Trimethylamine is not a pressor substance. If a pressor effect is obtained it is due to impurities in commercial specimens.—The Origin of the Active Material of the Posterior Lobe of the Pituitary Body, and the Physiological Activity of the Pars Intermedia and Pars Nervosa Compared, by P. T. Hering. The active principle or principles appear to have their origin from cells of the pars intermedia. The cells of the latter secrete a thin colloid material which finds its way into the pars nervosa, especially around the capillaries of the lobe. It cannot be said that there are separate and distinct principles which act upon uterus and mammary gland, upon blood pressure, and upon kidney. The active principle obtained from the pars intermedia and pars nervosa of the ox stimulates uterine muscle, but the pars nervosa is from two to five times more powerful than the pars intermedia in its action. A 0·5 per cent. extract of the dried pars intermedia has no specific action on blood pressure, kidney volume, or urinary secretion. A similar extract of dried pars nervosa—0·005 per cent.—injected intravenously produces a prolonged rise of blood pressure, increase of kidney volume and of urine, characteristic of the posterior lobe of the pituitary. The active material of the posterior lobe is probably a product of the epithelial cells of the pars intermedia.—Experiments on the Surviving Mammalian Intestine, by James A. Guner and S. W. F. Underhill. The authors used in essential respects the method of Magnus. They studied the survival of intestinal muscle at different temperatures, the myogenic origin of the pendulum movements, and the contractions of the muscularis mucosæ of the cat's intestine. From their observations the authors conclude that the receptive substances connected with the sympathetic nerve terminals have a greater vitality than those connected with the parasympathetic nerve terminals. The completely isolated circular muscle of the cat's small intestine can execute pendulum movements. It would seem that the rhythmicity of these movements is an inherent property of the muscle itself. Adrenine has a motor effect on the rhythmic contractions of the muscularis mucosæ, as on those of the spleen. It is suggested that adrenine when used as a styptic in gastric ulcer may help to arrest capillary hæmorrhage by contracting the muscularis mucosæ.

The Military Surgeon.—The August number of this journal opens with a long and careful paper on the Sanitary Service of Manœuvre Camps, by Major J. H. Ford, Medical Corps, United States Army, showing the care with which medical officers are instructed in the work which has to be done; the scheme of instruction is at the close compared with that followed by the Royal Army Medical Corps.—First Lieutenant H. C. Michie tells of the development of flies in camp at Texas City. Flies develop chiefly in kitchen refuse, especially fresh meat, and in the fæces of men and animals. A cake of discarded soap was found full of young larvæ. A female lays 200 eggs; they hatch in 12 to 24 hours; the larvæ moult successively in four to six days, acquire a hard shell and become pupæ. In this stage they remain quiescent five days or so, when they turn into adult flies which are at first weak, but fly away in a few hours after emergence. Thus development takes about ten days. This process requires so much moisture as is found in garbage from 2 to 24 inches below the surface. Garbage should be all carefully and completely burned. Ants destroyed the larvæ and nymphæ very persistently, especially the nymphæ, which are found close to the surface of the garbage heap where the ants could reach them. The larvæ, who want more moisture, burrowed deeper, coming back towards the surface to pupate. In the United States camps fly traps are used, baited with fish or meat, flies are poisoned, kitchens are screened, the camp kept clean, garbage burnt as far as possible, and the residue exposed in layers no deeper than 4 inches so that it shall dry. Lime on garbage destroys larvæ, and is very useful about kitchens and in latrines.—At Vera Cruz, Mexico, the United States expedition in May and June lost only one man from disease, from bacillary dysentery. That disease is best treated with sulphate of magnesia in frequent small doses; amœbic dysentery, which has also occurred, is reported easily cured with emetine. Vera Cruz is nearly freed from mosquitoes as the result of the work of Major Noble and 200 to 400 men. 41,404 persons were vaccinated between May 18th and June 30th.—To July 19th six plague rats have been found in New Orleans of 6307 trapped. Seven human plague cases have been discovered, and a cleaning-up campaign is going forward busily.

"CHILD WELFARE" WORK IN BIRMINGHAM.

Dr. John Robertson, the medical officer of health of Birmingham, has presented an interesting special report to the town council on child welfare in the city during 1913; the conditions associated with excessive child mortality; and the new directions in which he advises that municipal action should follow in dealing with the matter. The diagrams and tables included in the report deal principally with "infant" mortality—i.e., of children under 1 year of age—and its local incidence and prevention; but Dr. Robertson actively supports the movement to extend the personal supervision of children over 1 year of age until they go to school and come under the school medical service. He urges the systematic establishment of consultation centres not only for all these children, but also for mothers in regard to ante-natal conditions, and for the purpose of instructing them in elementary cookery, the making of infants' clothes, and incidentally their education and advice in such matters as savings clubs and food values. Such "welfare stations," to serve the whole of the city, would need to be about ten in number, and would be worked as a development of the existing agencies, which already comprise three or four voluntary societies doing good work and receiving medical assistance and other aid from the corporation, and 21 health visitors working mainly in connexion with notifications received under the Notification of Births Act. It is stated that the proposed welfare stations will not interfere with the private medical practitioners in the neighbourhood, and that it might be desirable to enlist the paid services of such practitioners in carrying them on. It is not easy, however, to understand how some degree of interference with medical practitioners can be avoided. A system which involves the municipal care and medical treatment of the mother in both ante-natal and post-natal periods is not likely to go on for long without being extended to the provision of midwifery, while the municipal supervision and treatment of children, with the aid of health visitors from the local clinics, cannot logically be restricted to "minor" ailments. Dr. Robertson considers that much larger accommodation is needed for sick babies during certain periods of the year, and to begin with he advocates some special institutional provision for infants suffering from epidemic diarrhœa during the hot months of the year. In certain homes it is clear that an infant attacked by epidemic diarrhœa has little or no chance of recovery, while such children might do well in infant hospitals more or less on the lines of those frequently found in continental cities.

The information given as to infant mortality in 1913 tells the usual story of the close relation of high infantile death-rates with localities where poverty is at its deepest and housing conditions least satisfactory. In Dr. Robertson's words, "there are many conditions in the surroundings of an infant born in the central areas of a large city like Birmingham which make it very difficult for even a reasonably careful mother to rear her child without exposing it to the infection of epidemic summer diarrhœa." It may be conjectured that the great activity which has been shown in Birmingham in dealing with unwholesome environmental conditions has played a considerable part in the reduction of diarrhœa mortality in recent years, in addition to that taken by the health visiting and infant consultations. Among preventive measures in respect of infant mortality as a whole, the removal of causes of poverty is perhaps the most fundamental and the most difficult. But much may be done, particularly among the relatively prosperous artisan class, by education of mothers, advice during pregnancy, and in the various other matters which Dr. Robertson desires to see better arranged. The attack by means of such organisations on the host of infant deaths attributed to prematurity and debility is perhaps most hopefully carried on among mothers of this class. The share of syphilis in producing high infantile death-rates and high rates of stillbirth is necessarily very imperfectly shown in statistics available at present. Special welfare centres which Dr. Robertson proposes would probably need sooner or later to be closely associated with clinics or other municipal arrangements for dealing with syphilis and venereal diseases.

ROYAL MEDICAL BENEVOLENT FUND.—At the last meeting of the committee 18 cases were considered and grants amounting to £130 voted to 13 of the applicants. The following is a summary of cases relieved:—

Widow, aged 26 years, of M.R.C.S. Eng. who practised at Laindon. Left totally unprovided for with one child aged 21 months. Husband had been ill for some time before death. Friends only able to help slightly. Voted £10 in two instalments and referred to the Guild.—Daughter, aged 31 years, of M.R.C.S. Eng. who practised at Poplar and Bootle. Has endeavoured to earn her living by needlework, but her health has completely broken down. Voted £2, with leave to apply again in October, and referred to the Guild.—M.D. of Edin., aged 58. Health very bad and unable to practise. Has endeavoured to run a nursing home, but has not been successful owing to the illness of his wife and self. Three children unable to help. Voted £12 in 12 instalments through the Bexhill honorary local secretary.—Widow, aged 44 years, of M.B. Aberd. who practised at Leylands. Has endeavoured to maintain herself by letting rooms, but has been unsuccessful lately. Two children, 14 and 16, both at school. Relieved seven times, £75. Voted £12 in 12 instalments.—Daughter, aged 63 years, of M.R.C.S. Eng. who practised at Ford, near Chippenham. Health will not allow her to work. Only income 5*s.* per week from friends, which pays for rent. Relieved seven times, £87. Voted £12 in 12 instalments.—Daughter, aged 58, of M.R.C.S. Eng. who practised at Dorking. Health very bad, and has recently been operated on in hospital. Only income from another charity 5*s.* per week. Relieved twice, £20. Voted £10 in two instalments.—Daughter, aged 64, of M.R.C.S. Eng. who practised at Liverpool. Only certain income about £13 per annum. Friends help a little. Quite a confirmed invalid. Bulk of income lost through Australian bank failure. Relieved once, £12. Voted £12 in 12 instalments.—Widow, aged 57 years, of L.R.C.P. & S. Edin. who practised at Walsall. Earns a little by taking in lodgers. Brother had used to help a little until three months ago. Two daughters unable to help. Relieved eight times. £82. Voted £12 in 12 instalments.—Widow, aged 43 years, of L.R.C.P. & S. Edin. who practised at Ellesmere Port. Seven daughters, aged 4 to 17. Only income about £57 per annum. Tried to supplement income by taking in boarders, but not successfully in consequence of large family. Relieved twice, £24. Voted £12 in 12 instalments and referred to the Guild.—M.R.C.S. Eng., aged 81 years who practised at West Kensington. Now quite blind. Lost all his savings in assisting his family. Eldest son now practically blind and unable to work; lives with the father. Joint income less than £50 per annum. Relieved once, £12. Voted £2 and deferred for further investigation.—Widow, aged 57, of L.R.C.P. & S. Glasg. who practised in Ireland and London. Endeavours to earn a living by taking in boarders, but recently has not been very successful and health has been indifferent. Relieved three times, £15. Voted £10 in two instalments.—Daughter, aged 58, of M.R.C.S. Eng. who practised in London. Has no income and too ill to work. Lives with a delicate friend who has a very small pension. Relieved nine times, £94. Voted £12 in 12 instalments.—Widow, aged 64, of M.R.C.S. Eng. who practised at Ash. Health very indifferent. Five children; none able to help. Rent paid by her brother. Relieved once, £12. Voted £12 in 12 instalments.

Contributions may be sent to the honorary treasurer, Dr. Samuel West, 11, Chandos-st., Cavendish-sq., London, W.

THE LANCET.

LONDON: SATURDAY, SEPTEMBER 19, 1914.

Protection of the Food Consumer.

AT the present juncture questions of economy in food consumption have become of more than ordinary importance, and the findings of the Select Committee of the House of Commons on "Short Weight" deserve attention. This Committee, of which Sir ARCHIBALD WILLIAMSON was chairman, reported in July on the steps to be taken to protect purchasers of goods sold in packages, and buyers of bread, from short weight or measure. In regard to packages they recognise that sale by gross weight, including the tin or wrapper, is often a matter of custom and convenience with which it is undesirable to interfere. But certain practices, such as the selling of tea in wrappers or containers of unnecessarily heavy weight, are clearly to the disadvantage of the purchaser. The Committee stigmatises such practices as reprehensible, and recommends that in the case of tea, coffee, and powdered cocoa it should be illegal to sell by retail by any other system than by net weight. In the case of other articles vendors selling by gross weight should be compelled so to inform the purchaser by prominent notice, and should bear the onus of proving that the weight of the wrapper, so included, is reasonable. Many people will be surprised that it should be necessary for the Committee to make the further recommendation that short weight or measure generally in the retail sale of goods should be made a statutory offence, and that the duty of enforcing the law should rest with local authorities administering the Weights and Measures Acts. At present, it would seem, the duties of these authorities cease when they have seen that the weights, measures, and scales themselves are up to standard. A measure may be accurate, but it may be wrongly or fraudulently used; moreover, its shape and the ordinary custom of the trade may often result in the consumer getting less than the nominal quantity. Milk measures, to which the Committee draws attention, are not free from this objection.

The Committee makes special recommendations for the sale of bread, which is at present governed by two Bread Acts, those of 1822 and 1836 respectively, which are in large measure obsolete. It is recommended that "fancy bread" should be defined and exempted from official requirements as to sale by weight, but that in the case of other bread sale by weight should be strictly enforced when it is sold over the counter, and that bread sold outside the shop should be sold either in parcels of 1 lb. and multiples of 1 lb. or in loaves the minimum guaranteed weight of which is stated orally or by notice to the purchaser on delivery. A new Bread Act incorporating the administrative measures which the Committee recommends for this purpose seems to be needed. But it is to be feared that the Committee has not realised the way in which its good intentions may be defeated by methods which give the consumer plenty of weight without equivalent food value. In 1911 Dr. J. M. HAMILL reported to the Local Government Board on the use of "improvers" in flour, a use which at that date was becoming common, and which is believed to have since considerably increased. These "improvers"—principally mineral phosphates—offer to the miller and baker the advantage of increased loaf production from a given quantity of flour. The gain in production is due to the increased amount of water which the flour absorbs and to the increase in the volume of the dough resulting from the improved elasticity of the gluten. The protein content of flour is an important matter from the standpoint of nutrition, and flour from "weak" wheats, which are generally poor in gluten, contains less protein than flour from "strong" wheats which are rich in gluten. By the use of improvers flour from weak wheats, although inferior as regards protein content, is made to simulate flour from stronger wheats. A new Bread Act, limited to questions of weight, and with no reference to these modern practices, would not afford much benefit to the consumer whom it is desired to protect.

We hope that the local authorities concerned will not at the present time relax any of their normal efforts for the prevention of adulteration of food or for controlling weights and measures, or for dealing with food which is unwholesome. We have every confidence in the food traders of the country as a whole. They will not take advantage of scarcity or high prices to make fraudulent substitutions of inferior articles for articles of better class, or to get rid of stock which could not be sold without risk to health. But they as well as the public will suffer if either the authorities entrusted with the protection of the food supply, or the magistrates, allow national exigencies to be made the excuse for disregarding any breaches of the food laws at the present time. It should, in conclusion, be noted that the Select Committee strongly supports the recommendation of various witnesses that power should be given to local authorities to institute proceedings under the Merchandise Marks Act to prevent the misdescription of foods.

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The King Edward VII. Welsh National Memorial Association.

THE campaign against tuberculosis in Wales is being carried out with commendable zeal by the King Edward VII. Welsh National Memorial Association, working in collaboration with the local authorities and the Insurance Committees. The second annual report of the association has just been published, and contains an interesting account of the work which has already been accomplished and an outline of other measures which are being organised to combat the disease. The history of the movement is in brief that a national conference was held at Shrewsbury in September, 1910, for the inauguration of a national campaign for the eradication of tuberculosis, as a Welsh National Memorial to King EDWARD VII. The charter of incorporation was granted by the King in Council on May 17th, 1912, and it expressly included the border county of Monmouth within the operations of the association. The first report was published just a year ago, giving details of the memorial scheme and of the work accomplished up to that time. In the present report the council of the Memorial Association refers, with natural gratification, to the fact that a national fund of over £200,000 has been raised, and that at the present time means of treatment have been organised so as to be within the reach of every tuberculous patient in the Principality. The country concerned, including Monmouthshire, has been divided into 14 dispensary districts or district sanatorium areas, each in charge of an officer called a tuberculosis physician, assisted by a tuberculosis nurse. In each area there is an institute or headquarters with a series of visiting stations. Local tuberculosis hospitals for cases under observation and for cases unsuitable for sanatorium treatment have also been provided. The association already possesses 87 such hospital beds, and has made arrangements with other authorities for the further 245, but it is proposed to provide institutions with 549 beds in addition to the 87 at present owned by the association, when the arrangements with other authorities may be terminated. Sanatoriums are also provided, and at the present time there are five sanatoriums under the control of the association, with a combined accommodation of 228 beds, while arrangements have been made so that 71 beds are available in other institutions, giving a total of 299 sanatorium beds now at the disposal of the association. Two new sanatoriums, one near Denbigh with 156 beds for adults and at least 30 for children, and one near Talgarth with 254 beds for adults and 50 for children, are in course of erection.

The medical staff of the association at present consists of 28 members—namely, an honorary consulting surgeon, a medical director, 12 tuberculosis physicians, 8 assistant tuberculosis physicians, 2 relief physicians, 1 locum tenens, and 3 medical superintendents of sanatoriums. There is also an education staff concerned with the dissemination of information in regard to the disease. The report of the medical committee of the association upon the year's activities gives a satisfactory record of useful work accomplished. The total number of persons examined by the tuberculosis physicians during the year ending March 31st, 1914, was 8763, of which 3230 were men, 2363 were women, 1612 were girls under 16, and 1558 were boys under the same age. The number of infected persons diagnosed during the year was 5212, or 60 per cent. of the total number seen. During the year 1484 contacts were examined, and of these 360 were diagnosed as being definitely tuberculous, or 24 per cent. of the cases examined. Of the 5212 cases diagnosed as the subjects of tuberculosis 4470 suffered from pulmonary forms of the disease, while 742 presented non-pulmonary localisations of their lesions, being 86 and 14 per cent. respectively. The recommendations made in regard to these cases fall under four heads—viz., domiciliary treatment, treatment at one of the association's institutes, hospital treatment, and sanatorium treatment. Only 11 per cent. of the total number of recommendations made were reference of the patient to a sanatorium, and the pressure of work fell chiefly upon the institutes and the hospitals. The medical committee believe that already they can see an improvement in the type of case coming to them, and they anticipate that an increasing percentage will be found suitable for hospital and sanatorium treatment.

One of the most important features of the campaign undertaken by the association is the organisation of educational agencies for disseminating knowledge in regard to the disease. It is under the control of a superintendent of education and chief medical lecturer, Dr. R. OWEN MORRIS. The educational work is conducted upon four main lines: suitable pamphlets and leaflets are sold and distributed broadcast, a travelling antituberculosis exhibition visits the more populous centres, lectures are given in schools, colleges, and public halls, and conferences of school teachers are held with the sanction of the education authorities. The medical committee in their report rightly lay special stress upon the importance of educating the people against the danger of promiscuous spitting and earnestly invite the county councils and county borough councils to exercise their powers for making and enforcing by-laws dealing with the offence of spitting in public places. Their recommendation is supported by some striking observations made, at the suggestion of the medical director, Dr. MARCUS PATERSON, by Dr. F. C. W. CLIFFORD, the tuberculosis physician for the Swansea district area. He examined the sputum on the Swansea footpaths, and found that of 162 specimens from the streets tubercle bacilli were present in 116, of 144 collected in the Swansea parks they were present in 68, while of 42 specimens examined from the football grounds 20 contained the bacilli. Of a total of 348 specimens examined no less than 204 were found to contain tubercle bacilli. The medical committee of the association are also devoting special attention to the teeth of patients coming under their notice and are endeavouring to combat public ignorance on food values, therapeutic routine, and so on, by the circulation of pamphlets. Dr. PATERSON and his collaborators may well be proud of what they have done.

Annotations.

"Ne quid nimis."

THE GERMAN STOMACH.

"German flour, German fruit, and German beer can alone give your body the true German energy." This is one of the dietetic Ten Commandments of Germany, and the precept is necessary, as the Teuton, whether as an invader or a mere holiday tripper, is always pathetically anxious to eat French food and drink French wine. A cuisine more ancient and civilised than his own is strangely attractive to him, just as it was to the hordes that sapped the energies of Rome from the time of Arminius to the fall of the final darkness in the fifth century. From "La Guerre en Alsace," a work of Tacitean brevity and restraint, based on archives and documents, by A. Schnéegans, at one time *député* of the Bas Rhin, we quote the following delicious account of German feasts at the time of the fall of Strasburg on Sept. 27th, 1870: "On 28th September General von Mertens, making his entry into a town that he had burnt and famished, amid a population of which 10,000 individuals had been reduced to the most horrible want, caused to be served to him a dinner of ten covers, at 20 francs a head, during which he and his noble guests drank six bottles of Chambertin, six of Saint Julien, three of Moselle, ten of Roederer's champagne, and three flasks of liqueur." This was a fair beginning, and led to no ill consequences—the wine was probably excellent. On the 29th the General, still in the same hotel, ordered 12 bottles of Riesling, 12 of Saint Julien, six of Roederer, and 12 francs' worth of coffee and liqueurs. Between Sept. 28th and 30th his table expenses, which the city defrayed, amounted to 628 francs. These notes exist in the archives of the city of Strasburg, and passed through the hands of Schnéegans and the Maire, Dr. Küss, who as a medical man must have been edified and interested. Dr. Küss, by-the-by, pulled his city through one of the longest and most horrible bombardments of history, and died in the arms of Schnéegans at the very moment that it was ceded to the German Empire. Schnéegans, who prints for posterity, devotes several pages to an examination of other similar gustatory documents, but though he sets out enormous lists of repasts he omits, alas! to state the number on each occasion of the diners. Count Bismarck-Bohlen, for instance, arrived in Strasburg on Oct. 8th, 1870, and between that date and the 15th the "put-up" of himself and suite cost the municipality 5673 francs. His suite, however, may have been a large one. Von Mertens and his staff spent a similar sum between Sept. 28th and Oct. 17th, but here, again, the staff may have been numerous. Putting the staff in each case at ten persons we get an average per head for one week of about 560 francs, a large sum in view of the fact that the Germans forced tradespeople to accept payments on a peace footing for all eatables and drinkables. The most luxurious put-up at the best continental hotel in those days—the late "sixties"—could not have cost much more than 300 francs per person during one week.

WAS THE NERONIAN BURNING OF ROME A SANITARY MEASURE?

THIS, one of *quaestiones vexatae* of history, has received a definitive answer from Professor Huelsen, who is a most accomplished Roman archæologist. In an elaborate paper contributed to the *Bollettino dell' Associazione Archeologico* he reviews the whole question, beginning with the solution of it attempted by Signor Carlo Pascal, according to whom the "early Christians, obsessed by the wickedness of paganism, set fire, *proprio motu*, to its Imperial seat by way of anticipating the Day of Judgment and the retributive punishment of Hell." This he has no difficulty in disposing of, as inconsistent with well-authenticated facts, and he next examines, with equal thoroughness, the theory of Signor Attilio Profumo, who fills a bulky quarto with attempted proof of the hygienic inspiration of the "incendio"—crediting Nero with "the laudable, if somewhat drastic, design of transforming the lurid old Republican city into a beautiful and healthy capital," and committing the crime of arson accordingly. This, in turn, he shows with equal cogency to be untenable, and finally he deals with the most plausible explanation of all—that of M. Bouché-Leclercq, who in his recent "L'Intolérance Religieuse et la Politique" contends that "while the fire broke out by accident its diffusion was favoured and fed by the Christians, on the one hand, and by the Emperor Nero on the other, contemporaneously, and for special reasons of their own." There is something more than plausibility in this contention, and in his criticism of it Professor Huelsen makes much of the fact, which he deduces from astronomical calculation, that the night of the fire, between July 18th and 19th, 1850 years ago, was one of full moon, when in the clear atmosphere of Italy the lunar radiance renders objects almost as visible as at noontide, and when the Romans of that day (as of this) were accustomed to keep awake and out of doors, enamoured of the freshness, the stillness, and the cool—all of these conditions contra-indicating the operations of the deliberate incendiary. Agreeing with M. Bouché-Leclercq that the fire burst forth by accident, he points out that there were circumstances at the time affecting Nero on the one hand and the Christians on the other which confirm the mythopœic tendency to find in such visitations a personal motive and a personal authorship. The Christians of the first century A.D. were familiar with a series of books, prophetic and apocalyptic, which described in glowing detail the final conflagration (ἐκπύρωσις) of the world, and so quite naturally they saw in the widely diffused flames the retributive vengeance of the Almighty, and piously coöperated with Him in extending it to the heathen shrines and temples they loathed. So much for the Christians. As to Nero, when the fire had run its course he, *more suo*, sought to appease the wrath of the manifestly irate gods by the prescribed sacrificial feasts—ceremonies in which he bore the histrionic part so congenial to him. Hence the legend of his fiddling or performing on the lyre during the conflagration—a legend which the mythopœic tendency aforesaid seeks to strengthen by fixing on the very tower which witnessed his display—a tower which Professor Huelsen has no trouble in showing to be a purely mediæval structure. The abstention of the Christians from the sacrificial feasts in question no doubt confirmed the suspicion or report that theirs was in the first instance the igniting hand, and hence the popular, if pagan, belief that the fire was all their doing. And so passes to the limbo of exploded fiction one of its most venerable survivals, thanks to the research and to the reasoning of a distinguished member of the Istituto Archeologico of Rome.

VON PIRQUET'S REACTION WITH HUMAN AND WITH BOVINE TUBERCULIN.

Cornelia de Lange has recently[1] reviewed the literature of this subject, and adds her own observations upon it. Like previous writers, she finds that it is impossible, by the use of these two varieties of tuberculin, to tell whether a patient is infected by tubercle bacilli of the human or of the bovine type. This fact may be explained, as Bertarelli suggested, by the assumption that the infection with tubercle bacilli of the bovine type may have been picked up from a human being, and not directly acquired from a bovine source, with the result that the infection is an infection with bacilli of the bovine type that have acquired some of the characteristics of tubercle bacilli of the human type. An alternative explanation is that infection with both varieties of bacilli together has taken place even in those cases in which infection with bacilli of the bovine type is the most probable—that is to say, in infants and children. De Lange has obtained von Pirquet's reaction in 150 patients in the Emma Hospital for Children at Amsterdam; in each case both Koch's old tuberculin and a Perlsucht old tuberculin were employed simultaneously. She classifies her results as follows, dividing up the patients into five groups in accordance with their reactions to these two tuberculins. Group I. contained 15 children who gave a positive reaction to human tuberculin only; three of them had tuberculous peritonitis, it may be noted. Group II. consisted of nine patients reacting to bovine or Perlsucht tuberculin only; two had pulmonary tuberculosis. The 126 children in the remaining three groups reacted to both varieties of tuberculin. Group III. contained 36 cases in which the reactions to the two tuberculins were equal; in Group IV. 42 patients reacted more strongly to human than to bovine tuberculin; and in Group V. were 48 instances in which the reaction to bovine tuberculin was the more intense. Family histories of tuberculosis were obtained in 5 of the cases in the first group, in 5 of the second, in 10 of the third, in 19 of the fourth, and in 18 of the fifth group. In one instance the mother of three children had died from phthisis; two of the children were in Group IV., the third was in Group V., yet presumably all were infected from the same source—namely, the mother. De Lange also quotes examples to show that the same patient may react differently to the two tuberculins at different times. The practical conclusion to which she comes is this: that Perlsucht tuberculin should be used as well as tuberculin derived from bacilli of the human type in testing for von Pirquet's reaction. She also adds a word of warning as to the undue frequency with which pulmonary tuberculosis is diagnosed in children. In Holland, as in other countries, there is a great tendency to label as phthisical all children with any impairment of resonance at the apices of the lungs. De Lange finds that many of these give a negative von Pirquet's reaction, and she believes that what they are suffering from is a chronic pneumococcal and not a tuberculous infection. It is to these non-tuberculous cases that she attributes the high percentage of recoveries or cures reported by open-air schools for the treatment of consumption in children.

ULCERATION OF THE PHARYNX IN TYPHOID FEVER.

In a certain number of cases of typhoid fever —variously estimated at from 6 to 12 per cent.— one or more small superficial ulcers occur in the pharynx, usually upon the anterior pillars of the fauces. Though they are so characteristic as to have diagnostic value, and have been carefully described by French clinicians for more than half a century, they have not received much attention in English or American text-books, which little more than mention the possibility of pharyngeal ulceration. This was known to the older writers—Louis, Chomel, Murchison, and Jenner—but the characters of the ulcers were first accurately described in 1843 by Nonat, who wrote: "Les ulcérations dont il s'agit affectent ordinairement l'un des piliers du voile du palais; elles sont ovulaires; leur étendue varie; il en est qui ont la grandeur d'une pièce de vingt-cinq centimes; d'autres sont un peu plus petites; leur bords sont taillés à pic; leur fond est grisâtre; la membrane muqueuse qui les entoure est injectée, rouge sur une surface plus ou moins grande." In the *Boston Medical and Surgical Journal* of July 23rd Dr. N. B. Potter, assistant professor of clinical medicine, Columbia University, has reported six cases of the condition and exhaustively reviewed its literature. After Nonat's description he can find no mention of the ulcers until they were again described by another Frenchman, Bouveret. He does not refer to Nonat's communication, and—alas, for fame!—the ulcers have been named after him. In 1883 they were ably portrayed at the Société Médicale des Hôpitaux of Paris by Duguet, after whom they have also been named. A practical aspect of the subject is the fact that the ulcers are liable to be regarded as syphilitic. Dr. Potter fell into this mistake in his first case. The patient was a woman, aged 27 years, who, although still at work, had for some days been suffering from malaise, headache, and sore-throat. There were slight pyrexia, a coated tongue, and a superficial yellowish-grey ulcer of the size of a small bean at the upper third of the left anterior pillar of the fauces. It was surrounded by a narrow zone of reddened mucous membrane, and the lymphatic glands at the angle of the jaw were a little enlarged and tender. A culture upon blood serum showed the staphylococcus aureus. In a few days a palpable spleen, rose spots, and a positive Widal reaction settled the diagnosis. Within ten days from its first observation the ulcer healed without leaving a visible scar. In the second case secondary syphilitic ulceration of the throat was diagnosed by several practitioners before the patient was admitted into hospital. In the third case a tentative diagnosis of diphtheria was made. In the fourth case a man, aged 27 years, was admitted into hospital with a temperature of 103° F., complaining of sore-throat and headache. There was a maculo-papular eruption suggesting secondary syphilis. The tongue was moist and showed a yellowish coating and three ulcers, varying in diameter from 0·5 to 1·5 cm. The smallest was beneath the tip, the largest on the left side an inch from the tip, opposite a jagged tooth, and the third half way between this and the tip. There were three similar ulcers on the anterior pillars of the fauces. The Widal reaction passed from negative to positive three days before death, which took place a week after admission. In only two out of the six cases were the cervical glands enlarged and tender. As to the pathology of these ulcers, French writers at first claimed that the lymphatic tissue of the pharyngeal ring was involved, but they presented no anatomical evidence, and Landgraf showed that the same type of ulcer occurred where there are no lymphoid follicles (lips and epiglottis). In only a small minority of cases have typhoid bacilli been found in the ulcers, which appear due to a superficial nutritional disturbance produced by dryness of the mouth followed by a staphylococcic or streptococcic infection. The ulcers appear sufficiently early to be of some value in the diagnosis of typhoid fever, although an apparently similar condition has been described in four cases of tuberculosis.

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[1] Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam, 1914, 438.

ANAPHYLAXIS AND STATUS LYMPHATICUS.

As a result of observations made on cases of fulminant infection in children, some account of which has already appeared in our columns,[1] Dr. Charles McNeil[2] has been led to formulate some interesting suggestions as to the possible explanation of such occurrences as instances of anaphylaxis. The typical conditions found post mortem in animals dead of anaphylactic shock are vascular congestion, œdema, spasm of some of the non-striated muscles, and destruction of delicate epithelia. In cases of fulminant pneumonia these conditions are well marked, the lungs showing the condition in an extreme form, with intense engorgement of vessels, constriction of the bronchial muscles, inter-alveolar œdema, and destruction of alveolar epithelium. There are also cyanosis of the skin and congestion of the renal vessels. Now these cases of fulminant infection generally exhibit the hyperplasia of the lymphatic system and thymus which characterises the status lymphaticus, the thyroid gland also showing enlargement. Dr. McNeil suggests that this morbid condition is brought about by some chronic intoxication, possibly by some foreign protein, either bacterial or other, circulating in the system, and that this intoxication is responsible for the hypersensibility of the tissues which is revealed in the production of anaphylactic shock as the result of some slight stimulus; in other words, the lymphatic diathesis is a condition of hypersensibility. The sudden death which occurs in these subjects is anaphylactic in origin. It must be admitted that these views are speculative and that the evidence on which they are founded does not amount to proof, but the whole subject of anaphylaxis is comparatively new and is involved in considerable obscurity. In favour of the hypothesis we must recognise that the lymphatic enlargement is very suggestive of a chronic infection or intoxication, while the thyroid gland is said to be enlarged in measles, diphtheria, and other infections of childhood. The hyperplasia of the thymus is not so clearly explicable, as its lymphoid character is not quite certain, although its function as a gland with an internal secretion is equally problematical. A difficulty further seems to exist in the fact that anaphylaxis is to a great extent specific, the same antigen which originally produced hypersensibility being necessary for the subsequent development of anaphylactic shock, so that it would be reasonable to expect that the same organism which causes the pneumonia must have been guilty of the production of the lymphatic diathesis—a mode of causation which is supported by no evidence. Still, we cannot be sure that such specific relationship is indispensable in all instances, and Dr. McNeil's speculations are of considerable interest as suggesting new connexions between the obscure phenomena of anaphylaxis and important clinical conditions of disease.

WE regret to learn of the death on Tuesday last, at the Tower House, Cudham, Kent, of Sir Henry Greenway Howse, consulting surgeon to Guy's Hospital, late President of the Royal College of Surgeons of England, in his 73rd year.

OPEN-AIR HOSPITALS IN WAR TIME

BY ROBERT SAUNDBY, M.D. EDIN., F.R.C.P. LOND.,
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BUILDING committees have been in the past anxious to erect a structure which, as they say, should be worthy of the city in which it is placed, and give those who subscribe to its cost something to look at and be proud of. Such sentiments have to my knowledge greatly influenced the builders of hospitals and have been put forward as the justification for a good deal of not strictly necessary ornament. During the last 20 years we have been learning the lesson slowly, but it is sinking in deeply, and already is thoroughly accepted by the leaders of the profession, both sanitarians and practitioners, that the usefulness of hospitals is almost in inverse proportion to their architectural merits and that our exaggerated notion of "comfort" is inconsistent with healthy surroundings. Draughts of air, low atmospheric temperature, and dampness are not the disease-bearing agencies they were once supposed to be, while bad ventilation and equable warm temperatures are depressing, debilitating, and retard recovery. Even dampness does no harm where there is a good current of air.

Experience in Hospital Ventilation at Birmingham.

With the elaborate artificial system of ventilation introduced into the Birmingham General Hospital it was possible to maintain the wards and corridors at practically the same temperature day and night, and this was fixed at 60° F. as the recognised sick room figure, but it was soon found that its very equability was a disadvantage, that those who had to work in these temperatures felt weakened, and within a few months after the building was opened for use the temperature of the corridors and that of wards at night was reduced to 55°, the former figure of 60° being retained for the wards by day. By degrees complaints were heard not from those who had to work in these temperatures or on their own account, but by and on behalf of the patients, especially the surgical patients, and above all the children: complaints of delayed convalescence, of debility, and of retarded healing of wounds, results which would have been more seriously felt and less easily borne if it were not the case that the hospital has in the Jaffray Branch a suburban dependency to which stationary cases can be transferred, thus relieving the beds of the parent institution. In spite of these advantages the complaints did not diminish and the need for fresh air was urgently felt. By many members of the staff the elaborate system of ventilation was regarded as worse than a failure, but as it provided the only means of heating the building it was endured and other means of remedying the evil were sought. Fortunately the architects had provided balconies, more for ornament than for utility, at the free ends of the wards, and to these balconies, enlarged in some cases by structural alterations, the patients are removed, being accommodated in long wicker chairs, but even so only a proportion of the patients can benefit by this treatment. A proposal to build large verandahs to each of the wards of the Jaffray Branch, to which access should be given by windows opening down to the ground, was, although supported by the medical staff, rejected by the committee on the grounds of structural difficulties and expense, and this highly desirable alteration still remains to be made.

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[1] THE LANCET, March 15th, 1913, p. 770.
[2] Edinburgh Medical Journal, July and August, 1914.

It was at the Queen's Hospital that the first attempt was made, although only on a small scale, to treat ordinary hospital patients in an open-air ward. The ward is on the roof of the hospital and is about half covered in, but quite open to the south. It certainly did not look "comfortable," and seemed open to the objection of getting all the smoke as well as the rain and snow. After it had been in use for some time I visited it with the late Professor Foxwell, who had suggested its creation, and what surprised me most was that patients and nurses seemed to like it, and my fears that it would be regarded as "uncomfortable" received no kind of encouragement from those to whom I spoke. Moreover, I found that they were not surgical cases only, but in fact were chiefly medical; and in particular I was shown a case of pneumonia which was doing very well. I climbed down from that visit to the roof converted, not to the advantages of open-air treatment only, for of that I had been long convinced, but of the practicability of carrying it out even in the middle of a smoky city like Birmingham.

The Open-air Treatment of Disease.

During the meeting of the British Medical Association in Liverpool in 1911 I had the pleasure of visiting the Country Hospital for Children, where in a large ward quite open to the estuary of the Dee I found something like 150 children of ages from 2 to 10 or thereabouts. Their cots were placed close together and in three rows parallel with the long axis of the ward and to the open side. Here there was no question of floor space or cubic feet of air. They were in the fresh air, exposed to all the sun that shone on that shore and to all the wind and weather that might befall. These children from the slums of Liverpool were suffering from all sorts of diseases, medical and surgical, and were under the care of Dr. Macalister and Mr. Robert Jones. They were presumably ill, but they did not look it. They had rosy cheeks for the most part, and their appearance testified most strikingly to the vivifying effect of open air. They were as unlike the ordinary inmates of a children's hospital ward as it is possible to imagine.

Why have we been so slow to recognise that fresh air is the best tonic, the best antiseptic? It is cheaper, pleasanter, and undoubtedly more efficient than drugs. The successful treatment of tuberculosis in the open air led the way to the wider adoption of this method for other diseases. It was his observation of the results achieved by Dr. Huggard at Davos, whose advocacy of fresh air and courage and success in inducing his patients to discard their prejudices in favour of "warmth and comfort" were so remarkable, that inspired Dr. Foxwell with the wish to give the same plan a trial in the treatment of ordinary diseases at the Queen's Hospital. Yet the open-air treatment of consumption has been carried out for only some 25 years, although its value had been demonstrated by Mr. George Bodington, of Sutton Coldfield, and explained by him in his little book on the Treatment of Pulmonary Consumption, published in 1840. Half a century had to pass away before the plan was revived, and this was not the direct result of Mr. Bodington's teaching, nor, we must regret to feel, was it due to the efforts or clear-sightedness of his own countrymen. The Warwickshire surgeon might know the truth, but his little lamp soon flickered out, and his contribution to the knowledge of his profession was forgotten, although when its value was proved by the work of Walther of Nordrach and others it received the belated honour of being included in the 173rd volume of the New Sydenham Society's reprinted monographs (1901).

The experience of the American Civil War was all in favour of improvised hospitals or tents. but it preceded the enormous advance in surgical treatment due to Listerism, so that surgeons look back on those days with a shudder at results which were so poor even where there was abundance of fresh air and sunlight, owing to the existing ignorance of the causes of wound infection. Yet those who took part in the medical and surgical work of the war had no doubt, and in the report of Surgeon-General Billings in Circular 4 of the Medical and Surgical History of the War he says, speaking of hospital construction, "*The object to be kept in view is to furnish shelter without diminishing that supply of pure air and light which is necessary to health*"; other points, such as locality, exposure, plan of construction, modes of heating and ventilation, are only of importance in so far as they secure that object. Wiser words were never written, but it is doubtful whether their meaning and importance have been fully appreciated or allowed due weight when the question of hospital construction has arisen. We have learnt that life in the open air is not only possible but pleasant, that cold air is a tonic as George Bodington maintained, that warm rooms are debilitating, while a current of air that enters from ventilators or partly opened windows and other narrow openings causes draughts which when they impinge upon the inmates give rise to discomfort and complaint, too often resulting in their being stopped up.

Suggestions as to Hospital Provision.

It is to be hoped that these principles may be borne in mind in the course of the arrangements that are being made, and will have to be made, in the provision for the sick and wounded during the present war. It is quite probable that the accommodation already made will prove insufficient and that large additional space will be needed. In the American civil war and in the Franco-Prussian war the suitability of wooden buildings was abundantly proved, and with our increased knowledge and confidence in the advantage of simple structures it is to be hoped that no more money will be spent upon structural alterations for hospital use, but that simple erections will be made for which there are many good designs to be seen in the more recently erected sanatoriums for the treatment of consumption, none being better than that recently opened at Little Bromwich outside Birmingham. Even these in many respects may be simplified in accordance with the temporary use to which they will be put.

Open wards dispense with all need for considering methods of heating and ventilation; windows and doors are not required, but it may be desirable in some places to have sliding wooden screens to afford a certain amount of protection in stormy weather. Flooring may be made of asphalt or simply beaten earth, covered with a thick layer of pine sawdust which can be renewed easily with a shovel, and which absorbs all damp to an extraordinary extent. The late Professor George Vivian Poore demonstrated the great value of pine sawdust as an antiseptic absorbent and its special value for taking up and deodorising such liquids as urine. He was asked by the South Western Railway to suggest a simple form of urinal for the use of the men engaged in their works at Basingstoke, and he proposed the provision of a simple trough made by two planks put at an angle, filled with pine sawdust; when he was asked how often the sawdust would have to be renewed he said, "Practically never." He was in the habit of showing his friends a flannel jelly-bag half full of sawdust which he and his assistant had used in his room at University College for six months at the time I saw it as a urinal, the effluent from which in the whole of that time amounted to something less than a pint of a pale fluid which smelt only of turpentine. If these hospitals are put up as is proposed in the grounds attached to buildings, or in unoccupied land in their neighbourhood, there ought to be no difficulty about the disposal of fæces, which should be superficially buried in shallow trenches. Soiled dressings should be burnt, and a proper furnace connected with the sterilising apparatus would be a necessary adjunct to the hospital.

The University buildings at Bournebrook, Birmingham, have been transformed at very considerable expense into a hospital of 600 beds, but it is likely that many more will be needed. There is plenty of room there for the erection of such an annexe as I have in mind, and there would be no difficulty in Birmingham in forming a committee to provide the money and equipment and to superintend the provision of all that is needed for such an extension. It is to be hoped that the medical press will support this plan and exert its influence to prevent the unnecessary expenditure of public funds in the costly transformation of originally unsuitable buildings. The campaign in favour of fresh air and sunlight is also that of efficiency and economy, and where, as has been pointed out by high authority, money may in the end be the decisive factor in this great struggle there can be no justification for wasting it, especially when better results may be obtained by cheaper methods.

CENTENARIANS.—Mrs. Jane Welsford, of Mount Pleasant-road, Newton Abbot, celebrated the 100th anniversary of her birthday on August 21st.—Mrs. Eliza Ann Church, of Sittingbourne, died on Sept. 15th, having passed her hundredth year.

ANNUAL REPORT FOR 1912 OF THE REGISTRAR-GENERAL.

II.[1]

A LARGE share of Dr. T. H. C. Stevenson's contribution to this report has reference to those diseases which as causes of death are especially important to the practical sanitarian. Prominent among these are the common infectious maladies, regarding several of which medical knowledge is steadily being improved under the instrumentality of the Notification Act. Since the year 1910 the Local Government Board has published periodical returns of the cases of infectious disease notified in this country, and in the present report the prevalence as well as the case fatality of these diseases is shown for the urban and rural parts of each administrative area of England and Wales. When a sufficiency of these returns shall have been collated and properly analysed a store of preventive information, far more trustworthy than a study of death-rates alone can supply, will be accessible to our sanitary authorities.

Enteric Fever.

The loss of life in England and Wales from this disease was less in 1912 than in any previous year, the deaths corresponding to a rate of not more than 44 per million living. Up to the year 1904 the annual victims to enteric fever had never been fewer than 100 per million living, from which it will appear how rapid has been the progress towards its extinction that has been effected in the last few years. Although the prevalence of this disease is believed to be largely dependent on urban conditions of life, it is noteworthy that the mortality of the smaller towns is higher than that of the larger, both in the north of England and in Wales, whilst in the south it is higher than in London. The true explanation for this probably lies in the greater sanitary progress achieved in the larger towns. The fact that the incidence of the disease was lighter in the metropolis than in the rural districts indicates how powerfully the ill-effects of population density can be counteracted by sound administration. The increasing degree in which hospital isolation is resorted to in the present day must conduce to the suppression of this disease by limiting the channels of infection. In London 73 per cent. of the enteric fever deaths took place in public institutions, and in the county boroughs 65 per cent. The percentages, however, fell to 46 in the smaller towns and 44 in the rural districts. From the sickness returns now published by the Local Government Board we learn that although the cases notified in 1912 were less numerous than in the previous year, their fatality was higher, having risen from 176 to 194 deaths in each 1000 reported cases.

Scarlet Fever.

The death-toll levied by this disease has been rapidly diminishing in recent times. The mortality in 1912 was at the rate of 54 per million living at all ages and of 166 per million at ages under 15 years, these rates being respectively higher by 2 and 7 per million than had been those of the previous year, which were the lowest on record. Until 1906 the loss of life from scarlet fever had never been less than double that of 1911. Examination of the death-rate alone would encourage the hope that this disease was rapidly tending to disappear; but the notification returns indicate that it is still widely prevalent. The diminished mortality corresponds to an exceptional mildness of type of disease, which contrasts sharply with the experience of a generation or two ago. Taking the term "fatality" as expressing the ratio of deaths to cases occurring, the report shows that in the last two years scarlet fever fatality has averaged from 18 to 19 per 1000. In the absence of corresponding returns comparison cannot be carried back to dates earlier than 1911. But the fact that 94 per cent. of the London deaths occurred in hospitals or nursing homes suggests comparison with the past experience of the fever hospitals of the Metropolitan Asylums Board. In 1912 the fatality among the cases treated in the Board's hospitals was 1·6 per cent., against 1·5 per cent. for London cases as a whole, the difference being probably due to errors in notification. Comparing the recent with-the past experience of the Board, it appears that the percentage fatality has gradually fallen from 13·1 in the quinquennium 1876–80 to 2·7 in 1906–10. The type of disease prevalent in London during 1912 was therefore notably milder than the average. Locally the fatality in the last two years has varied considerably, being highest in the large towns and lowest in the rural districts in almost all parts of England. It was also much higher in the north than in the south. In the more recent years the rates varied from 26 per 1000 in the northern county boroughs to 9 per 1000 in the southern rural areas. Whether this excess of urban fatality in the north was exclusively due to greater severity of type can only be determined in the light of future experience. In view of the fact that in each of the last two years not less than 65 per cent. of all the scarlet fever cases reported were removed to hospital, it would appear that in most cases isolation is still being adequately resorted to for the prevention of this disease. In London the proportion of cases isolated amounted to 94 per cent., but it fell in the county boroughs to 78, in the urban districts to 51, and in the rural districts to 40 per cent.

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[1] No. I. was published in THE LANCET of Sept. 12th, 1914, p. 707.

Diphtheria and Croup.

The deaths referred to these causes in the year under notice were in the proportion of 118 per million living at all ages and of 372 per million at ages under 15 years, the latter rate being the standard preferably adopted in the case of diphtheria and scarlet fever, which diseases are exceptionally destructive in the earlier years of life. These mortalities are the lowest recorded since 1855, when diphtheria was first officially distinguished from scarlet fever. For several years following that date the scarlet fever deaths greatly exceeded in number the deaths from diphtheria and croup, whereas in recent years the order has been reversed. The diphtheritic mortality of 1912 did not greatly vary in different parts of the country; it was lowest in the Midlands and highest in the north of England. It was generally higher in the county boroughs than elsewhere, and, except in Wales, higher in the smaller towns than in the rural areas. If the notification returns are trustworthy the disease was least prevalent in the north; nevertheless, its lower apparent prevalence there as compared with the south is more than counterbalanced by a much greater case fatality which caused the higher mortality above indicated. These differences are susceptible of various explanations, some of which are discussed in the text. Diphtheria fatality ranged from 93 per 1000 attacks in the rural districts to 109 per 1000 in the county boroughs; it also ranged from 76 in the south of England to 125 in the north. Compared with the rates prevailing before the introduction (about 1904) of the antitoxin treatment of diphtheria, the fatality of recent years has been remarkably low. During the four years 1890–93 the hospitals of the Metropolitan Asylums Board experienced a fatality of 304 deaths per 1000 admissions, as against 68 only in the year 1912. Danger to life from an attack by diphtheria depends very largely on the age of the patient, for the fatality decreases rapidly with increase of age. The experience of these hospitals shows that the fatality fell from 404 per 1000 admissions at ages under one year to 41 per 1000 at ages 10–15 years. Of the total deaths from this disease in England and Wales, nearly half occurred in hospitals. In London the proportion was as high as 88 per cent. In other parts of England the percentage was much smaller, and did not exceed 27 in the rural districts. It is satisfactory to learn that the indefinite terms "membranous laryngitis" and "croup" are now falling into disuse; only two of the nine deaths from the first-named condition and none of the 40 deaths from the last-named having been returned from public institutions.

Tuberculosis.

Notwithstanding the gratifying reduction which this country has recently experienced in the loss of life from tuberculosis, the fact still remains that at least one-tenth part of the mortality from all causes is due to this disease. In the year under notice the deaths thus registered exceeded 50,000 in number, and were in the proportion of 1366 per million living. This rate is below that of any previous year, whilst as compared with the average in the quinquennium 1906–10 it shows a reduction of 13 per cent. These figures do not indicate any slackening in the fall of tuberculous mortality, which has been maintained for more than a generation. The age and sex incidence of tuberculous mortality are now for the first time tabulated for each of the great groups of administrative areas of England and Wales. Urban conditions of life appear to increase the liability to death by tuberculosis, but to a much greater degree for males than for females. As in former years, tuberculous mortality in 1912 varied with urbanisation from a maximum in London to a minimum in the rural districts. The excess of mortality in London over that in the country was 97 per cent. for males, but only 22 per cent. for females. Mortality in town and country varies similarly according to sex, whether tuberculosis in general or phthisis in particular is considered. It is noteworthy that the female rate was higher in the county boroughs than in London—a circumstance which probably depends on a factitious lowering of the mortality recorded for young women in London, due to deaths in their country homes of workers enumerated in the metropolis and infected there with tubercle.

Pulmonary Tuberculosis.

Tuberculosis of the lung, or phthisis, accounts for 76 per cent. of the total deaths from tuberculosis and for a mortality equal to 1039 per million of the population. Of the deaths thus classified, more than 21,000 were certified as from pulmonary tuberculosis, whilst nearly 13,000 were indefinitely returned as from "phthisis," without mention as to its tuberculous nature. Only 23 deaths were assigned to "consumption," a term which is now seldom employed in medical certification. Not a single death was referred to "decline," another misleading term which at one time was a frequent entry in the registers. Interesting details of the forms of tuberculous disease, as well as of the complications observed, are given in the report. New tables are also added supplying information as to age at death and place of its occurrence. They afford means of comparing medical certification as carried out in public hospitals and in private practice respectively. Thus, among the deaths from chronic phthisis occurring in public institutions the tuberculous nature of the disease was affirmed in almost three-fourths of the fatal cases, whereas the corresponding proportion in private practice was only 58 per cent. The bulk of the institution deaths occurred in Poor-law establishments, where the proportion of cases definitely certified was rather less than in hospitals. It is noteworthy that, except in the case of infants, more deaths are returned from Poor-law than from other institutions. The hospital deaths are those of young persons, the Poor-law deaths those of the elderly. In Poor-law establishments, as age advances, the deaths of males outnumber those of females in steadily increasing proportions, until at ages 55–65 they constitute over four-fifths of the whole. For this Dr. Stevenson suggests as a possible explanation that the crisis involved in a working-class family by disablement of the breadwinner leaves no alternative but the workhouse; whereas if the wife or mother were the patient she could be kept at home. Whatever be the cause of the difference the above information is interesting as indicating the type of patient for whom accommodation in institutions is required.

Syphilis.

For the purposes of the recent Royal Commission on Venereal Diseases a special study of the mortality records of 1911–12 concerning this disease was undertaken by the General Register Office. In his interesting comments on the prevalence of syphilitic diseases in this country Dr. Stevenson remarks that the deaths tabulated from the registers as due to syphilis afford no measure of the mortality properly ascribable thereto. This is inevitable under the present system by which the causes of death are certified, an open certificate being handed to the relatives of the deceased person and being subsequently included in a register open to public inspection on payment of a trifling fee. The practitioner is strongly tempted in many cases to avoid mention in the certificate of the nature of the disease causing death. Considerations of this sort obviously apply far less to public than to private practice. Consequently the proportion of deaths returned as syphilitic from institutions is found to be far higher than that returned by private medical attendants. Dr. Stevenson has devoted to this subject a large portion of his report, showing by elaborate tables the diseases believed to depend on syphilitic infection, and giving the distribution of the disease among the several social classes of the population.

THE WEATHER OF AUGUST.

THE weather of the chief holiday and harvest month was, considered as a whole, very fine. The first week, however, was far from propitious, rain being frequent, sunshine rare, and the temperature some degrees below the normal. The subsequent improvement was general and striking. Bright, sunny days became the rule instead of the exception, and the thermometer, while it refrained from rising to an unduly high level during the day, and generally descended to a refreshing figure at night, recorded a mean warmth between 2° and 4° above the average. Another good feature of the weather was the absence of severe thunderstorms. Isolated storms occurred during the first six days, and a more general outburst on the 14th and again on the 21st, and others were experienced here and there on the 24th, but in very few spots was there any material damage by rain deluges or lightning. A quite exceptional downpour of rain, however, occurred at Guernsey during a thunderstorm on the 14th. The tremendous quantity of 1·5 in. fell in 15 minutes, which is at the extraordinary rate of 12 ft. in 24 hours. The chief wind current during the first week or so was from south and south-west, accounting for the cool, unsettled weather, and winds from a similar point of the compass were prevalent for a time after the 20th, but there were many days with light airs from various quarters. The dry spell which proved so valuable to farmers was unbroken over the greater part of the country from the 9th or 10th until the 20th or later.

The south-eastern corner of England was, as is more often than not the case, the warmest part of the kingdom. At Kew the mean maximum temperature was as high as 73°, nearly 3½° above the average, and the mean minimum no lower than 57½°, or 4° above the average. The same mean maximum was recorded at Tunbridge Wells, but there the nights were cooler, the mean minimum temperature being 52½°. At the resorts along the south coast and also at Leamington Spa the mean maximum temperature was about 70°, and the mean minimum, except at Leamington, a trifle higher than at Kew. At the inland Spa the corresponding value was within a small fraction of that at Tunbridge Wells. Harrogate was a little cooler both during the day and night, the mean day maximum being 68° and the mean minimum 51°, while Buxton was cooler still, the corresponding figures being 66° and 50°. The extreme south-west coast of England enjoyed its usual equability. As a rule the mean maximum temperature was 68° or 69° and the mean minimum about 11° lower, while the hottest day of the month, about 74°, was several degrees cooler than London and the south-east of England generally. The warmest weather occurred during the dry spell after the 9th, but the highest temperature of all did not occur in the south-eastern counties. It was registered in North Wales and Anglesey, where the shaded thermometer ascended to 85° or 86°. The number of days with rain varied from 9 or 10 in the south and south-east of England to 13 or 14 in the west and north, but nearly everywhere the total quantity was much less than the normal. The south-eastern counties were the driest, especially Kent and Sussex. At Tunbridge Wells and Eastbourne there was only about 0·8 in., against an average of about 2·3 in., while Brighton and Hastings both had less than an inch. Further north and west the amount was larger. At Kew it was 1·2 in., or 1·1 in. less than the average, at Birmingham 2·1 in., and at Buxton 4·6 in. Tenby was among the most rainy spots in the west, with a total of 4·4 in., but this was an inch less than at Swansea. At Newquay and Torquay, on the other hand, the respective values were only 1·7 in. and 2·4 in., both figures being considerably below the normal. The coast of North Wales and the coast of Lancashire were also dry; at Llandudno the total rainfall was only 1·3 in., against an average of 3·0 in. Owing to the cloudy condition of the first week the aggregate number of hours of sunshine was not very much above the normal over the country generally, and in a few isolated places it only equalled it. The highest figures were recorded along the south coast, but the south-west coast was not far behind. At Eastbourne the number was 253 hours, rather more than 8 hours per day, or nearly 1½ hours in excess of the normal. Wales and the coast of Lancashire, however, were the brightest districts in relation to the average, although the total was not so high. At Tenby, Llandudno, and Blackpool, where the aggregate in round figures was 230 hours, the excess on the average was 2 hours per day. The London area was relatively dull; at Kew the total for the month was only 172 hours, or 16 hours less than the average. The dullest spot was Manchester, with little more than half the aggregate of Eastbourne.

The three summer months, June to August, were everywhere slightly warmer than the average, and except in the south-west of England and the south of Ireland the rainfall was below the normal. There was also more sunshine than usual, except in the south-west of England, the Channel Islands, and the west of Scotland. The brightest districts were the south of England, with a mean of 7·4 hours per day, the Channel Islands with 7 hours per day, and the east of England with 6·8 hours, but Wales and the south-west and north-west of England were only a little less sunny.

ASYLUM REPORTS.

Worcestershire Asylum at Barnsley Hall, Bromsgrove (*Annual Report for the Year 1913*).—The total number of cases under treatment at this asylum during the year 1913 was 716, the average daily number on the registers being 620. There were admitted 105 cases. Of the direct admissions two-thirds were regarded as incurable when admitted, and 25 per cent. of these were cases of senile dementia. Family histories of insanity were obtained in 34·9 per cent. of the first attack cases, and in addition a history of alcoholism or of neuropathic taint was found in 40 per cent. of the cases. Dr. Percy T. Hughes, the medical superintendent, believes that with increasing knowledge of the causation of mental disease this hereditary taint will not be regarded as of such universal importance. He instances general paralysis of the insane, in which, now that it is definitely known that the disease is caused by the organism of syphilis, it is recognised that hereditary taint is a much less important causal factor than it was formerly considered to be. Similarly, in cases of myxœdema it is recognised that the condition is due to disease of the thyroid gland, and that neuropathic taint has little influence as a causal factor. Dr. Hughes further is of the opinion that when the causes of certain large groups of acute insanities are better known the hereditary factor will occupy a less prominent position than at present. Fifty-three cases were discharged during the year, and of these 17 patients were recovered and 26 were improved, yielding a percentage of 54·4 upon the direct admissions. Forty-two deaths occurred during the year, and in all but six post-mortem examinations were made. The death-rate on the average daily number resident was 6·7. In five cases only was active tuberculosis found, though in another 13 evidence of old tubercle was forthcoming.

Monmouthshire Asylum (*Annual Report for the Year ending March 31st, 1914*).—The total number of cases under treatment during the year was 1388, the average number resident being 1129. There were 158 direct admissions, of which 55 were suffering from insanity of an incurable type. A history of hereditary predisposition was obtained in 30·3 per cent. of the cases and of alcoholic excess in 15 per cent. Dr. N. R. Phillips, the medical superintendent, is of the opinion that this number would be considerably higher were more reliable histories obtainable. The discharges numbered 161, of which 47 were recovered. There were 98 deaths, the rate on the average daily number being 8·6 per cent., which is below the average. Pulmonary tuberculosis was the cause of death in seven cases.

Certification of Lunatics and the Observation Wards, Glasgow (*Annual Report for the Year ending May 15th, 1913*).—In this report Mr. John Carswell, certifying physician in lunacy to the Glasgow parish council, states that during the year 1069 cases were intimated to the inspector of poor as being in need of special care on account of mental disorder. Of these, 527 were certified as lunatics, 546 were not so certified, and 43 remained under treatment in the observation wards at the end of the year. Of those certified, 273 were removed direct to the asylums, while 254 were transferred from the observation wards after preliminary observation and treatment. Of the patients not removed to the asylum 486 were treated in the observation wards. The discharges from the observation wards were 313 recovered, 122 improved, 51 dead, and 254 transferred to the asylums. The figures show the great value to the public of the system established in this parish for the home visitation and examination of every case, and the probationary treatment of patients in the observation wards. The medical aspect of the illness is emphasised, and the result is that patients come to receive treatment in the observation wards as willingly as in a general hospital. Of the 527 certifications, 376 only were certified for the first time, so that the real occurrence of insanity for the year is 64·9 per 100,000 of the population. The number of certifications is 46 less than in 1912 and 67 less than in 1911, and is less than the average for 1901–10. The decrease is more marked among males than females. It is an interesting fact that the total number of first attacks among males during the last three years is less than the total for any three-yearly period during the last 12 years. The highest point was reached during a period of trade depression and the lowest during a period of prosperity. On the other hand, the last three years show a marked increase in insanity among females when compared with the annual averages of 1901–10. Considerations of the age and sex distribution of the population, however, suggest that this is due to an increase in the number of females over the age of 25, at which age they become more liable to insanity. There is also increased tendency to place feeble-minded women under asylum care. Mr. Carswell considers that the figures support his view that insanity is not increasing, and that registered insanity is influenced as regards the fluctuations in its occurrence by causes which are purely economic and administrative. For example, industrial prosperity may enable working people to provide for weak-minded relatives, whereas in times of depression they might be compelled to have recourse to public institutions. With regard to the local incidence of insanity, statistics in Glasgow for the last few years seem to justify the view that there exists a definite relation between the occurrence of insanity and the prevalence of physical disease, and suggest that the problem of the prevention of insanity may prove to be identical with that of the prevention of physical disease. They certainly do not support the view that preventive sanitary measures result in the survival of unfit persons who go to swell the number of the insane and mentally deficient.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

IN accordance with the provisions of Order in Council of April 1st, 1881, Surgeon Gordon Alexander Jackson has been placed on the Retired List (dated Sept. 7th, 1914).

The following appointments have been notified:—Fleet-Surgeons: J. Martin to the *Vivid*, additional, for the *Benbow*; and G. E. Kennedy (retired) to the *Pembroke*, for R.N. Barracks. Staff-Surgeon: J. D. Keir to the *Dolphin*. Acting Surgeon: J. M. Morgan to the *Vivid*, additional, for the *Benbow*. Temporary Surgeons: R. E. Cameron to the *Vivid*, additional, for the *Benbow*; and F. C. Blakeston to the *Vivid*, for R.N. Barracks.

ROYAL NAVAL VOLUNTEER RESERVE.

The undermentioned has been appointed Surgeon:—Ernest Farquhar Murray (dated Sept. 9th, 1914).

TEMPORARY SURGEONS IN THE ROYAL NAVY.

The following is an alphabetical list of the medical officers in the Royal Navy who have been selected for temporary service:—Douglas Knockin Adams, John Wroth Adams, Charles William Archer, Claud Hamilton Blair Avarne, Alaric Ballance, Richard Archibald Barlow, John Rawlings Barrow-Clough, Hugh Wansey Bayly, Thomas Beaton, Bertram James Bewitt, Walter Grimshaw Biggar, Thomas Charles Blackwell, Frederick Cairns Blakeston, John Bostock, Edgar James Boyd, Robert William Brander, Ralph Cay Briscoe, Ralph St. Leger Brockman, David Peebles Brown, Robert Archibald Brown, James Whitson Kemp Bruce, Roger Buddle, Edward Spencer Calthrop, Robert Evan Cameron, Richard Stocker Carey, James Alexander Russell Cargill, Hildred Bertram Carlill, Edgar Carpenter, Geoffry Williams Carte, Clifford Cuthbert Chance, Frederick Ernest Chapman, William Hunter Watson Cheyne, William George Clark, Frederick William Theodore Clemens, Harry Clough, George Cochrane, John Robert Collie, William Pearson Cowper, Thomas McCully Creighton, Thomas Hungerford Cresswell, William Lawrence Cripps, Frederick Hugh Lester Cunningham, Hector Wynne Davies, Howard Vipond Deakin, Edgar Lionel Elliott, Carlton Atkinson Ellis, Frederick Charles Endean, Abel Evans, Arthur Geoffrey Evans, Julian Trevor Eyre Evans, Frederick Bentley Eykyn, Charles James Campbell Faill, Edward Garlick Fisher, Richard Alexander Wilson Ford, Walter Egbert Fox, Humphry Leonard George Foxall, D. French, Henry Ernest King Fretz, Frank Rayshaw Gilhespy, Charles Hart Gimlette, Robert Lionel Glass, Alexander Edward Gow, Arthur Campbell Vaughan Green, Arthur Herbert Harkness, Charles Edward Smith Harris, Arthur Harry Harty, William Hassard, Malcolm Bell Hay, Charles Behmer Heald, Ashley Ernest Herman, Roland Augustus Hobbs, William Henry Stuart Hodge, Gerald Wetherall Caprin Hollest, Frederick James Humphreys, William Ibbotson, William Foulkes Jones, Percival Maurice Keane, Peter Burrows Kelly, Albert Evelyn Fairfax Kynaston, George Eric Warner Lacey, John Lambert, Frederick George Lloyd, Gerald Roche Lynch, Ronald Guy Lyster, William Alexander McKerrow, Arnold McMillan, — Macnairn, Arthur James McNair, John Sides Davies MacCormac, Alexander James MacDiarmid, Alfred Robinson MacMullin, Leopold Mandel, Harold Corry Mann, Charles Ayton Marrett, Gerald Noel Martin, Lionel Arthur Martin, Edwin Maynard, Cyril Frederick Mayne, William Meikle, Robert William Meller, Edward Rowland Alworth Merewether, Reinhard Carl Johannes Meyer, Eric Mackinnon Molesworth, Richard Joseph Monahan, Alan Hilary Moore, Archibald Alexander Morison, Albert Clifford Morson, Donald John Munro, John Henry Newmarch, Frank Nunneley, Charles O'Brien, Gerald Patrick O'Donnell, Robert Sydney Overton, Eric Peace-Gould, Alfred Leslie Pearce-Gould, Hugh Richard Phillips, Durham Dudley Pinnock, Frank Pearce Pocock, William Agard Pocock, Martin Owen Raven, Edward Rayner, Stanley Rivers, Stanley Robertson, William Wilson Rorke, Douglas Ross, James Ewen Robertson Ross, James Ness McBean Ross, Harold Trenchard Rossiter, Archibald Cathcart Roxburgh, Arthur Norman Rushworth, Archibald McKerrow Russell, Alexander Elder Sanderson, Edward Gustave Schlesinger, Charles Frank Schuler, Henry Wakeman Scott, Herbert Edwin Scowcroft, Archibald Campbell Shaw, Reginald Kenworthy Shaw, Charles Woolley Shepherd, Alfred George Simmins, Reginald Eccles Smith, George John Chase Smyth, Gerald Nicholson Stathers, George Frank Stebbing, Thomas Louis Grenet Stewart, Alan Lee Sutcliffe, Charles Lindsay Sutherland, Halliday Gibson Sutherland, Harold Eustace Thom, Edmund Fairfield Thomas, Archibald Todrick, Walter Palmer Vicary, Arthur Viney, Michael Vlasto, Godfrey Alan Walker, John Cuthbertson Walker, John Glen Wardrop, Cuthbert Warner, James Henry Digby Watson, John Nuthall Watson, Walter Geoffrey Watson, James Cairns Watt, Sydney Welham, Hugh Wetherlee, Francis Sylvanus Williams, Frederick Arnold Williamson, Alexander Frederick Richmond Wollaston, and Thomas Wyndham.

ROYAL ARMY MEDICAL CORPS.

Captain John Harold Peek, from the Australian Army Medical Corps, is granted the temporary rank of Captain (dated Sept. 11th, 1914).

The undermentioned are granted the temporary rank of Lieutenant: Gerald Whittington and George Thomas Whyte (dated Sept. 1st, 1914). William Joseph Maloney (dated Sept. 6th, 1914). James Cowie Dick (dated Sept. 7th, 1914). (Dated Sept. 9th, 1914): Nigel Philip Boulton, Evan Hugh Jones, Cyril Douglas Faulkner, Charles Lyon Herklots, Geoffrey Duncan Harding, Douglas Macinnes Hunter, John Marsters Mitchell, John Mowat, John Murray Moyes, Aneurin Evan Roberts, Francis Charles Robbs, and Thomas Holmes Ravenhill. (Dated Sept. 10th, 1914): John Alban Andrews John Stanley Arkle, Hugh John Couchman, Edward Gordon, Bernard George Gutteridge, Frank Wilson Harlow, George Bedingfield Holroyde, Reginald Saint Alban Heathcote, Gavin Dalzell McLean, Donald MacIntyre, Louis Augustus Moran, Samuel Edward McClatchey, Matthew William Baillie Oliver, Henry William Parnis, Gavin Stiell, Richard Henry Stevens, Edward Seelley, Frederick Edward Tillyard, Hill Wilson White, Gerald Douglas Hamilton Wallace, and Robert Ewart Cree. (Dated Sept. 11th, 1914): Reginald George Abrahams, Robert Marshall Allan, Percy Webber Black, Bagot Neptune Blood, James Harding Barry, Alexander Ernest Chisholm, Claud Norman Coad, George Dunluce Eccles, John Morley Glasse, John Henry Graham Hunter, Alexander William Hendry, Richard Arthur Jones, George Harold Lunan, John Richardson Marrack, Benjamin Bell Noble, Thomas Bourne-Price, Robert Edward Roberts, Robert Cecil Robertson, Philip Smith, and Wilfred Archer Sneath. (Dated Sept. 12th, 1914): William Lumley.

TERRITORIAL FORCE.

Royal Army Medical Corps.

1st South-Western Mounted Brigade Field Ambulance: William Cliff Hodges to be Lieutenant (supernumerary) (dated Sept. 16th, 1914).

2nd East Anglian Field Ambulance: Major George Blake

Masson to be Lieutenant-Colonel (dated Sept. 16th, 1914). Captain William J. Caie, from Attached to Units other than Medical Units, to be Captain (dated August 10th, 1914).

3rd East Anglian Field Ambulance: Lieutenant William Reginald Margetts Turtle, from Attached to Units other than Medical Units, to be Lieutenant (dated Sept. 16th, 1914).

2nd Home Counties Field Ambulance: Herbert Stanley Hollis to be Captain (dated Sept. 16th, 1914).

1st North Midland Field Ambulance: Major Edwin A. Wraith to be Lieutenant-Colonel (dated Sept. 16th, 1914). The undermentioned Captains to be Majors: Thomas Ashley Barron and Frederick Russell Bremner (dated August 1st, 1914).

2nd North Midland Field Ambulance: Joseph Francis Dixon (late Captain 10th New Zealand Rifles (Mounted) to be Captain (dated Sept. 16th, 1914).

2nd South Midland Field Ambulance: The undermentioned Captains to be Majors: William Algernon Louis Holland and John Henry Hobling (dated Sept. 16th, 1914).

2nd West Riding Field Ambulance: Samuel Sowray Greaves to be Lieutenant (dated Sept. 16th, 1914).

1st Wessex Field Ambulance: The undermentioned to be Lieutenants (dated Sept. 16th, 1914): George Downing Perry and Robert Burgess.

3rd London General Hospital: Captain James E. Lane is seconded (dated Sept. 16th, 1914).

3rd Northern General Hospital: Thomas Bernard Mouat to be Captain (dated Sept. 16th, 1914).

5th Northern General Hospital: Officer whose services will be available on mobilisation: Thomas Charles Clare to be Captain (dated August 30th, 1914).

1st East Anglian Field Ambulance: Gilbert Clement Gray to be Lieutenant (dated August 10th, 1914).

2nd Wessex Field Ambulance: Captain Richard P. Ryan, from the list of Officers attached to Units other than Medical Units, to be Captain (dated Sept. 12th, 1914).

5th Southern General Hospital: Captain John T. Leon is seconded (dated Sept. 12th, 1914).

Sanitary Service: Major Robert Burnet to be Lieutenant-Colonel (dated August 10th, 1914).

Attached to Units other than Medical Units.—Arthur Henry Smith (late Captain, 8th (Ardwick) Battalion, the Manchester Regiment) to be Captain (dated Sept. 12th, 1914). Hyman Lightstone to be Lieutenant (dated Sept. 12th, 1914). Lieutenant Joseph M. A. Costello to be Captain (dated August 5th, 1914). Surgeon-Lieutenant Harry G. F. Dawson, from the Welsh Divisional Engineers, to be Captain (dated August 5th, 1914). Lieutenant Vincent Howard to be Captain (dated Sept. 16th, 1914). Lieutenant Arthur C. Bird to be Captain (dated Sept. 16th, 1914). Surgeon-Major Alexander Cosgrave resigns his commission on account of ill-health (dated Sept. 16th, 1914). The transfer to the Territorial Force Reserve of Captain Leonard B. Cane is cancelled. William Albert Robertson to be Lieutenant (dated Sept. 16th, 1914).

JOURNAL OF THE ROYAL ARMY MEDICAL CORPS.

The opening article in the August issue of this journal deals with the Epidemiology of Rheumatic Fever, and is contributed by Lieutenant-Colonel W. S. Harrison. Among his conclusions are the following. The distribution of rheumatic fever throughout the country shows areas of special endemicity in which further investigation would probably prove useful, and there is evidence that it tends to occur in epidemic form, being favoured by drought and high temperatures. He has been unable to find any evidence that cold and wet are important factors in its causation, though they probably help to determine relapses. Finally, he concludes that there is a mass of latent valvular disease in the community which becomes manifest under conditions of exceptional strain, such as that of war. Most of the other articles are of particular interest at the present moment. Captain F. Gracie discusses an Efficient Method of Determining by Charts the Classification of Wounded and the Material and Time Required for their Transport, Captain C. R. Sylvester Bradley contributes some Reflections on the Army Medical Service in Campaign, and Captain H. H. A. Emerson deals with the Collection and Evacuation of Sick and Wounded in the Territorial Force. Captain R. H. L. Cordner makes some interesting observations on the Medical Examination of a Unit on Mobilisation, and in Leaves from a Notebook Colonel R. H. Firth explains in as simple a form as possible "the fundamental physical facts and conceptions underlying ionic medication, the interaction of toxin and antitoxin, agglutination, and catalysis or enzyme action."

DYSENTERY ON THE BATTLEFIELD.

Mr. A. G. Hales, writing as special war correspondent to the *Evening News* from the battlefield on Sept. 14th, reports that German prisoners are stating that dysentery is beginning to make itself felt in their ranks. In the first of Dr. F. M. Sandwith's Lettsomian Lectures, which are now being published in THE LANCET, an extremely timely description of the association of dysentery with war will be found. If the report by Mr. Hales be true the German army may be faced with a most serious situation, and one which the occurrence of wet weather may aggravate. In the Franco-German war of 1870–71 there were nearly 40,000 admissions and over 2000 deaths from dysentery in the German army, and the German troops on their return home spread infection in many districts, where, in Dr. Sandwith's opinion, the populations have even yet not quite freed themselves from the contagion. In the South African war almost exactly the same number of cases of dysentery were reported, although the death-rate was little more than half, and here, again, Dr. Sandwith warns us that an outbreak of dysentery at Aldershot in 1901, with 170 cases and 38 deaths, was apparently due to the importation of the disease by returning troops. It is laid down by Dr. Sandwith that dysentery is a water-borne disease, and this being so we are bound to remember that if either army is attacked the condition may spread to the other, inasmuch as every advancing force must often occupy the position previously held by the retiring enemy, who may already have seriously fouled the site.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN the 97 English and Welsh towns with populations exceeding 50,000 persons at the last Census, 8597 births and 5291 deaths were registered during the week ended Saturday, Sept. 12th. The annual rate of mortality in these towns, which had been 12·3, 13·6, and 14·4 per 1000 in the three preceding weeks, further rose to 15·2 per 1000 in the week under notice. During the first ten weeks of the current quarter the mean annual death-rate in these towns averaged 12·7 per 1000, and equalled the rate in London during the same period. Among the several towns the death-rate last week ranged from 3·7 in Bournemouth, 4·0 in Barrow-in-Furness, 4·4 in Ealing, 4·9 in Swindon, 5·1 in Exeter, and 6·2 in Gloucester, to 23·4 in Wigan, 23·5 in Stoke-on-Trent and in Middlesbrough, 23·7 in Carlisle, 24·5 in Gateshead, and 25·5 in Stockton-on-Tees.

The 5291 deaths from all causes were 275 in excess of the number in the previous week, and included 1398 which were referred to the principal epidemic diseases, against numbers steadily increasing from 394 to 1189 in the nine preceding weeks. Of these 1398 deaths, 1172 resulted from infantile diarrhœal diseases, 71 from measles, 51 from whooping-cough, 49 from diphtheria, 39 from scarlet fever, and 16 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 4·0, or 0·6 per 1000 above the rate in the previous weeks. The deaths of infants (under 2 years) from diarrhœa and enteritis, which had steadily increased from 112 to 947 in the nine preceding weeks, further rose to 1172, of which 321 were registered in London, 93 in Liverpool, 62 in Birmingham, 38 in Stoke-on-Trent, 35 in Sheffield, 33 in Leeds, 32 in Manchester and in Hull, 28 in Sunderland, and 26 in Nottingham. The deaths referred to measles, which had declined from 111 to 82 in the four preceding weeks, further fell to 71 last week, and included 28 in London, 12 in Oldham, and 4 each in West Ham, Liverpool, and Manchester. The fatal cases of whooping-cough, which had been 51, 52, and 69 in the three preceding weeks, fell to 51 last week, and included 17 in London and 6 in Liverpool. The deaths attributed to diphtheria, which had increased from 31 to 49 in the four preceding weeks, were again 49 last week, of which 16 were recorded in London, 6 in Birmingham, 5 in Stoke-on-Trent, 3 in Sheffield, and 2 each in Portsmouth, Manchester, and Middlesbrough. The deaths referred to scarlet fever, which had been 23, 20, and 25 in the three preceding weeks, further rose to 39 last week, and included 12 in London, 5 in Manchester, 3 in Sheffield, and 2 each in Salford, Newcastle-on-Tyne, and Cardiff. The fatal cases of enteric fever, which had been 9, 14, and 17 in the three preceding weeks, were 16 last week, of which 3 occurred in London and 2 each in Portsmouth, Wigan, and Hull.

The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 3071, 3216, and 3318 at the end of the three preceding weeks, had further increased to 3500 on Saturday last; 619 new cases were admitted during the week, against 414, 536, and 548 in the three preceding weeks. These hospitals also contained on Saturday last 1134 cases of diphtheria, 50 of enteric fever, 41 of whooping-cough, and 13 of measles, but not one of small-pox. The 1394 deaths from all causes in London were 62 in excess of the number in the previous week, and were equal to an annual death-rate of 16·1 per 1000. The deaths referred to diseases of the respiratory system, which had been 143, 132, and 128 in the three preceding weeks, rose to 132 in the week under notice, and were equal to the number in the corresponding week of last year.

Of the 5291 deaths from all causes in the 97 towns, 181 resulted from various forms of violence, and 361 were the subject of coroners' inquests, while 1453 occurred in public institutions. The causes of 45, or 0·9 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in Manchester, Leeds, Bristol, West Ham, Hull, Newcastle-on-Tyne, and in 67 other smaller towns. Of the 45 uncertified causes of death, 10 were registered in Liverpool, 6 in Birmingham, and 2 each in London, Southend-on-Sea, Bootle, Blackpool, Sheffield, Sunderland, and Gateshead.

HEALTH OF SCOTCH TOWNS.

In the 16 largest Scotch towns with an aggregate population estimated at 2,293,200 persons at the middle of this year, 1048 births and 727 deaths were registered during the week ended Saturday, Sept. 12th. The annual rate of mortality in these towns, which had increased from 13·8 to 16·0 per 1000 in the four preceding weeks, further rose to 16·5 per 1000 in the week under notice. During the first ten weeks of the current quarter the mean annual death-rate in these towns averaged 14·0, against 12·7 per 1000 in the 97 large English towns. Among the several towns the death-rate last week ranged from 9·4 in Falkirk, 11·0 in Ayr, and 12·3 in Perth to 19·9 in Edinburgh, 21·4 in Greenock, and 22·5 in Dundee.

The 727 deaths from all causes were 24 in excess of the number in the previous week, and included 137 which were referred to the principal epidemic diseases, against numbers steadily increasing from 49 to 121 in the six preceding weeks. Of these 137 deaths, 101 resulted from infantile diarrhœal diseases, 16 from whooping-cough, 12 from scarlet fever, 6 from diphtheria, and 2 from enteric fever, but not one from measles or from small-pox. The mean annual death-rate from these diseases was equal to 3·1, against 4·0 per 1000 in the 97 large English towns. The deaths of infants (under 2 years) from diarrhœa and enteritis, which had steadily increased from 29 to 89 in the five preceding weeks, further rose to 101 last week, and included 67 in Glasgow, 7 each in Dundee and Paisley, 6 in Edinburgh, and 4 in Greenock. The deaths referred to whooping-cough, which had been 13, 15, and 16 in the three preceding weeks, were again 16 last week, of which 13 were registered in Glasgow. The fatal cases of scarlet fever, which had been 6, 8, and 4 in the three preceding weeks, rose to 12, and included 7 in Glasgow and 2 in Leith. The deaths attributed to diphtheria, which had been 11, 6, and 8 in the three preceding weeks, fell to 6, of which 3 were recorded in Glasgow The 2 fatal cases of enteric fever occurred in Glasgow,

The deaths referred to diseases of the respiratory system, which had been 69, 70, and 65 in the three preceding weeks, rose to 73 in the week under notice, and 23 deaths were attributed to different forms of violence, against 25 and 30 in the two preceding weeks.

HEALTH OF IRISH TOWNS.

In the 27 town districts of Ireland with an aggregate population estimated at 1,205,280 persons at the middle of this year, 599 births and 394 deaths were registered during the week ended Saturday, Sept. 12th. The annual rate of mortality in these towns, which had increased from 15·3 to 18·1 per 1000 in the four preceding weeks, declined to 17·0 per 1000 in the week under notice. During the first ten weeks of the current quarter the mean annual death-rate in these towns averaged 16·3 per 1000, against corresponding rates of 12·7 and 14·0 per 1000 in the English and Scotch towns respectively. The annual death-rate last week was equal to 17·1 in Dublin (against 16·1 in London and 17·6 in Glasgow), 18·0 in Belfast, 17·7 in Cork, 12·7 in Londonderry, 24·4 in Limerick, and 22·8 in Waterford, while in the 21 smaller towns the mean death-rate did not exceed 13·7 per 1000.

The 394 deaths from all causes were 25 fewer than the number in the previous week, and included 89 which were referred to the principal epidemic diseases, against 91 and 84 in the two preceding weeks. Of these 89 deaths, 71 resulted from infantile diarrhœal diseases, 7 each from whooping-cough and enteric fever, 2 from scarlet fever, and 1 each from measles and diphtheria, but not one from small-pox. The mean annual death-rate from these diseases was equal to 3·8, against corresponding rates of 4·0 and 3·1 per 1000 in the English and Scotch towns respectively. The deaths of infants (under 2 years) from diarrhœa and enteritis, which had steadily increased from 18 to 74 in the five preceding weeks, fell to 71 last week, and included 39 in Belfast, 17 in Dublin, and 3 each in Waterford and Lisburn. The deaths referred to whooping-cough, which had been 7, 7, and 3 in the three preceding weeks, rose to 7 last week, of which 5 were registered in Belfast. The 7 fatal cases of enteric fever were 5 in excess of the average in the earlier weeks of the quarter, and comprised 3 in Dublin, and 2 each in Belfast and Ballymena. The deaths from scarlet fever were recorded in Dublin and Belfast, that from measles in Belfast, and the fatal case of diphtheria in Drogheda.

The deaths referred to diseases of the respiratory system, which had been 47, 43, and 49 in the three preceding weeks, declined to 35 in the week under notice. Of the 394 deaths from all causes, 129, or 33 per cent., occurred in public institutions, and 7 resulted from different forms of violence. The causes of 8, or 2·0 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the 97 English towns the proportion of uncertified causes of death last week did not exceed 0·9 per cent.

Correspondence.

"Audi alteram partem."

THE GENERAL MEDICAL COUNCIL AND UNREGISTERED DEPUTIES.

To the Editor of THE LANCET.

SIR,—At a meeting of the Executive Committee of the General Medical Council held to-day the President made a statement in regard to certain correspondence received by the Registrar respecting unqualified locum tenents and kindred matters, and the steps that had been taken in regard thereto.

He read the following letter, which had been sent by the Registrar to the practitioners concerned, which the committee approved and directed to be entered in the minutes:—

With reference to your letter of …………, I am directed by the President of the General Medical Council to inform you that, in terms of the enclosed Warning Notice, any registered practitioner who entrusts his professional practice to an unqualified person or who signs medical certificates on such person's behalf, renders himself liable to be summoned before the Council, and after due inquiry to be adjudged guilty of grave professional misconduct.

The circumstances of the present situation do not, in the President's opinion, afford any excuse for action which the Council has described as "fraudulent and dangerous to the public health."

Means are available whereby the services of registered practitioners can be obtained in substitution of those of practitioners who may be called away from civil practice on military service, and it is the plain duty of the latter to make arrangements for the proper professional treatment of their ordinary patients during their absence.

I am to add that copies of your letter, and of this reply, will be laid before the Council should occasion arise for a judicial inquiry into the matter.

I am, Sir, yours faithfully,
A. J. COCKINGTON,
Acting Registrar.

Oxford-street, London, W., Sept. 15th, 1914.

⁂ We have referred to this subject in our general notes dealing with new conditions arising out of the war.—ED. L.

THE TECHNIQUE OF ARTIFICIAL PNEUMOTHORAX.

To the Editor of THE LANCET.

SIR,—May I venture to point out more fully the fallacy in Dr. Parry Morgan's reasoned condemnation of the one manometer or direct method. Shortly stated, his thesis is: "The manometer cannot furnish records nor show respiratory movements unless the lung is punctured because (1) the volume of gas involved is small, (2) the gas will move away from the needle point, and (3) the visceral pleura will consequently block the needle."

As regards dictum (1): All that need be said is that whatever the volume may be its behaviour will be in accordance with the laws of physics. As regards dictum (2): If a small volume of gas be introduced into the pleural cavity and the needle be immediately withdrawn, the gas will be subject to the following forces, (*a*) capillary attraction between the layers of the pleura, tending to keep it in position, and (*b*) during respiration to alternate increase and diminution of pressure. It is a justifiable assumption that the increase of pressure during expiration is greater than the pleural capillarity, consequently the gas will be driven to any part of the pleural cavity, where it will be least subject to compression, and, as Dr. Parry Morgan has shown, will take up a position opposite any consolidated portion of lung. But if the needle connected with the manometer has not been withdrawn the conditions are altered. Capillary attraction still exerts its limiting action, but alterations in pressure are met by the movement of a corresponding portion of gas to or from the manometer. Therefore, the gas does not move away from the needle, as its position is already one in which increase in pressure cannot affect it. It will be accommodated by a conical delling of the lung, the base of the cone being roughly circular with its centre at the point of the needle (a mathematical person might calculate the area of this circle for any volume of gas), and this, provided the needle has not been pushed in to an unjustifiable extent, disposes of dictum number (3). Therefore, provided the lung has *not* been punctured, the manometer will accurately register intrapleural pressures, and respiration will be accompanied by corresponding free oscillations.

I am, Sir, yours faithfully,

Rayleigh, August 23rd, 1914. W. MILLER.

ANTITYPHOID INOCULATION IN WAR TIME.

To the Editor of THE LANCET.

SIR,—On behalf of the Research Defence Society, which represents the general opinion of all who have studied the facts of antityphoid inoculation, we desire to say that the society very strongly approves of this treatment for all men and women who are likely in the near future to come in contact with typhoid fever. We have accordingly offered the services of this society to the Royal Army Medical Corps.

We are, Sir, yours faithfully,
LAMINGTON,
President.
F. M. SANDWITH, M.D.Durh., F.R.C.P.Lond.,
Honorary Treasurer.
STEPHEN PAGET, F.R.C.S.Eng.,
Honorary Secretary.
21, Ladbroke-square, W., Sept. 11th, 1914.

EMETINE IN THE TREATMENT OF CHOLERA.

To the Editor of THE LANCET.

SIR,—I have just read in your issue of Sept. 12th an annotation dealing with the successful treatment of Asiatic cholera by emetine. This reminds me of an experience of my own during the epidemic in the island of Ischia, near Naples, when I was resident physician to the late Lord Holland.

Cholera was decimating the population of the island when we arrived there in June, 1854. Having had a three months' apprenticeship while discharging the duties of house physician at King's College Hospital in the autumn of 1849 I was able to test and to appreciate the value of emetics administered in the earlier stages of the disease. Not having many drugs at hand in the island I fell back upon hot salt and water, and found that if by half-pint doses of this mixture I could ensure copious vomiting for three or four hours the malady might be checked and life preserved.

Reference to your journal during the autumn of 1849 would, I believe, show that this treatment was originally suggested by Dr. Beaman, a general practitioner then living, I think, not far from Covent Garden. I am, Sir, yours faithfully,

Worthing, Sept. 14th, 1914. I. D. CHEPMELL.

⁂ Mr. George Beaman, of King-street, Covent Garden, W.C., described in THE LANCET of August 23rd, 1834, the successful treatment of 11 successive cases of cholera by saline emetics, disclaiming "merit for originality of system." In THE LANCET of August 11th, 1849, there will be found a synopsis of the treatment adopted by ten of the metropolitan general hospitals during an epidemic of cholera. "Mr. Beaman's treatment" is referred to as being employed at King's College Hospital. We thank our old Paris Correspondent for his interesting note.—ED. L.

CALCIUM CONTENT OF BLOOD IN SYPHILIS.

To the Editor of THE LANCET.

SIR,—Professor F. W. Andrewes recently suggested to me that it would be useful to estimate the calcium content of the blood in patients suffering from primary, secondary, and tertiary syphilis. The following results show fairly well certain apparent differences between the normal individual and the syphilitics. My reason for publishing them is to learn if others who may have done similar work have had like results. Wright's method with throttled glass tube and a solution of ammonium oxalate of known strength was used; all dilutions were made with normal saline solution. The determining factor was the strongest solution of ammonium oxalate in which a clot appeared.

Normal man	with	1	in	1400	sol.	=	clot.	
,, woman ...	,,	1	,,	1400	,,	=	,,	
Primary syphilitic	,,	1	,,	1400	,,	=	,,	
,, ,,	,,	1	,,	1400	,,	=	,,	(Untreated).
,, ,,	,,	1	,,	1200	,,	=	,,	(Some treatment).
,, ,,	,,	1	,,	1200	,,	=	,,	(Untreated).
,, ,,	,,	1	,,	1200	,,	=	,,	(Some treatment).
,, ,,	,,	1	,,	1200	,,	=	,,	(606).
,, ,,	,,	1	,,	1200	,,	=	,,	(Untreated).
Secondary ,,	,,	1	,,	800	,,	=	,,	(Untreated).
,, ,,	,,	1	,,	1000	,,	=	,,	(606 and injection).
,, ,,	,,	1	,,	1200	,,	=	,,	(Some treatment).
,, ,,	,,	1	,,	1000	,,	=	,,	(606 and injection).
,, ,,	,,	1	,,	1200	,,	=	,,	(606 and injection).
,, ,,	,,	1	,,	1000	,,	=	,,	(606).
,, ,,	,,	1	,,	1200	,,	=	,,	
,, ,,	,,	1	,,	1000	,,	=	,,	(Untreated),
,, ,,	,,	1	,,	1000	,,	=	,,	
,, ,,	,,	1	,,	1000	,,	=	,,	(Untreated).
,, ,,	,,	1	,,	1000	,,	=	,,	(606 and injection)
,, ,,	,,	1	,,	800	,,	=	,,	
,, ,,	,,	1	,,	1000	,,	=	,,	
,, ,,	,,	1	,,	1000	,,	=	,,	(606).
,, ,,	,,	1	,,	1000	,,	=	,,	(Untreated).
Tertiary ,,	,,	1	,,	1200	,,	=	,,	(606 and injection).
,, ,,	,,	1	,,	1200	,,	=	,,	(606 and injection).
,, ,,	,,	1	,,	1200	,,	=	,,	
,, ,,	,,	1	,,	1200	,,	=	,,	

In a series of investigations with healthy and non-syphilitic persons I found the calcium content by Wright's method to be equivalent to a 1 in 1300 solution of ammonium oxalate. With the present series it was convenient to use solutions of 1 in 600, 1 in 800, 1 in 1000, 1 in 1200, 1 in 1400, and 1 in 1600. The method shows the amount of ionic calcium salt which can be neutralised by the oxalate solution in order to prevent coagulation.

The above results demonstrate the fact that whereas the non-syphilitic individual showed a clot with a 1 in 1400 solution the primary syphilitics suggested a tendency to clot with stronger solutions, and therefore pointing to a slight increase of the calcium content of their blood. During the secondary stage the tendency to clot in still stronger solutions is noticed. The average here was a clot with a 1 in 1000 solution, but in two instances clotting was obtained with a strength of 1 in 800. With the tertiary syphilitics some clotting was obtained with a 1 in 1200 solution, but the number of cases investigated was insufficient to draw deductions from. Briefly, these experiments suggest that there is a tendency for slight increase of the calcium content with the primaries, a greater increase with the secondaries, and a decrease again with the tertiaries, so that their bloods contain only slightly more calcium than the non-syphilitic and healthy. If these facts should turn out, after further investigation, to be the truth, how can we interpret them? Possibly the increase of calcium may act as a protective power in that the blood clotting more easily might allow less of the syphilitic toxins to pass out from the capillaries into the lymph which bathes the cells in the various tissues of the body. This is merely speculative argument and may or may not be true. I might mention that in obtaining the few drops of blood from the thumb necessary for the experiment one had to be very quick in most of the secondaries lest the blood clotted on the thumb itself. In some this was not seen, and perhaps previous treatment by "606" may make a difference.

These experiments were performed at the Male Lock Hospital, Dean-street, London, W., by kind permission of Mr. J. Ernest Lane. and Mr. J. E. R. McDonagh.—I am, Sir, yours faithfully,

BERNARD MYERS, M.D. Edin.,
Physician to Out-patients at the Royal Waterloo Hospital, S.E.
Wimpole-street, W., Sept. 14th, 1914.

ORAL SEPSIS AND THE EXTRACTION OF TEETH.

To the Editor of THE LANCET.

SIR,—In any given case "wholesale" extraction may or may not be the best treatment, but the man who advises should have a thorough understanding of dental sepsis. Sir James F. Goodhart, on his own showing, does not possess such an understanding. I exposed the weakness of his first letter; may I answer that of August 22nd? In his "poor non-expert way" Sir James Goodhart examines for pockets by finger pressure. If he expresses visible pus there is "pyorrhœa alveolaris"; if not, all is well. This is indeed a "poor non-expert" criterion. It can be applied only to the front surfaces of the more anterior teeth, leaving their interstitial and lingual surfaces and all the back teeth unexamined. Moreover, it is not trustworthy for what it does reach; the pockets may have been but recently evacuated and their bases may be formed by a gutter of unyielding bone from which no finger pressure can express the contents. Unless the examiner uses both a fine probe and cotton-wool wisps and explores carefully the whole circumference of every tooth he can form no judgment of the absence either of pockets or visible pus.

Next I may ask why putrid decomposition is so summarily dismissed. It is, indeed, not pleasant to have to use the sense of smell for its detection, but this will not diminish its danger, and I can offer no more delicate way of detecting it. Why is a stinking cowyard or drain or putrid meat condemned? I can see no less danger in swallowing putridity from between your teeth than from off your plate, and if a thorough examination be made of every mouth the amount of putrid stagnation that is to be found among the teeth will astonish the non-expert.

We are asked, "have the changes said to occur in the bone in these cases [I presume of "pyorrhœa"] been clearly distinguished from those which must exist in company with retrocession of the gum?" Why should we distinguish? In some cases of slow "pyorrhœa" the recession of the gum progresses at an equal rate with the destruction of bone, and the disease is so much the less dangerous, but the carious process is fundamentally the same. Can Sir James Goodhart give us a reason for separating recession of gums from "pyorrhœa alveolaris?"

We are asked for proof that dental (or oral) sepsis is a dangerous condition. Proof is found both in the results of treatment—often by "wholesale" extraction—and in the condition of the local tissues. Has Sir James Goodhart never effected a cure of some one of the manifold diseases of the human body by total extraction of teeth? at least others have, and in no small numbers. This, I take it, is proof of the danger, though not of how much or how little dental sepsis is a danger. This is measured by the patient's resistance—an unknown quantity till tried.

Looking at the mouth we find the tissues in varying states of persistent inflammation and ulceration, while the teeth themselves are being absorbed and extruded, treated as dangerous foreign bodies. The fact of inflammation shows that the local tissues resent the presence of dental sepsis, while every inflamed focus, and more so every ulcer, is a centre for absorption of toxins and germs. This is fundamental pathology. Sir James Goodhart, I presume, does not doubt the ulceration of the toothward surface of the gum-flaps forming the pockets, but there are other areas of ulceration. Wherever the gum is in contact with tartar it is in a state of chronic catarrh or actual ulceration. These two sources of ulceration yield a superficial area of no small extent draining into the mouth or causing absorption into the general system. Is there any doubt of danger? Sir James Goodhart's criterion of danger is pockets and pus. Why is not persistent gingivitis a sign of danger? It indicates dental sepsis, absorption of germs and toxins, and swallowing of putrid débris. As another not negligible danger I may point to the possibility that a septic mouth is a carrier to the detriment of the community.

Sir James Goodhart makes his "position clear" by saying I (the writer) "seem to hold that pyorrhœa is a common disease, an insidious one, easily overlooked, yet associated with definite changes in the bones, and that it leads to septic intoxication. If what I (Sir J. Goodhart) in my ignorance call gingivitis he calls pyorrhœa alveolaris, so be it. My essential point is, however, is it the cause of septic absorption, and is it worthy of the extraction of the teeth in bulk?" Yes, "pyorrhœa" is both common and insidious, and if not easily, at all events frequently overlooked. What Sir James Goodhart calls gingivitis probably is pyorrhœa and associated with bone disease and septic absorption. (The term gingivitis as denoting a separate entity is best used when qualified by the word "marginal," and marginal gingivitis is the first stage in the onset of pyorrhœa.) Gingivitis, even if only marginal, is accompanied by septic absorption, and can only be cured by thorough daily cleaning of the teeth. I submit that where there is systemic infection every tooth that cannot be kept aseptic (and free from smell) should be extracted.

In support of his sceptical position Sir James Goodhart quotes "the usual hue and cry which took place when first the oral sepsis explanation of pernicious anæmia was announced." This seems to be unfortunate, since Hunter's position was that though oral sepsis was an important factor the *causa causans* remained to be elucidated.

Sir James Goodhart protests against "wholesale" extraction. For my part I feel that the protest lies the other way—against those who practise any branch of the art of medicine without a thorough knowledge of the details of dental sepsis.

I am, Sir, yours faithfully,
Wimpole-street, W. J. G. TURNER.

INSURANCE POLICIES AND THE WAR.

To the Editor of THE LANCET.

SIR,—As a matter of importance to many of your readers may I ask you to, if possible, kindly publish this letter and so make known the resolution passed at a special meeting of the committee of the Medical Sickness, Annuity, and Life Assurance F. Society, held on August 21st, a copy of which is appended.

I am, Sir, yours faithfully,
BERTRAM SUTTON, Secretary.
33, Chancery-lane, London, W.C., August 24th, 1914.

[RESOLUTION.]

Any member serving with His Majesty's Forces on active service abroad shall be allowed to retain his membership without extra premium, and shall, on return to the United Kingdom, come into sickness and accident benefit.

Any member serving with His Majesty's Forces while in the United Kingdom shall be held fully covered for sickness and accidents without extra premium.

Any member insured for life assurance serving with His Majesty's Forces either abroad or in the United Kingdom shall not be charged any extra premium and shall be held fully covered.

HELMINTHEMESIS.

To the Editor of THE LANCET.

SIR,—Dr. A. R. Neligan's letter under the above heading in THE LANCET of June 6th, 1914, p. 1649, reminds me that during some years' practice in Assam I noticed the vomiting of round worms to be a very common occurrence. I particularly remember the case of a young child who was very pale and emaciated. On examining the very distended abdomen large masses of worms could be most easily felt. A mixture of eucalyptus, chloroform, and castor oil was given, and the babu was instructed to count the worms expelled. I saw large quantities of them the next day, and I was informed that up to 1000 had been counted and that then the babu had become tired of his job.

I am, Sir, yours faithfully,
Suva, Fiji, July 22nd, 1914. D. J. DRAKE.

EMPHYSEMA COMPLICATING LABOUR.

To the Editor of THE LANCET.

SIR,—Some ten years ago I formed a theory as to the pathology of surgical emphysema complicating labour, and I think Mr. Edward Smeed, whose paper appeared in THE LANCET of August 15th, p. 445, may be able to adduce evidence either in favour of or against it.

There are it seems to me strong reasons against the theory that the emphysema is due to either a rupture of pulmonary vesicles or of "the larger air tubes" (Blundell, Obstetrics, 1830). In all the cases I have seen recorded the face is involved—often chiefly involved. In pneumothorax there is never surgical emphysema of the face and neck. In all the cases of emphysema complicating labour (as in Mr. Smeed's) the most careful examination has failed to discover signs or symptoms of pulmonary disease either before or after the occurrence of the emphysema.

A case recorded by Dr. Wm. Smith[1] suggested to me what seems to be a much more plausible pathology. A little while before reading his case I had come across three cases of fracture of the lacrymal bone associated with—indeed, diagnosed from—surgical emphysema of the face. These were all due to comparatively trivial injuries. In the third case the patient had fallen and struck her nose, but not sufficiently to produce an ordinary black eye. In this case I got the patient to blow the nose a number of times, and with each attempt the surgical emphysema spread, first filling out the eyelids and then spreading over the malar region and the cheek.

Now Dr. Smith's account is as follows: "...... [when the head reached the perineum] the pains became strong and lasted much longer. At this stage the patient's eyelids suddenly became swollen, and she complained that she could not see out of her left eye. The swelling rapidly spread over the face. ...... The subcutaneous swelling was found to extend over the whole face, the front and sides of the neck, and over the front of the chest as low as the third rib. ...... The emphysema by the fourth day had completely disappeared."

My suggestion is that—remembering how exceedingly thin the lacrymal bone may be—the straining during labour caused a slight laceration of the bone and its mucous covering, and continued efforts forced air first into the eyelids and then over the face and neck. It would be interesting to know whether Mr. Smeed or anyone else who was with his patient noticed where the emphysematous swelling first appeared and in what direction it spread.

I am, Sir, yours faithfully,
Bradford, Sept. 12th, 1914. JAMES PHILLIPS.

A FORM OF MASTODYNIA.

To the Editor of THE LANCET.

SIR,—Can I be referred by any of your correspondents to a clear account of cases such as that described below? They appear in my experience to be common, but no observer seems to have thought it worth while to mention them in any of the usual manuals. According to my fancy they might be named mastodynia, neuralgia of the mamma, or a form of chronic mastitis. What I wish to ascertain if possible is the anatomico-pathological condition present.

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[1] The Stethoscope, November, 1904.

The kind of case I allude to is that of a young woman whose complaint is that of pain in the breast, and on examination a small flabby breast is seen. I have never found the trouble in those women who possess firm mammæ. Examined with the flattened hand the breast may not show any thickened lobuli, but on careful palpation tender areas along the ribs underneath the upper quadrants will be revealed, and usually in the position of the cartilages slight thickening is apparently present. Some of the cases complain of pain in the mid-axillary line and not over the mamma, and the symptoms are then apt to be confused with those of dry pleurisy. The menstrual period may cause the discomfort to become worse, but this is a variable feature.

I should expect that the ligaments of Astley Cooper are at fault but I am not clear as to their exact distribution or as to their connexions with the rib periosteum. Needless to say, intestinal stasis has been suggested to me as a factor, but seeing that immediate, and in time permanent, relief is afforded by a bandage lifting up the flabby tissues (the addition of belladonna plaster only acting as a form of support), one may put this out of court and rely on some form of strain as the chief, if not the only, cause. The patches of periosteal thickening I have only felt and have not tried to verify by X ray examination. Occasionally I have given a salicin mixture, but the efficacy of this is very doubtful. I have not noted that any particular group of manual labour has predisposed to the condition, but have no doubt as to the value of a cotton-wool pad and bandage as the essential treatment. I am, Sir, yours faithfully,

Lancaster, Sept. 11th, 1914. W. H. C.

Obituary.

JOHN TANNER, M.A., M.D. ST. AND., M.R.C.P. EDIN., M.R.C.S. ENG., L.S.A., L.F.P.S. GLASG., &c.

Dr. John Tanner died in London recently at the age of 79. He took the diploma of L.F.P.S. Glasg. and L.M. in 1860, the L.S.A. in the same year, the M.R.C.S. Eng. in 1861, and graduated as M.D. at St. Andrews University in the following year. In 1869 he became M.R.C.P. Edin. He was a Past-Master of the Barber-Surgeons Company, and physician to the Royal Society of Musicians. He was educated at Guy's Hospital and at Paris. He had held the positions of deputy medical officer to the Horsemonger-lane Gaol, assistant physician to the Metropolitan Free Hospital, and medical officer of the Royal South London Dispensary. Thirty-five years ago he was also physician for the diseases of women and children at Farringdon General Dispensary, obstetric physician to the Lying-in Charity, Holborn, and physician to the Rev. C. H. Spurgeon's Metropolitan College and the South London Society of Jews. He was the author of "On Practical Midwifery and Obstetrics," and contributed papers to the medical journals on psoriasis, hysterical aphonia, and hysterical vomiting.

ROBERT HAMILTON, F.R.C.S. ENG., L.S.A.

THE death of Mr. Robert Hamilton, late of Liverpool, occurred at the beginning of the month in Ireland in his eighty-eighth year. He had lived in retirement for 20 years, but his long practice and services in the Liverpool council will be recalled by many old residents in Liverpool. When he was chairman of the health committee the present city fever hospitals were planned and built, and the Royal Southern Hospital, of which he was senior surgeon, owes much to him. In his surgical wards and operations he was an energetic supporter of Lister's teaching. He held the appointment of honorary assistant surgeon to the Liverpool Eye and Ear Infirmary in 1854, and in 1861 he became F.R.C.S. Eng. by examination, having taken the membership 12 years earlier. He also held the position of honorary surgeon to the Liverpool Northern Dispensary and was a Fellow of the Royal Medical and Chirurgical Society. He contributed to the medical press papers on the Employment of Tannic Acid in Some Diseases of the Eye and Eyelids, on Carbolic Acid in Surgery, and on the After-treatment of Large Amputations.

GEORGE BORLASE HICKS, L.R.C.P. EDIN., M.R.C.S. ENG., L.M.

THE late Mr. Hicks came of an old Cornish family, to which the famous Hicks Pasha belonged, and was born near Exeter in 1828. Coming to London, he acted as assistant from 1848 to 1851 to Dr. William Cooke, of Trinity-square, a well-known and able practitioner, who founded in 1819 the Hunterian Society. Mr. Hicks afterwards studied at Charing Cross Hospital, and obtained his diploma in 1858. He practised for many years in Amhurst-road, Hackney, winning the esteem of a large circle of patients and friends. Two publications came from his pen, one on the treatment of epilepsy, in which he had some success, and a second on the place of alcohol in health and disease. A strong, wiry man of small stature, his powers gave way very slowly to the onset of age, and the end came gradually on August 30th, in his eighty-seventh year.

Mr. Hicks had been long connected with the Hunterian Society, and had filled the office of vice-president. The jubilee of that society saw its founder, Dr. Cooke, still in office, and now when its centenary is nearly reached we lose in Mr. Hicks probably the last person who knew the founder in his active days.

CHARLES PATTON KEELE, M.R.C.S. ENG., L.S.A.

THE death occurred on August 29th of Mr. C. P. Keele at his residence, Prospect-place, Southampton, at the advanced age of 96 years. He had practically lived in Southampton all his life. He took his diplomas in 1840, after being trained at University College, London. At one time he was surgeon to the old borough gaol. In his earlier days he was a keen and experienced yachtsman. He married in Paris in August, 1854, Miss Elizabeth Leveson-Gower, who died in 1875. He leaves three sons, one of whom is a medical man at Southampton, and two married daughters.

AMITY AT THE BLACKPOOL HOSPITAL.—Our readers are familiar with the late unfortunate situation at Blackpool, to which we have referred on several occasions. The dispute is now happily a thing of the past. At an adjourned meeting of supporters of the hospital held in the committee room of the town hall on Sept. 11th Dr. L. M. McIntosh and Mr. R. H. W. Dunderdale accepted seats on the board of management, and the honorary medical staff will continue their good work. We congratulate all concerned on this settlement.

THE WAR.

FREE MEDICAL ATTENDANCE FOR THE DEPENDENTS OF MEN ON ACTIVE SERVICE.

WE have the greatest pleasure in publishing the following letter from Mr. J. A. Pease, the President of the Board of Education, which requires from us no comment, so clearly is its message expressed. We congratulate the British Medical Association and the Pharmaceutical Society upon their practical interpretation of the general desire of both professions.

To the Editor of THE LANCET.

Board of Education, S.W., 17th September, 1914.

DEAR SIR,—The public will be glad to learn that a scheme has been devised for providing wherever practicable free medical attendance with medicine and appliances to those dependents of soldiers and sailors serving with the colours whose circumstances are such as to render them not unsuitable recipients.

The scheme originated in an offer made by the British Medical Association and the Pharmaceutical Society of Great Britain, who recently informed the Government that, in view of the marked desire shown by medical men and pharmacists throughout the country to help in the present crisis, they felt justified in promising the coöperation of their professions in a scheme for providing medical attendance without charge, and medicine and appliances at cost price.

This generous offer has been gratefully accepted by the Government, who fully recognise the magnitude of the sacrifice which it will entail on the two professions, and the expenditure and labour involved on the part of the British Medical Association and the Pharmaceutical Society. I am glad to say that the Executive Committee of the Prince of Wales's Fund have decided to defray the cost of medicine and appliances supplied in connexion with the scheme, so that the benefits of the scheme will be available entirely free of cost to those for whom they are intended.

The Central Committee for the Prevention and Relief of Distress have set up the following special subcommittee to bring the scheme into operation on a properly organised and comprehensive basis; it includes representatives of the British Medical Association and of the Pharmaceutical Society, and also of the National Health Insurance Commission, a department whose experience will be helpful in bringing this scheme into operation.

Duke of Devonshire, Chairman.
Dr. C. Addison, M.P., Parliamentary Secretary of the Board of Education, Vice-Chairman.
Dr. Alfred Cox, Medical Secretary of the British Medical Association.
Mr. W. S. Glyn-Jones, M.P., Parliamentary Secretary of the Pharmaceutical Society.
Dr. J. A. MacDonald, Chairman of Council of the British Medical Association.
Dr. B. A. Richmond, Secretary of the London Panel Committee.
Mr. S. P. Vivian, Assistant Secretary of the National Health Insurance Commission (England).
Mr. J. Smith Whitaker, Deputy Chairman of the National Health Insurance Commission (England), and Member of the National Health Insurance Joint Committee.
Mr. Edmund White, President of the Pharmaceutical Society.
Mr. W. J. U. Woolcock, Secretary of the Pharmaceutical Society; with Mr. J. A. Barlow, of the Board of Education, and Mr. J. Rae, of the National Health Insurance Commission, as Joint Secretaries.

The British Medical Association and the Pharmaceutical Society are now communicating the arrangements proposed to the individual members of the professions, and are inviting their coöperation. The subcommittee will shortly make a further announcement on the subject, and will as soon as possible inform local relief committees of the names of those doctors and chemists who offer their services under the scheme and of the machinery for putting it into operation.

Any communications with regard to the scheme should be addressed to the "Secretaries of the Subcommittee on Medical Provision for Dependents of Men Serving with the Colours, Wellington House, Buckingham Gate, London, S.W.," or in the case of doctors or chemists to their respective professional associations. I am, Sir, yours faithfully,

(Signed) JOSEPH A. PEASE.

GOVERNMENT AND THE RELIEF OF DISTRESS.

The Government Committee on the Prevention and Relief of Distress Caused by the War continues to organise and advise local committees formed for the actual carrying out of the relief work rendered necessary by the situation, the Local Government Board and the Board of Education being the principal Government departments coöperating with the committee in this task. Local committees are particularly reminded that this national organisation has been formed for the purpose of dealing with distress arising out of the war and not with cases of ordinary poverty. It may be difficult to discriminate between the two in all cases, but the guardians will assist by supplying information as to their own cases. At any rate, it is not intended that the normal operations of the Poor-law authorities should be superseded, and where the guardians may rightly have stepped in temporarily to administer relief in war cases, such relief is to be kept distinct from ordinary Poor-law relief. With this excellent object in view the Local Government Board has informed guardians that money which they have spent since war began in relieving the dependents of soldiers and sailors, not before in receipt of relief, will be refunded to them out of the National Relief Fund, and that when this repayment has been made the names of those who have received such relief, and all entries identifying them, are to be erased from the guardians' records. Further, a statement in prescribed form is to be sent to all persons so relieved by the guardians to inform them of this, and to tell them that they are to regard themselves as having received assistance from the Prince of Wales's Fund and not from the Poor-law.

Local committees are reminded that it is their duty to coördinate relief agencies in their districts with a view to preventing overlapping on the one hand and the overlooking of deserving cases on the other. The supplying of work paid for by wages is referred to as the best form of relief for those whom war has thrown out of work, and in this branch of relief the Labour Exchanges are to coöperate. Pecuniary relief is not to be given to those for whom suitable work is available or, until others are provided for, to those to whom enlistment in the army, navy, or territorial forces is open.

No doubt difficulty has arisen owing to the Government Committee being insufficiently informed as to local conditions, which must necessarily change from week to week, and a lack of uniformity has been observed in the operations of local committees carrying out organisation of a complex character outside the range of their members' ordinary experience. For these reasons the committee, by circulars dated Sept. 5th, has stated that local correspondents will be selected by the Intelligence Department of the Local Government Board, who will report to the Board as to unemployment and distress in their districts, and also collect information of use to the local committees, and that experienced officers of the Local Government Board, Board of Education, and National Health Commission will be appointed to act as inspectors under the Government Committee. The latter, besides reporting to that body, will advise and assist local committees in organising relief. Further, the Local Government Board calls the attention of town and district councils to what may be done for the relief of distress and the benefit of the working classes under the Housing Acts, with special reference to the new statute which it describes as "The Housing (No. 2) Act of this Session." The idea here is to utilise any sums made available under the Act for the joint purposes of providing improved housing accommodation and of mitigating unemployment in the building trades.

The functions performed by the Board of Education in connexion with the relief of distress arising out of the war have been alluded to. These are largely concerned with the guidance of local education authorities as to the provision of meals for children, and it is to be noted that the Board of Education suggests that the organisation instituted for the benefit of children attending elementary schools may be used for the feeding of children not on the schools books if it be found desirable. It is recommended by the Board that the organisation of the provision of children's meals should be in the hands of central school canteen committees, which, if not already existing, should be appointed by the local education authorities, and should include members or representatives of the authority and of the local relief committee. The canteen committees, the Board advises, should avail themselves of the assistance of the school medical officers, and keep in close touch with the local relief committees.

Another department advising local committees is the Board of Agriculture and Fisheries, which calls attention to means which may be taken to assist workers to add to their food-supply in country districts by cultivating allotments. The suggestion is that landowners should provide land free of rent, rates, and taxes for one year, and that local committees should supply technical advice, organise a supply of seedling plants, provide a form of agreement, and otherwise take steps to assist those willing to work to provide themselves with additional food.

SANITATION AND THE RECRUIT.

Questions in the House of Commons on Sept. 14th drew attention to the accommodation provided for the mobilised Territorial Force and for recruits of the new army, and a number of statements have appeared in the press criticising the sanitary arrangements which have been made for the protection of the health of the new forces. No doubt at the moment the depôts throughout the country are overcrowded with recruits, and camps for the new army are swamped with young men unaccustomed to military life, while Territorials on coast defence duty are many of them billeted for the time being in places where their presence causes overcrowding. Such temporary inconveniences are inevitable when a nation which has committed its Government to a military policy involving the existence of a small regular army suddenly wakes up to the need for a million or so of trained soldiers. Things being as they are for the moment, it is obvious that many insanitary conditions must have arisen, but it is useless for critics to insist on the need for "well thought out schemes" and for "exact division of responsibility" when a large army is being improvised at the rate of thousands a day, when, in fact, on some individual days many more recruits have been passed into the Army and Territorial Force than are usually dealt with in a year. There will be time enough later for establishing a general system of sanitary work and supervision in which military and civil frontiers are clearly defined. At the moment, as a correspondent pithily puts it, what we want is the best kind of muddling through, and there is evidence that this is being done in many places; and as each week passes the situation ought to improve, as the Local Government and army sanitary inspections are carried out and steps are taken locally to bring civil and military authorities together to settle what is wanted. This is emphatically not the time when local authorities should decline responsibility for any work in which they could be useful, such as by doing extra scavenging where soldiers are billeted, laying new water mains, or lending isolation hospitals for infectious cases among the troops. A definite military camp is, of course, under Army control, while billeting means putting the troops on the civil population, in which case the latter must take all incidental consequences; but even in the case of camps, the civil authorities can do a great deal to help, and the line adopted by the Local Government Board and the War Office is clearly the right one—viz., to get the medical officers of health and local medical officers in charge of troops into consultation, and the necessary measures settled by the authorities on the spot. No doubt there is a dearth of expert sanitary officers on the military side, but this, again, is inevitable at the moment, and presumably the Army Medical Service will take steps to meet the deficiency. The thing to remember is that in war private conveniences are in abeyance; individuals have to put up with risks and losses and inconveniences, and so must localities and local authorities. Until there is good cause for accusing those in responsible positions of incompetence or neglect, it is right to assume that they realise the immense importance of getting sanitary conditions into a satisfactory state and are doing the best that circumstances allow.

THE WAR AND THE DRUG-SUPPLY.

The scarcity of various important drugs of continental origin is becoming more pronounced day by day, and it is quite conceivable that before the end of the war supplies of some of them will be exhausted. Even already difficulty is being experienced in the wholesale market in supplying medicinal products of German manufacture; and although no instance appears to have been reported as yet of inability to procure the small quantities of commonly prescribed German products required for immediate use in pharmacies, the scarcity in the central market must in course of time result in pharmacists being unable to replenish their depleted stocks and consequently to dispense such prescriptions as include among their ingredients any of the drugs in question. This country has hitherto been dependent almost entirely upon Germany for a large number of extremely valuable drugs, notably those complex organic compounds which in comparatively recent years have brought about great changes in the practice of prescribing. Antipyretics, analgesics, and sedatives which were relied upon by an older school of practitioners have been largely displaced by a host of newer remedies, nearly all of German origin, and the stocks of drugs of this class are naturally very low. Some idea of the relative position of the supply and demand of various drugs can be obtained from the increases in market quotations. Thus acetyl-salicylic acid is about five times the value quoted before the war; antipyrin has nearly doubled in price, as also has sulphonal; antifebrin is at least twice as dear as it was; and, in fact, most of the coal-tar products have advanced in price to a very serious extent. Chloral hydrate has trebled in value, cocaine has doubled, and salicylates are very much dearer. These are only a few examples, but something like a hundred drugs have advanced in price considerably as a direct consequence of the war. It is satisfactory to know that some of our British firms have already begun the manufacture of several chemical products hitherto obtained from Germany, and it is to be hoped that their enterprise will receive adequate encouragement. It is also understood that an English house is prepared to manufacture organic arsenic compounds, and it is not by any means improbable that before the war is over supplies of the most famous compound in this series will be procurable from an English laboratory. But the effect of the war is not felt solely in the sphere of manufactured drugs. In Belgium, Germany, and France are produced many of the most important of the vegetable drugs, and new crops of some of them were awaiting harvest when the call to arms removed labourers from the fields. Aconite, chamomiles, arnica, belladonna, digitalis, colchicum, gentian, valerian, lavender, conium, and other vegetable drugs are grown in the parts of Europe which are in or near the zone of hostilities, and consequently there is bound to be a scarcity in the supply of all of them.

THE WAR AND DISLOCATION OF PRIVATE PRACTICE.

The depletion of the staffs of the London hospitals, which has its parallel in many of the great provincial institutions, has been the subject of anxious public comment, but it has not been recognised until lately that the dislocation of private practice, which has occurred as the outcome of the mobilisation of our army, is every whit as serious. The question is how far this dislocation is necessary at the present moment. No one whatever is to blame for what was done; it was absolutely right that on mobilisation all the machinery for the defence of the country should be employed. But when the fears of an invasion of this country have definitely disappeared it is reasonable to suppose that some of the precautions against that contingency will be relaxed. The health of the population of this country is a permanent charge upon the energies of the medical profession, and when the extraordinary charge upon those energies, due to the war, is no longer urgent, as many civilian practitioners as possible should be released from their military duties. The War Office knows now the material upon which it can count, and a recall would lead to an immediate return to the conditions after mobilisation, and this could be effected with the minimum of trouble. We understand that the Executive Committee of the General Medical Council is taking notice of the matter this week, and may suggest that some central committee, formed of medical men or on which medical men would be fully represented, should assist the War Office with expert advice. The public health may suffer needlessly if a large body of medical men are kept from duties which must always be performed in order to discharge functions whose need has for the time being disappeared or has not yet arisen. But every medical man will understand that, even if he be temporarily released, he must hold himself in readiness to return to the flag. The vast task ahead of the British Army, which is suggested by all thoughtful men, whether in posts of authority or not, indicates sufficiently that every available medical man may be called upon to do his share.

SCOTTISH MILITARY GENERAL HOSPITALS.

There are four Scottish Military General Hospitals, situated the first at Aberdeen, the second at Edinburgh, and the third and fourth at Glasgow.

First Scottish General Hospital.—The mobilisation of this unit was completed in the time allowed by the scheme previously submitted to the Army Council. The officer in command is Lieutenant-Colonel P. Mitchell, Captain J. Smart and Quartermaster and Hon. Captain J. Callan being attached. On mobilisation the following physicians and surgeons form the staff. Lieutenant-Colonels: Dr. J. Marnoch, Dr. A. H. Lister, Dr. A. W. Mackintosh, and Dr. J. M. Booth. Majors: Dr. R. G. McKerrow, Dr. H. McL. W. Gray, Dr. G. Gibb, Dr. A. R. Galloway, Dr. C. H. Usher, Dr. W. R. Pirie, and Dr. D. W. Geddie. Captains: Dr. J. R. Levack, Dr. H. Peterkin, Dr. J. M. P. Crombie, Dr. A. M. Stalker, Dr. J. M. Whyte, Dr. A. Don, Dr. C. Kerr, Dr. A. P. Low, Dr. A. W. Falconer, Dr. G. H. Colt, Dr. A. Mitchell, Dr. A. McGillivray, Dr. G. M. Duncan, Dr. W. C. Souter, Dr. J. Johnston, Dr. W. Brown, and Dr. J. M. McQueen.

Second Scottish General Hospital.—During time of peace the office of this hospital is at 4, Lindsay-place, Edinburgh. Lieutenant-Colonel Sir Joseph Fayrer is in command and Captain D. J. Graham and Quartermaster and Hon. Lieutenant W. C. Baker are attached. The unit is composed of 43 non-commissioned officers and men with 66 voluntary aid detachment men enlisted on mobilisation, and when called up the nursing staff consists of a matron and 91 sisters and nurses. All are warned and ready for duty. In accordance with the scheme of mobilisation for this hospital the extensive buildings of the Craigleith poorhouse, some two miles from Edinburgh, quite in the country, in beautifully laid out grounds, have been taken over and converted into a military hospital. It commands on the north a view of the Forth and on the south a magnificent panorama of Edinburgh. On the order to mobilise the 700 odd pauper inmates were transferred to Craiglochart poorhouse, which procedure occupied three days and required the assistance of most of the permanent personnel of the unit to help in carrying out the evacuation of the poorhouse. On the fifth day of mobilisation the unit marched and took up their quarters and opened the hospital with 48 beds and 10 nurses. In connexion with the building there is a hospital for 150 beds, and these were ready for patients five days after coming in. Additional cooking accommodation was also provided. In an open space in the centre of the building a large operating theatre, dental room, and X ray room completely equipped have been built. Electric light and power have been brought into the building, and covered corridors for conveying patients from the theatre to the hospital have been erected. There are in connexion with the theatre sterilising rooms for instruments and for basins, &c., and sterile water is laid on in the theatre. A large barn has been converted into a central reception room, to which all patients are taken in the first instance and from there distributed to their wards. This room is completely equipped with stretchers, dressings, medicines, &c., suitable for out-patients and for minor surgery. In the main hospital there are a completely equipped dispensary and pathological laboratory, and adjacent to the building is a mortuary. The conservancy arrangements and supplies of hot and cold water are excellent. A large disinfector has been built in, adjoining the furnace house. A special venereal department has been organised, with separate operating room, baths, and irrigators. At some distance from the main building an isolation ward has been fitted up. In connexion with the hospital is an ambulance train for 50 lying-down cases. The personnel of this train consists of two *en suite* officers, two sisters, four nurses, and 12 Red Cross orderlies. Near the hospital on the main line a small station has been built, to which the train brings the sick and wounded, and the Red Cross ambulance service detrains them and brings them to the hospital. On mobilisation the following physicians and surgeons form the staff. Lieutenant-Colonels: Dr. J. M. Cotterill, Dr. C. W. Cathcart, Sir R. W. Philip, and Dr. F. M. Caird. Majors: Dr. W. Russell, Dr. G. A. Berry, Dr. J. G. Graham Brown, Dr. J. W. Hodsdon, Dr. G. L. Gulland, Dr. D. Wallace, C.M.G., Dr. J. D. Comrie, and Dr. F. D. Boyd, C.M.G. Captains: Dr. H. J. Stiles, Dr. R. A. Fleming, Dr. H. Alexis Thomson, Dr. H. G. Langwill, Dr. A. Miles, Dr. Harry Rainy, Dr. Logan Turner, Dr. D. C. Watson, Mr. W. Guy, Dr. W. T. Ritchie, Dr. J. W. Dowden, Dr. E. Bramwell, Mr. A. S. Skirving, C.M.G., Dr. J. G. Cattanach, Mr. G. L. Chiene, Dr. E. Matthew, Dr. W. J. Stuart, Dr. J. Eason, Mr. E. W. Scott Carmichael, and Dr. J. W. Simpson. Of these the following 18 have been called up: Lieutenant-Colonel Cotterili (medical officer in charge), Lieutenant-Colonel Cathcart, Major Wallace, Major Boyd, Major Comrie, Captain Thomson, Captain Langwill, Captain Rainy, Captain Guy, Captain Ritchie, Captain Dowden, Captain Bramwell, Captain Skirving, Captain Chiene, Captain Matthew, Captain Stuart, Captain Eason, and Captain Simpson. On Sept. 6th there were close on 300 patients in hospital, which was ready equipped for 200 more, and was expanding daily to 700 beds. During the previous four days 25 operations had been performed for hernia, varicose veins, varicocele, &c. A great deal of work in conservative dentistry has already been done, and very large numbers of soldiers and recruits are taking advantage of this department.

Third Scottish General Hospital.—During time of peace the office of this hospital is at Yorkhill-parade, Glasgow. The officer in command is Lieutenant-Colonel A. J. Hay and Major B. Riddell and Quartermaster and Hon. Major W. Lee are attached. On mobilisation the following physicians and surgeons form the staff: Lieutenant-Colonels: Dr. S. Gemmell, Dr. R. Stockman, Dr. R. Muir, and Dr. T. K. Dalziel. Majors: Dr. H. Rutherford, Dr. J. H. Nicoll, Dr. W. K. Hunter, Dr. J. M. Cowan, Dr. J. W. Downie, Dr. A. M. Ramsay, Dr. D. Macartney, and Dr. W. MacLennan. Captains: Dr. J. Laurie, Dr. R. B. Ness, Dr. J. McC. Johnston, Dr. J. Carslaw, Mr. J. Towart, Dr. J. Morton, Dr. A. A. Young, Dr. W. W. Christie, Dr. A. MacLennan, Dr. E. G. Fortune, Dr. J. C. McChire, Dr. R. Fullarton, Dr. J. Gilchrist, Dr. A. H. Edwards, Dr. M. L. Taylor, Dr. J. Gracie, Dr. L. Findlay, Dr. C. C. Cuthbert, Dr. A. W. Harrington, and Dr. J. R. C. Greenlees.

Fourth Scottish General Hospital.—During time of peace the office of this hospital is at Yorkhill-parade, Glasgow. The officer in command is Lieutenant-Colonel (Honorary Surgeon-Colonel) A. Napier, V.D., and Major D. O. MacGregor and Quartermaster and Honorary Lieutenant P. A. Conacher are attached. On mobilisation the following physicians and surgeons form the staff:—Lieutenant-Colonels: Dr. J. C. Renton, Dr. J. Barlow, and Dr. G. S. Middleton, Majors: Mr. R. H. Parry, Dr. J. H. Pringle, Dr. T. K. Monro, Dr. J. G. Andrew, Dr. J. B. McK. Anderson, Dr. A. F. Fergus, Dr. J. K. Love, and Dr. A. Young. Captains: Dr. J. Hamilton, Dr. A. N. McGregor, Dr. A. B. Kelly, Dr. A. S. Tindal, Dr. D. W. Russell, Dr. D. Lamb, Dr. J. Maclean, Dr. G. B. Buchanan, Dr. H. Walker, Dr. F. Macrae, Dr. E. Mackay, Dr. J. C. Macewan, Dr. J. D. Holmes, Dr. J. Henderson, Dr. J. R. Chalmers, Dr. A. Fraser, Mr. D. Fyfe, Dr. J. G. Tomkinson, and Dr. R. B. Carslaw,

MEDICAL CASUALTIES AT THE FRONT.

The following additional names of medical men have been announced in the lists of casualties among officers on active service:—*Killed* (in the Cameroons): T. P. Fraser, West African Medical Staff. *Wounded:* Staff-Surgeon Thomas Aubrey Smyth, H.M.S. *Pathfinder;* Captain G. R. Painton, Royal Army Medical Corps.——In the list of casualties published last week, Captain G. H. T. Brown, Royal Army Medical Corps, should read Captain T. W. Browne, Royal Army Medical Corps.

THE RELIEF OF REFUGEES.

Our Special Sanitary Commissioner, who has been making inquiries into the hygienic and general arrangements which have been madefor the reception of war refugees from the continent, writes:—

During the past few weeks the arrival of refugees from Belgium, and to a less extent France also, has grown from a mere local question and a matter of private benevolence into a great national problem. Arriving at first in driblets and disembarking for the most part at Folkestone, efforts were made to deal with them as they landed. The War Refugees Committee and other societies voluntarily constituted to help the victims of the war endeavoured to provide accommodation for them at Folkestone. But all these well-intentioned efforts were soon swamped by the magnitude of the distress with which they had to cope. Fortunately, not only the public, but the Government also, felt that the least we as a nation could do, especially to the Belgians, was to see to it that every war victim should be treated as a comrade, and a home and a warm welcome provided, more especially for his suffering wife and children. On all sides came offers of help, of hospitality, and a distracting bombardment of boxes, hampers, bundles, old and new clothes, and perishable articles of food, such as a fresh salmon, wrapped up in an old great-coat. Another parcel of old clothes had a grouse concealed in the centre and a £5 note pinned on the outside. But there was no staff to deal with all these things and no premises in which to sort and distribute them. Fortunately the General Accident, Fire, and Life Assurance Corporation not only lent a staff of 40 to 50 paid clerks, but premises situated at Aldwych, and therefore in a conveniently central position. Hardly had these offices been opened than about a thousand letters were received in a day, and the daily average soon rose to 5000. Then came the crushing official announcement that some 50,000 to 60,000 refugees might be expected in the course of ten days. No private enterprise or charity could cope with such a deluge; and it came as a relief to the whole country to hear on Sept. 9th that the Government had taken the matter in hand, availing itself, at the same time, of such organisations as already existed, notably the War Refugees Committee. Obviously no private charity could deal with a mass of people that may equal in numbers two army corps. Fortunately, the State now controls the railways, so that the transport of these refugees can be managed as if they were troops. Already Folkestone is abandoned, and the ships bringing the refugees will be for the most part directed to Tilbury. At first they will be sent to vast establishments, like empty workhouses, asylums, barracks, warehouses, any premises, in fact, that can be secured, so that the new arrivals may at least have a roof over their heads, a bed, and food. But this, it is hoped, will be purely temporary. It will render the sorting, the classification, and above all the medical examination of the refugees more easy before they are allotted to the various families who have offered to receive them as guests. There can be no doubt that such a great influx of sorely tried people from the seat of war must be accompanied with the danger of spreading disease. Not that this would make us shrink from accomplishing what is obviously our duty, and this in the most warm-hearted and generous manner possible; but for the sake of the refugees themselves, as well as to protect others, there can be no alternative to taking the best precautions possible. As matters now stand all who land from the war-affected areas, whether ordinary passengers or refugees, are cursorily and rapidly inspected by the medical officers who meet the boats. Then a more thorough examination takes place when the refugees reach their first shelter. As yet, of course, the whole organisation to meet this emergency is only just coming into existence. In a short time, however, there will probably be a good deal to say from the medical and sanitary point of view. Nevertheless, though considerable difficulties are sure to arise, profound admiration and sympathy for what the Belgians have done and suffered should make us succeed in offering them a wide hospitality.

THE EMPLOYMENT OF UNQUALIFIED DEPUTIES.—Certain medical practitioners on leaving home in connexion with duties imposed upon them by the war have left their practices in the hands of unqualified men, assistants, or dispensers, owing allegiance perhaps to distant practitioners whose supervision can only be of a perfunctory nature. The subject has been discussed at the recent executive meeting of the General Medical Council, and the clear letter which has been sent from the Council to the practitioners concerned is published in our correspondence columns. It cannot be too strongly said that there is no justification for entrusting civil practice to unqualified persons, and that any practitioner who does so incurs the gravest responsibilities. That such irregular conduct is quite unnecessary is proved to us by an inquiry into the experiences of the Scottish Medical Service Emergency Committee. This committee was constituted for the purpose of assisting to meet the immediate difficulties, in regard to medical practice among the civil population, arising from the departure of practitioners summoned to take up military duty. It is understood that some 300 Scottish practitioners have been thus called away from their practices, and more are liable to be summoned at short notice. In large towns these difficulties are little felt, for the practitioners remaining have willingly undertaken to attend to the work and to safeguard the interests of their absent colleagues. But in smaller places and in rural districts such friendly arrangements are less easily made. The committee, which was constituted in the third week in August, has received communications from medical practitioners in Scotland desirous either of obtaining or offering professional help in the circumstances above indicated, with the result that more satisfactory applications for employment have been received than vacancies notified. It is clear that medical men, either by local coöperation, by use of the ordinary agencies for the supply of qualified assistance, or by the intervention of committees working on the lines of the Scottish Medical Service Emergency Committee, can obtain qualified locum tenents, so that there is no excuse for the commission of the serious professional irregularity of employing unregistered persons to attend to their practices.

THE CHOLERA CORPS.—With regard to the proposed Cholera Corps Service with the British or Russian Red Cross, Dr. White Robertson reports that up to date 17 doctors, 42 nurses, and 3 cooks have applied. The suggestion is, with a view to saving expense, that these be trained in advance in units of one doctor and two nurses and enrolled and despatched as occasion arises. So far, however, no reply to the application has been received from the British Red Cross Society.

A CANADIAN HOSPITAL.—The Canadian War Association has arranged to equip and maintain a hospital of 50 beds for 12 months. Sir William Osler and Mr. Donald Armour have taken charge of the organisation. The hospital, the "Queen's Canadian Military Hospital," will be under the control of the War Office, and may be enlarged to 100 beds if necessary. The equipment and maintenance will require about £20,000, and funds are needed for the general work. Subscriptions can be sent to the honorary treasurer, Mr. G. C. Cassels, Bank of Montreal, 47, Threadneedle-street, London, E.C., and general inquiries should be made from Mr. J. G. Colmer, C.M.G., Westminster Palace Hotel, Victoria-street, London, S.W.

THE National Indian Association appeals for clothing and hospital comforts for the use of the Indian troops in the field. Any contributions, either in the form of clothes or money, should be sent to Miss Beck, honorary secretary, 21, Cromwell-road, London, S.W., the address of the Educational Adviser to Indian Students and of the National Indian Association.

THE UNIVERSITY OF BIRMINGHAM AND THE WAR.—At a special meeting of the Council of the University held on Sept. 4th the following resolutions were unanimously adopted:—

> 1. That the University will as far as possible continue its work for the benefit of those students who are prevented from undertaking active service in the army or navy, but that the University's advice to members of the staff, students, laboratory and other assistants, and college servants, who are of suitable age and physically fit, is that they should enlist and serve their country. The students who propose to enlist should consult the Vice-Principal or the Dean of the Faculty of Medicine, and (if minors) should obtain the written consent of their parents or guardians before sending in their applications.
>
> 2. That, with a view to encouraging enlistment, the University undertakes to allow leave of absence to any of the above-mentioned persons during their naval or military service; that they be reinstated on their return with no loss of position or emoluments consequent on their enforced absence; that the Council pay them (or such other person or persons as they may appoint) such sums as with the pay and allowances they receive from the Government will make up their full salary or wages; and that students shall be entitled to postpone any scholarships or other aids which they may hold, and, where possible, may be allowed to shorten the time of attendance at lectures necessary for a degree, without, however, the remission of any essential requirements in respect of examinations prescribed for their course.

3RD RESERVE EAST ANGLIAN FIELD AMBULANCE.—Last week we published a letter from the Acting Officer Commanding 3rd E.A.F.A. Home Service, stating that medical men were required to complete the establishment of this unit. We now learn that there are several vacancies in the 3rd Reserve East Anglian Field Ambulance, and information as to pay, training, service, &c., may be obtained from the Officer Commanding, Drill Hall, Walthamstow.

THE British Red Cross Society and St. John Ambulance Association are in immediate need of further funds, and ask us to further their appeal for generous support. Subscriptions should be sent to Lord Rothschild, Devonshire House, Piccadilly, London, W., and are acknowledged daily in the *Times*.

THE WOMEN'S HOSPITAL UNIT.—A women's hospital unit left on Tuesday morning last to take charge of a hospital which has come into being in Claridge's Hotel, Paris. The unit consisted of women surgeons, anæsthetists, dressers, a staff of trained nurses, and some male orderlies, and is under the auspices of the St. John Ambulance Association. The unit was organised by Dr. Louisa Garrett Anderson, Dr. Hazel H. Cuthbert, Dr. Flora Murray, and Dr. Louisa Woodcock.

IN the list of the medical and surgical staff of the First Eastern General Hospital which appeared in last week's LANCET the name of Dr. J. Gutch should have been included among those of the rank of captain.

THE NATIONAL RELIEF FUND.

SUBSCRIBE to the Prince of Wales's National Relief Fund.

To H.R.H. THE PRINCE OF WALES,
BUCKINGHAM PALACE, LONDON.

I beg to enclose £ s. d. as a donation to the National Relief Fund.

Name ____________________

Address ____________________

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The envelope containing this coupon need not be stamped.

Medical News.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS AND SURGEONS OF ENGLAND.—At the special examination in Practical Pharmacy held on Sept. 10th, the following candidates were approved.

Lindsey Willett Batten, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; William Herbert Blakemore, Manchester University; Frank Bocquet Bull, Guy's Hospital; Ahmed Tayel Dabbous, Liverpool University; Richard Irving Dacre, Bristol University; Thomas William David, John Kenyon Davies, and Cuthbert Lindsay Emmerson, St. Bartholomew's Hospital; James Butler Fairclough, Leeds University and Guy's Hospital; Cecil Cantilupe Harrison, B.A. Cantab., Cambridge University and St. Mary's Hospital; Geoffrey William King, Guy's Hospital; James Stuart Leslie, London Hospital; George Samuel Bousfield Long, Guy's Hospital; William Kenneth Armstrong Richards, Bristol University; John Douglas Rutherford, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; John Hunter Stewart, University College Hospital; Cuthbert Shaw-Crisp, St. Mary's Hospital; and William Godfried Lorenz Wambeek, Middlesex Hospital.

SOCIETY OF APOTHECARIES OF LONDON.—At examinations held recently the following candidates passed in the subjects indicated:—

Surgery.—H. Dudley (Sections I. and II.), University College Hospital; R. J. Hearn (Sections I. and II.), Cambridge and Guy's Hospital; A. R. Jennings (Section II.), St. Bartholomew's Hospital; W. M. Lansdale (Sections I. and II.), Guy's Hospital; R. H. Leigh (Sections I. and II.), L. E. Pimm (Sections I. and II.), and R. V. Powell (Sections (I. and II.), King's College Hospital; and C. J. B. Way (Sections I. and II.), Middlesex Hospital.

Medicine.—D. Aucutt (Section II.), King's College Hospital; J. C. P. Bayley (Section I.), Manchester; P. H. Burton (Section II.), London Hospital; C. H. Fischell (Section I.), Middlesex Hospital; R. J. Hearn (Section II.), Cambridge and Guy's Hospital; W. M. Lansdale (Sections I. and II.), Guy's Hospital; R. H. Leigh (Sections I. and II.) and R. V. Powell (Sections I. and II.), King's College Hospital; and C. J. B. Way (Sections I. and II.), Middlesex Hospital.

Forensic Medicine.—H. H. Fairfax, Charing Cross Hospital; C. H. Fischell, Middlesex Hospital; W. M. Lansdale, Guy's Hospital; R. H. Leigh and R. V. Powell, King's College Hospital; and C. J. B. Way, Middlesex Hospital.

Midwifery.—C. H. Fischell, Middlesex Hospital; W. M. Lansdale, Guy's Hospital; R. H. Leigh, King's College Hospital; G. D. Newton, Durham; R. V. Powell, King's College Hospital; and C. J. B. Way, Middlesex Hospital.

The Diploma of the Society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery:—D. Aucutt, H. Dudley, R. J. Hearn, A. R. Jennings, W. M. Lansdale, R. H. Leigh, G. D. Newton, L. E. Pimm, R. V. Powell, and C. J. B. Way.

DONATIONS AND BEQUESTS.—The late Mr. Brownrigg Pattinson, of Applethwaite, Westmorland, left large bequests for charity, including £2000 each to Kendal Memorial Hospital, Meathop Sanatorium, and the Orphans' Home, Kendal.

GRESHAM LECTURES, 1914.—Four lectures will be delivered on Heredity, on Tuesday, Oct. 6th; Wednesday, Oct. 7th; Thursday, Oct. 8th; and Friday, Oct. 9th, by Dr. F. M. Sandwith, Gresham Professor of Physic. The lectures will be delivered at Gresham College, Basinghall-street, E.C.; they are free to the public, and will begin each evening at 6 o'clock.

ST. MARY'S HOSPITAL MEDICAL SCHOOL.—The work of the school will be carried on without interruption, and all courses of instruction in preliminary, intermediate, and final subjects will begin on Oct. 1st as arranged. The examination for entrance scholarships will be held on Sept. 21st-23rd. Owing to the European war and the absence of certain members of the staff and senior students at the front, the presentation of prizes by Sir Philip Magnus, M.P., announced for October has been postponed.

MIDDLESEX HOSPITAL MEDICAL SCHOOL.—The opening of the winter session 1914-15 will take place as usual on Thursday, Oct. 1st, at 3 P.M., when an address will be given by Dr. C. Hubert Bond and the prizes for the past year will be distributed by Sir John Bland-Sutton in the museum which forms part of the New Institute of Pathology. Owing to the war no formal invitations will be issued, but all who are interested in the hospital and medical school are cordially invited to be present. The annual dinner has been postponed.

THE Huxley Memorial lecture on "Recent Advances in Science and their Bearing on Medicine and Surgery," by Sir Ronald Ross, K.C.B., F.R.S., was to be delivered on Thursday, Oct. 1st, but the delivery has now been postponed to Monday, Nov. 2nd. It will be given in the Out-patients' Hall of Charing Cross Hospital at 3 P.M., and will be open to all members of the profession.

THE LATE DR. W. B. M'QUITTY.—On Sept. 6th, in St. Jude's Parish Church, Belfast, the Lord Bishop of Down and Connor and Dromore dedicated a magnificent three-light memorial window which has been erected by Mr. James M'Quitty to the memory of his deceased sister and two brothers, one of whom was the late Dr. M'Quitty.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Parliament and the War.

PARLIAMENT has been sitting this week for the purpose of passing various emergency measures required by the war, and for completing the arrangements for bringing the session to an end.

HOUSE OF COMMONS.

WEDNESDAY, SEPT. 9TH.

National Insurance (Navy and Army) Bill.

Mr. WEDGWOOD BENN, in asking leave to introduce a Bill "to amend Section 46 of the National Insurance Act in respect of certain officers, warrant officers, and soldiers," said that its effect would be to permit men enlisting in the new army to be treated in the same way as Territorials who were in employment were treated. If insured before they could continue to be insured, and if not insured before enlistment they need not become insured unless they wished to do so. The Bill also provided that officers who took commissions in the new army might, if already in insurance, continue in insurance.

Mr. WORTHINGTON EVANS remarked that a good many of the men in the new army might be employed persons for the first time. As they would be joining after 16 years of age they would only be entitled to reduced benefits for their payments. It would be quite easy to provide that they would be entitled to be deemed to have joined within 18 months of the passing of the National Insurance Act.

Mr. BOOTH thought that Approved Societies could not be asked to take these new members and give them benefits to which in the ordinary course they would not be entitled. The Approved Societies could not take these new members on in any number unless the Government gave some assistance.

Leave having been granted, the Bill was brought in and read a first time.

THURSDAY, SEPT. 10TH.

Territorials and Vaccination.

Mr. CHANCELLOR asked the Under Secretary of State for War whether he was aware that, on objecting to be vaccinated, a Territorial belonging to the 24th County of London regiment was recently court-martialled for disobeying a battalion order; and whether he would take steps to prevent pressure of this kind from being applied to deprive Territorial recruits of the exemption to what they were by law entitled.—Mr. TENNANT answered: I am not aware of the circumstances mentioned. On the other part of the question I have nothing to add to my previous reply on the subject.

Antityphoid Inoculation.

Mr. CHANCELLOR asked the Under Secretary of State for War whether in view of the fact that typhoid was a disease due to insanitation and preventable by proper sanitary measures, that antityphoid inoculation produced illness which disabled men for days and would therefore weaken our forces, that many men objected to being inoculated, whilst medical opinion was divided as to its value, he would refrain from enforcing it upon unwilling soldiers, thus leaving them fit for their duties in the field.—Mr. TENNANT said in reply: The honourable Member is under a misapprehension. Antityphoid inoculation, whilst encouraged on account of its undoubtedly immense value, is not compulsory in the British Army.

TUESDAY, SEPT. 15TH.

Panel Chemists and Increased Price of Drugs.

Mr. CHARLES PRICE asked the honourable Member for St. George's-in-the-East, as representing the National Insurance

Commissioners, whether he was aware that the war had created a shortage in the supply of upwards of 100 drugs, preparations, and appliances in common use, with consequent great increase in the cost price; that a schedule including only 15 simple drugs had been issued by the Insurance Commissioners with a scheme for making additional payments to panel chemists who were in agreement to supply every demand at drug tariff rates to Insurance Committees; and that Scottish panel chemists had made representations to the Insurance Commissioners that the schedule was totally inadequate and the scheme for increased payment impracticable and illusory; and would he sanction the immediate acceptance by the Scottish Insurance Commissioners of the plan of a special war tariff for drugs and appliances submitted on behalf of the Scottish panel chemists by the Pharmaceutical Standing Committee of Scotland or otherwise secure immediate relief for panel chemists who were suffering hardship from being compelled to continue supplying at much less than cost price.—Mr. Wedgwood Benn said in reply: The panel chemists are legally bound to supply drugs and medicines at the tariff prices up to the end of the year; but the Government, recognising that the increase in the cost of certain important classes of drugs would involve hardships to the chemists if they were held strictly to their agreements, took action some weeks ago, and an arrangement has been made after consultation with the Pharmaceutical Society of Great Britain under which the chemists will receive some additional payment over and above the tariff rate in the case of certain drugs which are used on a large scale, and which the Insurance Commissioners were satisfied had increased considerably in price in consequence of the war. This concession was made as an act of grace, and it must not be assumed that the Government can find means of making good the whole of any losses which chemists may suffer as a result of the war in common with other classes of the community. A representation of the nature described in my honourable friend's question has been received, and is now under consideration. The matter is highly complicated and difficult, and in the present state of the information in the possession of the Government it is not possible to say what course may ultimately prove to be the most equitable in all the circumstances.

Territorial Camps and Public Health.

Sir Ivor Herbert asked the Under Secretary for War whether his attention had been drawn to the danger to the public health caused by the condition of some Territorial camping-grounds; and whether he had any statement to make thereon.—Mr. Tennant answered: The War Office has been in constant communication with the Local Government Board as to the precautions necessary in connexion with the aggregation of troops, prisoners, and refugees in camps and other places, and on August 31st the Board's medical officer sent a circular letter to the medical officers of health of all sanitary districts inviting them, if there were troops in their districts, to coöperate with the military medical authorities in all sanitary matters connected with the troops. The War Office sent copies of this circular to the general officers commanding-in-chief of all military districts asking these to do all in their power to maintain thorough sanitary supervision. Inspectors of the Local Government Board are now visiting various districts in which troops are congregated, conferring with the military and civil medical authorities, and reporting to the Board on the arrangements made. There appears to be no evidence at present that the condition of any Territorial camping-ground is such as to endanger the public health. If my honourable and gallant friend has such information perhaps he would communicate it to the War Office. Inspections could thus be made and we should be glad to make inquiry, and I am assured we shall have the assistance of the Local Government Board in any inquiry we institute.

Army Medical Officers.

Mr. Bridgeman asked the Financial Secretary to the War Office whether he had received representations of the sense of injustice amongst army medical officers on account of the bounty of £60 being given to medical officers who now joined for the first time and refused to those who had served regularly with Territorial forces; whether he would give the reason for this inequality of treatment; and whether he would reconsider the decision.—Mr. H. Baker replied: I am afraid that I cannot add to the answer which was given on August 27th last.

The Eyesight of Recruits.

Mr. Grant asked the Under Secretary for War whether he would consider some relaxation of the tests for eyesight of recruits, so that the wearing of glasses might not wholly debar men from joining His Majesty's army.—Mr. Tennant answered: This has been considered, but the Army Council have not seen their way so far to grant any relaxation.

Wednesday, Sept. 16th.

Medical Men as Volunteers.

Mr. Stewart asked the Under Secretary of State for War what the prospects as to getting appointments were for medical men who had volunteered for service and had been accepted and medically examined by the War Office in August, as there were cases where doctors had, on being accepted, resigned all professional work and found themselves at the moment without either position or income pending the final acceptance of their services by the War Office.—Mr. Tennant said in reply: About 70 per cent. of some 900 who applied have been employed. I cannot say if or when the remainder will be called upon, but it was made clear to all these gentlemen that their acceptance for service, should they be required, did not place them under any obligation to relinquish their ordinary appointments until actually called upon to serve.

Drugs for Military Hospitals.

Mr. Douglas Hall asked the Financial Secretary to the War Office whether the principal medical officers of military hospitals could be empowered to purchase drugs and surgical appliances locally when urgently needed, in consequence of the large concentration of troops in certain districts, without having to requisition for them.—Mr. H. Baker replied: By existing regulations this is already authorised in urgent circumstances which do not admit of the usual procedure of requisition.

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to The Lancet *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

Burrows, Arthur, M.D.Lond., has been appointed Radiologist to the Manchester and District Radium Institute, the Royal Infirmary, Manchester.

Clarke, A. I., L.R.C.P. & S. Edin., L.R.F.P.S. Glasg., has been appointed Assistant Medical Officer to the Infirmary, Bagthorpe, Nottingham.

Cookson, Henry Anstey, M.B., Ch.B. Edin., has been appointed House Surgeon to the Torbay Hospital, Torquay.

Gordon. J., L.R.C.P. Irel., F.R.C.S. Irel., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Ballyshannon District of the county of Donegal.

Hamilton, G., M.B., B.S.Lond., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Ashton-under-Lyne District of the county of Lancaster.

Hichens, William, L R.C.P. Lond., M.R.C.S., has been appointed District Medical Officer by the Redruth (Cornwall) Board of Guardians.

Kelly, G., M.B., B.S.R.U.I., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Belleek District of the county of Fermanagh.

Rivers, William Gregory, M.B., Ch.B. Edin., has heeen appointed Senior Medical Officer and Deputy Superintendent to the Cornwall County Asylum, Bodmin.

Sylvester, H. M., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Leiston District of the county of Suffolk.

Warnock, A. H. T., L.R.C.P., L.R.C.S. Irel., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Trillick District of the county of Tyrone.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

Ashton-under-Lyne District Infirmary and Children's Hospital.—Senior House Surgeon. Salary £120 per annum, with board, residence, and laundry.

Banbury, Horton Infirmary.—House Surgeon. Salary £120 per annum, with board and residence.

Barnstaple, North Devon Infirmary.—House Surgeon. Salary £100 per annum, with board, residence, and washing.

Belgrave Hospital for Children, Clapham-road, S.W.—House Surgeon and House Physician for six months. Salary at rate of £75 per annum, each with board, residence, and washing.

Birkenhead Borough Hospital.—Junior House Surgeon. Salary £100 per annum, with board and laundry.

Birmingham City Asylum, Rubery-hill.—Junior Assistant Medical Officer. Salary £200 per annum, with apartments, board, laundry, &c.

Birmingham City Education Committee.—Temporary School Medical Officer. Salary at rate of £500 per annum. Also Assistant School Medical Officer. Salary £300 per annum.

Birmingham, City Fever Hospital, Little Bromwich.—Assistant Medical Officer. Salary £200 per annum, with board, residence, and laundry.

BIRMINGHAM AND MIDLAND HOSPITAL FOR SKIN AND URINARY DISEASES.—Clinical Assistant for three months, afternoon attendance only. Salary at rate of 52 guineas per annum.

BIRMINGHAM UNION.—DUDLEY-ROAD INFIRMARY: First Assistant Medical Officer, Second Assistant Medical Officer, and Fourth Assistant Medical Officer. Salaries at rate of £225, £180, and £160 per annum respectively. ERDINGTON INFIRMARY AND COTTAGE HOMES: Assistant Medical Officer. Salary at rate of £200 per annum. SELLY OAK INFIRMARY: Assistant Medical Officer. Salary at rate of £180 per annum. Apartments, rations, laundry, and attendance in each case.

BIRMINGHAM, YARDLEY-ROAD SANATORIUM AND ANTI-TUBERCULOSIS CENTRE.—Third Assistant Medical Officer. Salary £200 per annum, with board and residence.

BODMIN, CORNWALL COUNTY ASYLUM.—Junior Assistant Medical Officer. Salary £225 per annum, with quarters, board, laundry, and attendance.

BURNLEY, VICTORIA HOSPITAL.—Second House Surgeon. Salary £135 per annum, with residence, board, and washing.

BUXTON, DERBYSHIRE, DEVONSHIRE HOSPITAL.—Assistant House Physician for six months. Salary £100 per annum, with apartments, board, and laundry.

CAMBERWELL INFIRMARY.—Assistant Medical Officer. Salary £190 per annum, with apartments, board, and washing.

CANTERBURY, KENT COUNTY ASYLUM, Chartham.—Junior Assistant Third Medical Officer, unmarried. Salary £250 per annum, with apartments, lighting, heating, attendance, laundry, &c.

CARDIFF. KING EDWARD VII.'S HOSPITAL.—House Surgeon for Ophthalmic and Ear, Nose, and Throat Departments. Salary £100 per annum, with board, residence, and laundry. Also Two House Surgeons for six months. Salary at rate of £100 per annum, with board, residence, and laundry.

CARSHALTON, SURREY, QUEEN MARY'S HOSPITAL FOR CHILDREN.—Assistant Medical Officers. Salary at rate of £250 per annum, with board, lodging, and washing.

CHELTENHAM GENERAL HOSPITAL.—House Physician and House Surgeon, unmarried. Salary £100 per annum each, with board, lodging, and washing.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—House Physician for six months. Salary at rate of £75 per annum, with board, residence, and washing.

COLCHESTER, ESSEX COUNTY HOSPITAL.—House Surgeon. Salary £100 per annum, with board, residence, and washing.

DERBY COUNTY ASYLUM, Mickleover, Derby.—Junior Assistant Medical Officer. Salary £200 per annum, with board, lodging, and washing.

DERBY COUNTY BOROUGH EDUCATION COMMITTEE.—Temporary School Medical Officer. Salary £300 per annum.

DERBY, DERBYSHIRE EDUCATION COMMITTEE.—Temporary Assistant School Medical Officer. Salary £300 per annum.

DERBY, DERBYSHIRE HOSPITAL FOR SICK CHILDREN.—Female Resident Medical Officer. Salary £80 per annum.

DORSET COUNTY COUNCIL.—Assistant County Medical Officer of Health. Salary at rate of £250 per annum.

DUNDEE ROYAL INFIRMARY.—Three Resident Medical Officers. Salary at rate of £40 per annum, with board, lodging, and laundry.

DURHAM COUNTY COUNCIL.—Assistant Tuberculosis Medical Officer. Salary £350 per annum.

EDMONTON INFIRMARY.—Second Assistant Medical Officer, unmarried. Salary £140 per annum, with residential allowances.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, S.E.—House Surgeon for six months and House Physician for four months. Salaries at rate of £75 per annum, with board, residence, and washing. Also Clinical Assistants in Out-patient Departments.

GRANGE-OVER-SANDS, WESTMORLAND SANATORIUM, Meathop.—Senior Assistant Medical Officer. Salary £200 per annum, with apartments, board, and laundry.

GREAT YARMOUTH HOSPITAL.—House Surgeon, unmarried. Salary £140 per annum, with board, lodging, and washing.

HALIFAX ROYAL INFIRMARY.—Second and Third House Surgeons, both unmarried. Salaries £120 and £100 per annum respectively, with residence, board, and washing.

HAMPSHIRE COUNTY COUNCIL.—Three Assistant County Medical Officers of Health. Salary £300 per annum.

HULL ROYAL INFIRMARY.—Senior House Surgeon, unmarried. Salary £150 per annum, with board and apartments. Also Assistant House Surgeon. Salary at rate of £100 per annum, with board and lodging.

HULL, VICTORIA CHILDREN'S HOSPITAL, Park-street.—Female Resident House Surgeon. Salary £60 per annum, with board and laundry.

ILFORD URBAN DISTRICT COUNCIL.—Medical Officer of Health, School Medical Officer, and Medical Superintendent of the Infectious Diseases Hospital. Salary £525 per annum.

JOHANNESBURG, SOUTH AFRICAN INSTITUTE FOR MEDICAL RESEARCH.—Superintendent of Routine Division. Salary £700 per annum.

KING EDWARD MEMORIAL HOSPITAL, Ealing, W.—Resident Medical Officer for six months. Salary at rate of £80 per annum, with board, residence, and laundry.

KING'S LYNN, WEST NORFOLK AND LYNN HOSPITAL.—House Surgeon. Salary £150 per annum, with residence, board, and washing.

LEEDS PUBLIC DISPENSARY.—Two Resident Medical Officers. Salaries £130 per annum, with board, residence, and laundry.

LIVERPOOL INFIRMARY FOR CHILDREN.—Resident House Physician for six months. Salary £30, with board and lodging.

MAIDSTONE, KENT COUNTY ASYLUM.—Second Assistant Medical Officer, unmarried. Salary £280 per annum, with board, quarters, attendance, washing, &c.

MAIDSTONE, WEST KENT GENERAL HOSPITAL.—Assistant House Surgeon, unmarried. Salary £100 per annum, with board, lodging, &c.

MANCHESTER COUNTY ASYLUM, Prestwich.—Assistant Medical Officer, unmarried. Salary £250 per annum, with board, apartments, attendance, and washing.

MANCHESTER, HULME DISPENSARY, Dale-street, Stretford-road.—House Surgeon. Salary £180 per annum, with apartments, attendance, coal, and gas.

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN, Park-place, Cheetham Hill-road.—House Surgeon. Salary £120 per annum, with apartments and board.

MANCHESTER ROYAL EYE HOSPITAL.—Junior House Surgeon. Salary £80 per annum, with residence, board, and washing.

MANCHESTER ROYAL INFIRMARY.—Medical Officer for Out-Patients and Accidents, and Assistant Medical Officer for Convalescent Hospital, Cheadle, both for six months. Salaries at rate of £100 and £80 per annum respectively. Board and residence in each case. Also Three House Physicians for six months. Salary £20, with board and residence. Also Four Junior House Surgeons. Board and residence provided.

MERTHYR TYDFIL COUNTY BOROUGH.—Assistant School Medical Officer. Salary £300 per annum.

MIDDLESBROUGH, NORTH RIDING INFIRMARY.—Senior House Surgeon for six months. Salary at rate of £100 per annum, with board, apartments, and laundry.

MIDDLESEX COUNTY ASYLUM, Napsbury, near St. Albans.—Temporary Assistant Medical Officer. Salary 5 guineas per week, with board, lodging, washing, and attendance.

MILLER GENERAL HOSPITAL FOR SOUTH-EAST LONDON, Greenwich-road, S.E.—Resident Medical Officer and Junior House Surgeon. Salaries £150 and £85 per annum respectively, each with board, residence, and laundry.

NEWPORT (MON.), ROYAL GWENT HOSPITAL.—Resident Medical Officer. Salary for first six months at rate of £100 per annum, second six months £125, and third six months £150, with board, residence, and laundry.

NORTHAMPTONSHIRE COUNTY COUNCIL EDUCATION COMMITTEE.—Temporary Assistant School Medical Officer. Salary £25 per month.

NORWICH, NORFOLK AND NORWICH HOSPITAL.—House Physician. Salary £80 per annum. Also Casualty House Surgeon for six months. Salary at rate of £60 per annum, with board, lodging, and washing in each case.

NORWICH, CITY OF.—Assistant Medical Officer of Health. Salary £200 per annum, with rooms, board, &c. Also Assistant School Medical Officer. Salary £300 per annum.

NOTTINGHAM CITY ASYLUM.—Junior Assistant Medical Officer, unmarried. Salary £200 per annum, with board, apartments, and laundry.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon, unmarried. Salary £180 per annum, with apartments (not board), attendance, light, and fuel.

NOTTINGHAM GENERAL HOSPITAL.—Senior House Physician. Salary £120 per annum, with board, residence, and laundry.

PLAISTOW FEVER HOSPITAL, London, E.—Female Second Assistant Medical Officer for temporary duty. Salary at rate of £100 per annum, with rooms and all found.

PRESTON ROYAL INFIRMARY.—Resident Medical and Surgical Officer. Also Assistant Resident Medical and Surgical Officer. Salaries £150 and £120 per annum respectively, with board, residence, and laundry.

RAMSGATE GENERAL HOSPITAL AND DISPENSARY.—Resident House Surgeon, unmarried. Salary £100 per annum, with board, residence, and laundry.

ROTHERHAM HOSPITAL.—Assistant House Surgeon. Salary £110 per annum, with board, lodging, and washing.

ROYAL EAR HOSPITAL, Dean-street, Soho, W.—Honorary Radiographer.

ROYAL LONDON OPHTHALMIC HOSPITAL, City-road, E.C.—Senior House Surgeon. Salary at rate of £100 per annum, with board and residence.

ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN, S.E.—Junior Resident Medical Officer. Salary at rate of £70 per annum, with board and washing.

ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN, Plaistow, E.—Assistant Resident Medical Officer. Salary at rate of £100 per annum, with board, residence, and laundry.

ST. PANCRAS.—Senior Assistant Medical Superintendent of South Infirmary, Cook's-terrace, Pancras-road, and Senior Assistant Medical Officer of the house adjacent. Salary at rate of £175 per annum, with board and apartments.

ST. PETER'S HOSPITAL FOR STONE, &C., Henrietta-street, Covent Garden, W.C.—Junior House Surgeon for six months. Salary at rate of £75 per annum, with board, lodging, and washing.

SALFORD ROYAL HOSPITAL.—Resident Surgical Officer. Salary at rate of £120 per annum. Also Casualty House Surgeon. Salary at rate of £100 per annum. Both for six months, with board and residence.

SALISBURY (GENERAL) INFIRMARY.—Assistant House Surgeon, unmarried. Salary £75 per annum, with apartments, board, lodging, and washing.

SAMARITAN FREE HOSPITAL FOR WOMEN, Marylebone road, N.W.—Anæsthetist. Salary £15 per annum.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Senior and Junior House Surgeons. Salaries £100 and £80 per annum respectively, with board, residence, &c.

SHEFFIELD CHILDREN'S HOSPITAL.—House Surgeon. Salary £150 per annum, with board and residence. Also House Surgeon at East End Hospital (Out-patient Department only). Salary £120 per annum, with board and residence.

SHREWSBURY, ROYAL SALOP INFIRMARY.—House Physician, unmarried. Salary at rate of £110 per annum, with board and apartments.

SOUTHAMPTON FREE EYE HOSPITAL.—House Surgeon. Salary £100 per annum, with board, lodging, and laundry.

SOUTHAMPTON, ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—House Physician. Salary £120 per annum, with rooms, board, and washing.

SOUTH SHIELDS, INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY.—Junior House Surgeon. Salary £115 per annum, with residence, board, and washing.

SUNDERLAND ROYAL INFIRMARY.—House Physician. Salary £120 per annum, with board, residence, and laundry.

SWANSEA GENERAL AND EYE HOSPITAL.—House Surgeon. Salary £125 per annum, with board, washing, and attendance.

TAUNTON, TAUNTON AND SOMERSET HOSPITAL.—House Surgeon and Assistant House Surgeon. Salaries £120 and £80 per annum respectively, with board, lodging, and laundry in each case.

TRURO, ROYAL CORNWALL INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with rooms, board, and washing.

TUNBRIDGE WELLS GENERAL HOSPITAL.—House Physician, unmarried. Salary £100 per annum, with board, residence, &c.

VICTORIA HOSPITAL FOR CHILDREN, Tite-street, Chelsea, S.W.—House Surgeon for six months. Salary £40, with board, lodging, and washing.

WALSALL AND DISTRICT HOSPITAL.—Senior House Surgeon. Salary £150 per annum, with board, residence, and laundry.

WARRINGTON INFIRMARY AND DISPENSARY.—Junior House Surgeon. Salary at rate of £120 per annum, with board, apartments, and laundry.

WARRINGTON, LANCASHIRE COUNTY ASYLUM, Winwick.—Assistant Medical Officer, unmarried. Salary £250 per annum, with board, apartments, attendance, and washing.

WEST BROMWICH AND DISTRICT HOSPITAL.—Assistant Resident House Surgeon and Anæsthetist, unmarried. Salary £100 per annum, with board, residence, and washing.

WEST HAM AND EASTERN GENERAL HOSPITAL, Stratford, E.—Senior House Physician. Salary £120 per annum. Also Junior House Physician and Junior House Surgeon. Salary £100 per annum. Board, residence, and washing provided in each case.

WEST HAM UNION INFIRMARY, Whipps Cross-road, Leytonstone, N.E.—Female Medical Officer. Salary £160 per annum, with usual residential allowances.

WESTMINSTER UNION INFIRMARY, Fulham-road, S.W.—Second Assistant Medical Officer. Salary £160 per annum, with board, residence, and washing. Also Third Assistant Medical Officer. Salary £140 per annum, with board, residence, and washing.

WHITEHAVEN AND WEST CUMBERLAND INFIRMARY.—Resident House Surgeon. Salary £150 per annum, with board, washing, and attendance.

WINSLEY SANATORIUM FOR CONSUMPTION, near Bath.—Senior Resident Medical Officer, unmarried. Salary £300 per annum, with board, residence, and laundry. Also Assistant Resident Medical Officer, unmarried. Salary £150 per annum, with board, residence, and laundry.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Resident Medical Officer for six months. Salary at rate of £125 per annum, with board, rooms, and laundry.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies for Certifying Surgeons under the Factory and Workshop Acts at Beith, in the county of Ayr; and at Hucknall Torkard, in the county of Notts.

Births, Marriages, and Deaths.

BIRTHS.

BRYDEN.—On Sept. 5th, at Elswitha Hall, Gainsborough, the wife of Captain R. A. Bryden, R.A.M.C., of a daughter.

FOSTER-BARHAM.—On August 30th, at Horton-lane, Epsom, the wife of G. Foster-Barham, M.D. Cantab., of a daughter.

HOLFORD.—On Sept. 9th, at Burton-on-Trent, the wife of Chris. Tredwell Holford, F.R.C.S. Edin., of a daughter.

MONTESOLE.—On Sept. 11th, at Cascade-avenue, Muswell Hill, N., to Dr. and Mrs. M. H. Montesole, a daughter.

TAYLOR.—On Sept. 12th, at Campden House Court, W., the wife of C. H. S. Taylor, M.D. Cantab., of a daughter.

WILSON.—On Sept. 13th, at College-crescent, Swiss Cottage, N.W., the wife of J. Clark Wilson, M.D. Edin., M.R.C.P. Lond, of a daughter.

MARRIAGES.

BARKER—DRAKE.—On Sept. 15th, Francis James Barker, M.A., M.B., C.M. Glasg., to May, youngest daughter of the late James Drake, Esq., J.P., of Yorkshire.

BAYLEY—COLMAN.—On Sept. 12th, at Holy Trinity Church, Cookham, Eric Bayley, M.D. Lond., F.R.C.S. Eng., to Margaret Colman, elder daughter of Mrs. Cbarles Hunter, of Cookham, Berks.

NABARRO—WEBSTER.—On Sept. 9th, at North Walsbam, David Nunes Nabarro, M.D. Lond., to Florence Nora, second daughter of Nathan Bell Webster, of North Walsham.

WORTH—KNIGHT-ROBINSON.—On Sept. 9th, at St. Saviour's Church, St. George's-square, S.W., Dr. Reginald Worth to Marion Catherine, youngest daughter of the late Godfrey Knight-Robinson and of Mrs. Knight-Robinson, of Woking.

DEATHS.

CLARK.—On Sept. 9th, at St. George's-road, S.W., Lieutenant-Colonel James Edward Clark, late Brigade-Surgeon, A.M.S., aged 77 years.

FEATON-FISHER.—On Sept. 12th, at Park-road, Wimbledon, William Featon-Fisher, L.R.C.P. Lond., M.R.C.S. Eng., in his 52nd year.

HAYES.—On Sept. 8th, at Fairfield Lodge, Farnham, Surrey, Surgeon-Major William Henry Hayes, late I.M.S. and Deputy Commissioner of Singbboom, Bengal, India, aged 81 years.

HOWSE.—On Sept. 15th, at The Tower House, Cudham, Kent, Sir Henry Greenway Howse, M.S., D.Sc., F.R.C.S., Consulting Surgeon, Guy's Hospital, late President of the Royal College of Surgeons of England, in his 73rd year. Funeral at St. Luke's Cemetery, Bromley Common, Saturday, the 19th, at 11 A.M. Friends please accept this, the only intimation.

MAYBURY.—On Sept. 6th, at Almeida-street, Islington, N., Horace Mansell Maybury, M.D.R.U.I., in his 67th year.

TANNER.—On Sept. 8th, at Glenmore-road, N.W., John Tanner, M.D. St. And., in his 79th year.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

During the continuance of the war the size of THE LANCET *will be curtailed. This has been necessitated primarily by the difficulty in ensuring an adequate supply of paper, but the contributions of most of our correspondents on the continent have failed, and will fail, to reach us. Many special features of* THE LANCET *have had to be sacrificed for the time, and while we ask the indulgence of our readers for this, we promise to restore them at the earliest possible opportunity.*

CLIMATE OF ST. THOMÉ AND PRINCIPÉ.

REPORTING on these Portuguese islands, situate in the Gulf of Guinea, with an area of 442 square miles and a population of 45,000, the British Consular representative writes that he met an Englishman at St. Thomé who stated that he was induced to sign a three years' agreement for employment there by being assured he was being sent to a healthy climate. One would have thought (adds the Consul) that all the world knew how unhealthy the West Coast of Africa and the islands in the Gulf of Guinea are, but the writer has met several men who signed agreements without the least knowledge of the conditions of life they would have to face. The higher situated plantations in the mountains of St. Thomé and Principé are not particularly trying for an Englishman, but the cities and low-lying lands experience a climate like that of a Turkish bath, and Englishmen who have never been in this region before would do well to make full inquiries as to the place they are going to before entering into agreements for long periods. Employers on their part could do much to minimise the cases of fever among their employees if they would advise them before leaving the United Kingdom as to the primary importance of observing certain definite rules of life on the West Coast. Although the old west-coaster, who has invalided home or buried 95 per cent. of the men who came out with him, but who happens to have been fever-proof himself, is apt to scoff at modern precautions against fever, impartial observers have noticed that, generally speaking, those people retain their health who (1) always wear a sun helmet by day, (2) never sleep without a mosquito net, and (3) take five grains of quinine regularly every morning. As the violation of these rules almost invariably brings swift and sure punishment, it is astounding that they should be so flagrantly disregarded. The consul thinks nobody should be sent out to West Africa without being recommended to read Sir Ronald Ross's book on "The Prevention of Malarial Fever."

New Government hospitals have been completed both at St. Thomé and Principé, but the one at St. Thomé lacks an efficient water-supply and that at Principé is admittedly too small.

The campaign against the tsetse-fly appears to have been continued with vigour, and hopes are entertained that the year 1914 may see the complete extermination of the fly in the Island of Principé. (The usual English names of these islands are St. Thomas and Prince's Island.)

A QUOTATION IN SEARCH OF A FATHER.

To the Editor of THE LANCET.

SIR,—Could any of your readers who are learned in mycology tell me where the following lines are to be found, and who wrote them:—

Naturae fetus mirare, sed aufuge fungos;
Namque a fungendo funere nomen habent.

I have a dim recollection of having read or heard that they were inscribed over the door of a botanical library or museum (or section thereof) somewhere, and that somewhere, Vienna. Non cuivis homini—I have never been to Vienna, and the idea of such an inscription seems improbable, though delightful. But I should be grateful for information from any quarter.

I am, Sir, yours faithfully,
EDWIN A. EADE.

United University Club, Pall Mall East, Sept. 15th, 1914.

THE DOCTORS' WIVES ASSOCIATION.

MEDICAL women and married medical men may be glad to have their attention drawn to a coöperative scheme for economical shopping which has been founded by our enterprising contemporary *The Hospital*, under the title of the Doctors' Wives Association. Full information may be obtained on application to the secretary of this association, 28 and 29, Southampton-street, Strand, London, W.C.

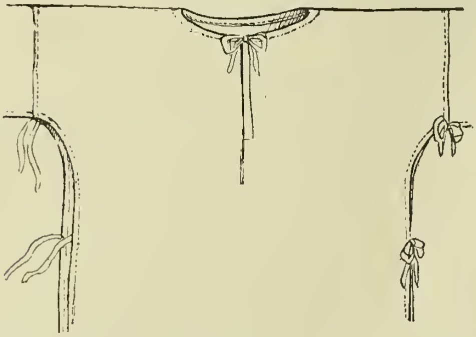
STEVENS' "CONSUMPTION CURE" AGAIN.

We thought that after the failure of the action, Stevens *v.* British Medical Association, little more would be heard of Stevens' "Consumption Cure"; but apparently the business is still being carried on, this time under the shelter of the Red Cross flag. The following advertisement has lately appeared in the agony column of *The Times*:—

> WAR.—CONSUMPTION.—Necessitous dependents of men on Active Service may have STEVENS' CONSUMPTION CURE, with the personal attention of Mr. Stevens, FREE of CHARGE.—206, Worple-road, Wimbledon.

A SHIRT OR BEDGOWN FOR THE HELPLESS.

We have inspected a nightshirt or bedgown invented by Mrs. Gunthorpe, formerly a nurse at the Middlesex Hospital, which should be of service for the helpless sick or wounded. It is very easily cut out, all from one piece, and has a circular hole for the head, while the front and back are divided on each side, the slit running under the armpit and down the inside of each sleeve, and where it is desirable and possible to convert it into a complete shirt these slits are tied together with the tapes affixed.



When it is not desirable that the shirt should reach the lumbar region the back part can be folded under the shoulders, the extreme end forming a hood if so desired. The garment is reversible and affords plenty of room, so that a cradle can be placed under it. It can be put on and removed without moving the patient. Pyjamas are also made on the same principle. The garments are made by Madame Gulley, 291, Regent-street, or the pattern can be obtained, for the shirt can be made by any one.

GAMBIA HEALTH REPORT.

According to the Blue-book for the year 1913 the estimated present population of the Colony and Protectorate of Gambia is about 153,000. In Bathurst, the capital, the death-rate—21·42 per 1000—was the lowest recorded during the last ten years. The reduced number of deaths may be attributed to some extent to the late onset of the rains and the exceptionally low rainfall. This resulted in freeing the town from the accumulation of standing water in low-lying places. Sanitary improvements and increased vigilance on the part of the sanitary authorities also helped. An endeavour was made to reduce the infantile mortality. A class of native women was formed, and a medical officer delivered simple lectures, with illustrations, on elementary dressing and midwifery. The class unfortunately was not successful owing to the members failing to attend the lectures on the ground that they had work to do and duties to perform in the Protectorate. Mr. E. A. Chartres, the senior medical officer, continued his endeavours by publishing a pamphlet dealing with the precautions to be taken regarding confinements and the rearing of infants. The number of Europeans residing in the Colony and Protectorate during the year was 173. There were 1529 vaccinations performed at Bathurst and 2480 in the Protectorate during the year. In the Protectorate, where the Travelling Commissioners are guided by special sanitary instructions, prizes are given to the cleanest village in each province. An improvement is to be found as regards sanitation in some villages, but it will be a great number of years before the subject is adequately dealt with by a people, the majority of whom are not great believers in hygiene. The Board of Health maintained its crusade against mosquitoes and did not relax its efforts to prosecute the occupiers of insanitary premises. The climate of Gambia during some months of the dry season, which lasts from November to May, is pleasant. During the remaining months, known as "the rains," the conditions are similar to those experienced on the West Coast of Africa. Although these may not be quite so severe, they are felt to be more trying owing to the greater contrast between the dry and wet periods than is the case elsewhere. During the year the highest shade temperature recorded in Bathurst was 104° F. and the lowest 57°. The rainfall was 23·68 inches, as compared with 33·99 inches in 1912. There are two hospitals, one of which is at Bathurst and the other at MacCarthy Island. In the former accommodation is found for 25 male and 17 female patients. During the year 554 in-patients and 8134 out-patients were treated, and there were 62 deaths. Four rooms are provided in addition for cases requiring isolation. The MacCarthy Island Hospital is in charge of a European medical officer from October to June. During the remainder of the year, when there is only a small population on the island, a native dispenser is in charge. There is one ward for European and three wards for native patients. Thirty-four in-patients and 1314 out-patients were treated during the year. A contagious diseases hospital, situated about two miles from Bathurst, is also maintained. There was no epidemic during the year in the colony, but small-pox was prevalent in a mild form in the Protectorate.

SOME FIRST-AID BOOKS.

Dr. Duncan Macartney's "First Aid in Accidents and Sudden Illnesses" (Glasgow: St. Andrew's Ambulance Association. 1914. Pp. 211) consists of two parts—viz., elementary instruction in anatomy and physiology and such emergency non-operative surgery as may be advantageously given in first aid by laymen. This section also contains some useful information concerning the removal of the sick and injured. In the chapter on drowning and suffocation a very useful section on rescue work in mining disasters, mainly from Mr. Kerr's "Coal Mining," has been added. In the two figures 42 and 43 on the reef knot on p. 72 it would be well to reverse one of the blocks so that the dark cord is on the same side of the picture in both cases. The blocks as they are might confuse one not already familiar with the subject.—Major R. J. Blackham, C.I.E., has prepared a useful little "Indian Catechism of First Aid" (Simla: The St. John Ambulance Association, Indian Branch. 1914. Pp. 94. Price 6 annas), so that in the absence of skilled assistance, which is rare in India, the first aid pupils may get a friend to test their knowledge for them by catechising them. A companion book, "The Indian Catechism of Home Nursing," also by Major Blackham (Calcutta: Thacker, Spink, and Co. 1914), is intended to assist the amateur nurse in the same difficulty. Both are likely to prove useful.

CENTIGRADE AND FAHRENHEIT.

To the Editor of The Lancet.

Sir,—Referring to the letter from "F." in your issue of August 8th under the above heading a much simpler way of converting degrees Centigrade into degrees Fahrenheit occurred to me many years ago, and I have brought it under the notice of not a few people who have much appreciated being able to carry out this operation without the need of pencil and paper. All that is necessary is to take the degrees Centigrade, subtract therefrom 1/10th, double the remainder, and add 32, and the answer will be the exact temperature Fahrenheit, for instance:—

18·0° C.
1·8° C.
16·2
2
32·4
32·0
64·4° F.

This may not be ingenious, but it is decidedly simple and quite accurate. I am, Sir, yours faithfully,

Manchester, August 31st, 1914. William Kirkby.

⁂ In The Lancet of Dec. 3rd, 1910, p. 1662, our industrious correspondent, "F.," published a method practically the same as Mr. Kirkby's.—Ed. L.

THE SUPPLY OF ACETYL-SALICYLIC ACID.

Messrs. Arthur H. Cox and Co., Limited, of Brighton, have forwarded to us specimens of acetyl-salicylic acid tablets which they call "coxpyrin." A supply of the drug was secured from the neutral country of Switzerland, but arrangements are being made for the manufacture of these tablets from British made acetyl-salicylic acid.

◆

Enquirer.—The K.H.P. in the title of Sir Arthur William May, K.C.B., K.H.P., R.N., whose promotion to be Knight of Grace in the Order of the Hospital of St. John of Jerusalem in England, was announced in our columns on Sept. 5th, signifies honorary physician to the King. K.H.S. signifies honorary surgeon to the King. These abbreviations are not amongst those given in the Medical Directory and some other usual works of reference.

Communications not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. T. Gray: Operations. Dr. Pritchard: Bacterial Therapy Department. Mr. B. Harman and Mr. Gibb: Diseases of the Eye.

TUESDAY.—10 A.M., Dr. Simson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Souttar: Operations. Dr. Simson: Diseases of Women. Mr. Gibb: Diseases of the Eye.

THURSDAY.—9 A.M., Dr. Bernstein: Bacterial Therapy Department. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. T. Gray: Operations. Mr. B. Harman: Diseases of the Eye.

FRIDAY.—10 A.M., Dr. Simson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Eye Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Souttar: Operations.

LONDON HOSPITAL MEDICAL COLLEGE (UNIVERSITY OF LONDON), London Hospital, Mile End-road, E.

Demonstrations in Clinical Medicine:—

MONDAY.—2.15 P.M., Dr. Wall: Pulmonary Tuberculosis. (Clinical Theatre.)

TUESDAY.—2.15 P.M., Dr. Grünbaum: Diseases of the Blood. (Clinical Theatre.)

WEDNESDAY.—2.15 P.M., Dr. Miller: Abdominal Diseases. (Out-patient Department.)

THURSDAY.—2.15 P.M., Dr. Thompson: Diseases of the Nervous System. (Clinical Theatre.)

FRIDAY.—2.15 P.M., Dr. L. Smith: Common Cardiac Conditions. (Clinical Theatre.)

SATURDAY.—10.15 A.M., Dr. Hutchison: Demonstrations on Selected Cases. (Wards or Clinical Theatre.)

Demonstrations on Selected Surgical Cases and on Cases of Interest in the Wards of the Hospital:—

MONDAY.—2 P.M., Mr. Milne.
TUESDAY.—2 P.M., Mr. Lett.
WEDNESDAY.—2 P.M., Mr. Howard.
THURSDAY.—2 P.M., Mr. Warren.
FRIDAY.—2 P.M., Mr. Walton.

THE THROAT HOSPITAL, Golden-square, W.

MONDAY.—5.15 P.M., Special Demonstration of Selected Cases.
THURSDAY.—5.15 P.M., Clinical Lecture.

ROTUNDA HOSPITAL POST-GRADUATE COURSES, Dublin.

MONDAY.—10 A.M., Obstetrical Lecture: Antepartum Hæmorrhage (continued). 11 A.M., Examination of Patients and Minor Operations.

TUESDAY.—10 A.M., Major Operations.

WEDNESDAY.—10 A.M., Obstetrical Lecture: Postpartum Hæmorrhage. 11 A.M., Examination of Patients and Minor Operations.

THURSDAY.—10 A.M., Major Operations.

FRIDAY.—10 A.M., Gynæcological Lecture: Pelvic Infection (continued). 11 A.M., Examination of Patients and Minor Operations.

For further particulars of the above Lectures, &c., see Advertisement Pages.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. I. of 1914, which was completed with the issue of June 27th, were given in THE LANCET of July 4th.

VOLUMES AND CASES.

VOLUMES for the first half of the year 1914 are now ready. Bound in cloth, gilt lettered, price 16*s.* carriage extra.

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(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Sept. 16th, 1914.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Sept. 10	29·88	SSE.	...	118	72	64	63	66	Cloudy
" 11	29·84	S.W.	0·32	86	65	60	60	62	Raining
" 12	29·89	W.	0·13	98	61	51	52	57	Fine
" 13	29·85	N.W.	0·14	105	63	50	53	54	Fine
" 14	29·63	S.W.	...	114	71	52	62	63	Overcast
" 15	29·87	W.	...	109	64	51	51	56	Fine
" 16	29·95	S.W.	...	108	66	51	53	56	Cloudy

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The Lettsomian Lectures
ON
DYSENTERY.

Delivered before the Medical Society of London, 1914,

By F. M. SANDWITH, M.D. Durh.,
F.R.C.P. Lond.,
GRESHAM PROFESSOR OF PHYSIC; LECTURER ON TROPICAL DISEASES,
ST. THOMAS'S HOSPITAL, ETC.

LECTURE III.*

BACILLARY DYSENTERY.

WHAT cannot totally be known ought not to be totally neglected, for the knowledge of a part is better than the ignorance of the whole.—Ismail ibn Ali Abu el Feda (Preface to his Geography).

Epidemic dysentery is met with in all parts of the world, particularly in times of war and famine and in crowded institutions, such as lunatic asylums and prisons. Pure cases of it are not amenable to ipecacuanha or emetine, and it is not followed by abscess of the liver. Bacillus dysenteriæ, which includes a group of nearly allied bacilli, is now known to be the cause of the disease, which is therefore termed bacillary dysentery to distinguish it from amœbic dysentery.

BACTERIOLOGY.

The bacilli of dysentery have been isolated from a number of cases of infantile diarrhœa in the United States and in South Africa (Birt), but Morgan failed to find them under similar circumstances in London. In human victims the bacilli are found in the mucous membrane of the large intestine and in the stools, especially in the accompanying mucus. The organism does not become generalised in the blood, but it has been found in the mesenteric glands and once in the spleen. Several varieties of the bacilli have been described, differing from each other in detail and particularly in their action upon sugars. The varieties are usually divided into two types; the Shiga-Kruse, which does not ferment mannite, and the Flexner or mannite-fermenting type. To these two types must be added the Bacillus dysentericus El Tor, described by Dr. Ruffer in 1909, and found then and since to be the chief cause of dysentery among pilgrims returning from Mecca to the quarantine station at El Tor on the Red Sea coast.[1] It has the characteristics of the dysentery group, but differs somewhat from all the known varieties hitherto described. Ruffer, however, allows that the name is provisional and that his bacillus may eventually be found to be identical with one of the other bacilli. I may remind you that there is a similar multiplicity of varieties of the cholera vibrio, but it seems to me absurd to write about "true" and "false" dysentery bacilli.

Experimental inoculation.—The Shiga bacillus is the commonest cause of this type of dysentery, and is the one a culture of which produced dysentery in Strong and Musgrave's criminal (see Lecture I.). Negative results have, however, usually been obtained by feeding experiments on animals, though the following three successes are mentioned by Besson.[2] Chantemesse fed guinea-pigs with bacilli and produced dysenteric lesions in their intestines; Shiga introduced a culture into a cat's stomach and found that the animal suffered from mucous diarrhœa, with bacilli in the fæces; Kazarinow, by means of an œsophageal sound, introduced quantities of culture into the intestines of rabbits, and thus produced dysenteric lesions. Inoculation of bacilli into veins or into the peritoneal cavity is rapidly fatal, and causes hyperæmia but not ulceration of the intestines. Subcutaneous inoculation of rabbits, dogs, cats, and young pigs is followed by lesions resembling human dysentery and death. The Flexner bacillus is much less pathogenic to animals than the Shiga type, but the Tor bacillus occasions in guinea-pigs and rabbits fever, diarrhœa, paralysis, and death.

Microscopical appearance.—Hewlett[2A] says:—

> The bacilli are aërobic and facultatively anaërobic. On agar a thinnish creamy growth develops; on gelatin a white growth nearly limited to the inoculation track, and without liquefaction. The colonies on a gelatin plate closely resemble those of the typhoid bacillus. On potato the growth is either thin, grey, and slightly visible, or thicker and yellowish or brownish. The colour of neutral red media is unaltered. Litmus milk first becomes faintly acid, then markedly alkaline; no clotting. Indole is generally not formed (never by the Shiga type); occasionally a trace may be detected. All strains ferment glucose with the formation of acid only; no gas; none ferment lactose. Some strains (the Flexner type) ferment mannitol with the formation of acid only, no gas; other strains (the Shiga-Kruse type) have no action on this alcohol.

Agglutination reaction.—As originally discovered by Shiga, the blood of patients suffering from bacillary dysentery agglutinates in dilutions of 1 in 10 to 1 in 100 with the particular strain which caused the infection. But the reaction only appears in severe or moderately severe cases, and not before the end of the first week of illness or even later. It may remain for several weeks after recovery, but as a method of diagnosis the agglutination test has considerable limitations.

Toxins.—Only the Shiga bacillus produces toxin when it has been grown for a month and then filtered.

Detection of the bacillus.—The routine method for detecting the bacillus is to examine a fresh stool, which, if possible, has been passed into a sterile pail and is not mixed with urine. The bacilli are most numerous during the first week of the disease and gradually disappear until the third week, when they can no longer be found. They cannot be differentiated by the microscope alone, and the suspected material must therefore be sown on agar. Dr. P. H. Bahr,[3] in Fiji, found the following method the best:—

> A platinum loopful of the blood and mucus was diluted in broth and plated out on Conradi-Drigalski plates; 8 to 10 drops of the emulsion were found sufficient for one plate. When pure mucus without contamination with fæcal matter was passed by the patient, the dysentery bacilli were on several occasions obtained in almost pure culture. Dilutions and cultivations in MacConkey's bile broth proved unsatisfactory, as the dysentery bacillus appeared to become rapidly overgrown by other organisms of the coli group. On Conradi-Drigalski medium colonies of the dysentery bacillus were recognised by their peculiar transparent blue colour. They were further distinguished by their morphological and Gram-negative characters, and, lastly, by their sugar reactions.

Dysentery bacilli cannot live for long anywhere outside the human body. They die rapidly in sunlight or in ordinary sewage or in distilled water, and experimentally they are rapidly killed off in a broth medium when bacillus coli is added to it, yet for some unknown reason they are able to cultivate themselves in the human intestine.

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* Lectures I. and II. were published in THE LANCET of Sept. 5th (p. 637), 12th (p. 683), and 19th (p. 731), 1914, respectively.

Post-mortem examination should be obtained as early as possible because putrefaction in the tropics begins immediately after death. To make cultures a loop of the large intestine should be ligatured and removed, when the interior may be washed with sterile water. The mucous surface is then cauterised with a red-hot iron rod, and a platinum loop is plunged through the surface into the subjacent tissue. Dilutions in broth can then be plated out on Conradi-Drigalski agar.

PATHOLOGICAL ANATOMY.

The character of the intestinal lesions varies as the dysentery is acute or chronic. In severe cases the mucous membrane of the colon and rectum suffers uniformly and, when ulceration is extended to the small intestine, it is the lower part of the ileum which is usually involved. The acute lesions begin on the projecting transverse folds, and extend to deeper levels; they consist of swelling and necrosis of the mucous membrane with the formation of irregular islands of a false membrane, often of a dark green colour. The ulceration depends in extent and depth upon the amount of necrosis and does not show the regular punched-out lesions of amœbic dysentery. At a necropsy soon after death there is very marked hyperæmia, but this fades in museum preparations. The intestinal contents, of course, resemble the stools before death, and usually consist of tenacious mucus with thick green liquid fæces. In the chronic disease the whole intestine is thick and hard, and islands of ulcerated mucous membrane may alternate with the pigmented, depressed scars of ulcers which are healed. Perforation and suppuration of the intestine occur but seldom.

The microscopical appearances must, of course, vary with the stage and severity of the disease. The most extensive changes are necrosis of the mucous membrane, where the epithelial cells can, perhaps, no longer be determined. The chances of recovery depend more upon the lesions being limited to the lower gut, even if the ulceration be deep, than to the involvement of the whole of the great intestine and the lower half of the small intestine in acute inflammation of a superficial character. The chief change in the submucosa is thickening from infiltration, and Dr. Bahr[3] noted that where the muscular coat remained intact no bacilli were ever found in the submucosa. Dr. S. Flexner says that the false membrane "is a close-meshed network of fibrin enclosing multinuclear, often fragmented, cells."

Bacteria are abundant in the necrosed mucous membrane, but are not so easily found in sections below it. Many careful observers refrain from determining dysentery bacilli by their morphological characters alone. In the Pretoria Yeomanry Hospital, which I helped to start, there were, in 1900–01, 3782 medical in-patients (British officers and men), among whom dysentery, with 475 cases, came second on the list of frequency. There were 13 deaths or 2·75 per cent. Amœbæ were never discovered by Dr. J. W. Washbourn and others, and in only one case was there a single hepatic abscess. It is fair to assume for various reasons that these 475 cases were all, or very nearly all, of the bacillary type.

Microscopically, the earliest stage seemed to be in the columnar cells lining Lieberkühn's crypts in the colon. Then followed small cell infiltration and œdema of the connective tissue around the vessels between the mucous crypts. The report written by my successors, Dr. Washbourn and Dr. H. D. Rolleston, continues: "The vessels in the submucosa may become thrombosed. The same necrotic process seen in the mucosa may attack the submucosa, and later the inflammatory process may extend right through the muscular tissue into the serous covering or even into fat around the colon. In some instances the muscular layer stains badly, and is broken up, appearances showing necrotic processes. When, after recovery from an acute attack, death subsequently occurs, the submucous layer is seen to be fibrotic from organisation of inflammatory products."[4]

CLINICAL DESCRIPTION AND DIAGNOSIS OF AN ACUTE CASE.—COMPLICATIONS.

The incubation period is short—from one to two days. The onset is usually sudden, but may begin with one or two days of diarrhœa. Griping pain in the colon is the first symptom, followed very shortly by motions which consist only of a little blood and mucus. The tenesmus is so constant that the patient is hardly content to be away from the bed pan. The fever in an uncomplicated case is seldom above 101° or 102° F., and does not last for more than three to eight days, while in a mild case the temperature may never be above 99°. The stools may vary in the 24 hours from 12 to 50 or many more. The tongue is slightly coated or may be clean, but there is no appetite for food. A fatal case gradually develops a rapid pulse, cardiac failure, and collapse, in spite of an apparent improvement in the temperature, and in the frequency and appearance of the motions.

In gangrenous or fulminating cases the symptoms are severe from the onset, the stools may resemble washings from raw meat, with large sloughs of necrosed mucous membrane, causing death as early as the third or fourth day. Fayrer, however, records a case in which a slough about a foot long was discharged and the patient recovered. Malaria, scurvy, arthralgia, arthritis, and cicatricial stenosis may all complicate bacillary dysentery. In the Pretoria cases there were two of multiple liver abscess without pylephlebitis. Five out of 11 men who contracted enteric fever, probably due to a plague of flies, from 26 to 70 days after admission to the same hospital, had originally suffered from dysentery. It must not be forgotten that a soldier in war time can contract dysentery and enteric fever at the same time. "Thus a man, aged 21 years, was attacked with dysentery on April 30th, 1901, and was treated for this disease at Middelburg until May 15th, when he was transferred to the Pretoria Hospital for change of air as convalescent. On admission there his temperature was raised, and he died on May 24th from hæmorrhage due to enteric fever."[4]

Malingering must be borne in mind, for Dr. Bahr found that Indian prisoners in Fiji simulated dysentery in order to escape from labour and get welcome rest in hospital. Sago and arrowroot were added to a stool to imitate mucus; mucus and blood, obtained by pricking the gums, were introduced; one prisoner was seen to add blood and mucus, obtained from another patient's stool, to his own. Others produced diarrhœa "by swallowing large doses of sodium sulphate, obtained surreptitiously."[3]

Malarial enteritis can be excluded by blood examination, by percussing and palpating the spleen, and, if necessary, by giving quinine in proper doses of the proper salts at the proper time of day. It must be remembered that in many parts of the tropics both malaria and dysentery are endemic. Rectal bilharziasis and ankylostomiasis can be discovered by examining the fæces microscopically. The possibility of cancer of rectum in an adult might require digital examination, or the sigmoidoscope.

The differential diagnosis between amœbic and bacillary dysentery is not always so easy as it sounds, especially in chronic cases. It seems to be only expert protozoologists who can be certain of finding amœbæ, and particularly amœbic cysts, in cold fæces. Therefore, a negative report from an ordinary microscopist may sometimes be disregarded, if the patient has been in a dysenteric country, until a week of emetine injections has proved useless. Gentle scraping of the rectal mucosa may furnish evidence of amœbæ or bacilli. Amœbic cases usually run a more chronic and less toxic course than those of acute bacillary dysentery. Professor Rogers, while analysing the most frequent errors of diagnosis in 1000 medical necropsies in Calcutta, found that 12 out of 36 cases of bacillary dysentery were wrongly diagnosed in the wards, but 5 of them had only lived for a day or two after admission to the hospital. Simple diarrhœa and tubercular diarrhœa were the common errors, and after them, phthisis, acute yellow atrophy of the liver, cholera, remittent fever, and meningitis had been suggested clinically. Individuals returning to Europe from the tropics with chronic diarrhœa are more likely to have the amœbic form, while inhabitants of lunatic asylums and prisons in the British Isles will more probably be infected with the bacillary type.

I have already said that the symptoms and stools of the patient do not furnish us with much clue towards differentiation, but the fæces of a bacillary case are likely to be large, greenish-black sloughs, or they may look like spinach, or be all bright red blood without obvious fæcal material, or they may consist almost entirely of pink mucus. These appearances are not usually seen in the amœbic type. Sprue sometimes precedes or succeeds dysentery, and can usually be recognised by the tongue, history or presence of aphthæ, large, pasty motions, atrophy of liver, and emaciation.

ULCERATIVE COLITIS.

There remains for consideration the vexed question as to whether the disease called ulcerative colitis in this country is or is not bacillary dysentery. The provisional term "ulcerative colitis" originated at Guy's Hospital, and was first differentiated by Dr. Hale White in 1888. It is now generally used in England and is recognised in some American text-books. No one acquainted with both these diseases can have failed to appreciate the resemblance, as regards symptoms and post-mortem appearances, which one bears to the other.

The group of symptoms called dysentery in tropical and subtropical parts of the British Empire is usually labelled ulcerative colitis in the United Kingdom, at least outside lunatic asylums. We are confronted by an illogical outcome, for a case diagnosed as ulcerative colitis in a London hospital ward might be re-labelled if it were discovered later that the patient had lived in the tropics and that his fæces contained amœbæ or bacilli; or, again, if he became insane and had a colitis relapse in an institution the complaint would be called "asylum dysentery." But sporadic dysentery in this country is not confined to asylums nor to adults, nor to people who have resided in the tropics. Let me recall to your memory the case of a child 2 years old who died in Lambeth in January, 1909, from very acute dysentery lasting only two days. This case was reported by Lieutenant W. E. Marshall, R.A.M.C., who stated that the organism, isolated in almost pure culture, was identified with Flexner's bacillus by cultural and agglutination methods. You may also remember Professor R. Saundby's tinsmith, aged 48, who had never been out of England, in whose stools Dr. J. T. Hewetson found the Shiga bacillus.[5] Dr. H. P. Hawkins analysed 85 purely English cases of ulcerative colitis at St. Thomas's Hospital, of whom 41 died; two of them agglutinated Shiga's bacillus, and in another paper, read before this society, he records an additional case where "from a high rectal scraping B. Flexner was obtained."[6] In 1908 Professor Saundby published a case of a child, aged 3 years, where agglutination with Shiga's bacillus occurred.[7]

The bacteriological research of Dr. Ledingham and others has shown that bacillary dysentery is more widely distributed in England, outside asylums, than has hitherto been believed, and evidence is forthcoming that the bacillus dysenteriæ is occasionally found in the stools of those who were not known clinically to be suffering or to have suffered from dysentery. Some of the strains isolated from such patients, who were suspected of being "typhoid carriers," belong to the mannite-fermenting type of the dysentery bacillus, akin to the one discovered by Flexner in Manila in 1901, and which has since been proved to be the cause of certain epidemics of summer diarrhœa in the United States. Though neither the Shiga nor the Flexner type of dysentery bacillus has been isolated, by Morgan, Ledingham, and others from cases of summer diarrhœa in England, it is quite possible that certain sporadic cases of diarrhœa in this country may be caused by some variant of the dysentery bacillus. Too much stress should not be laid on the fact that tenesmus and pain at the anus, both very prominent symptoms in dysentery, may hardly exist in "colitis," for these symptoms depend chiefly on the site of the ulceration. In any intestinal lesion tenesmus is unlikely to be present if the neighbourhood of the sphincter is not involved. Dr. L. S. Dudgeon, in 1908, unsuccessfully inoculated for Dr. Hawkins two rabbits intravenously and two guinea-pigs intraperitoneally, but have many subcutaneous inoculation experiments on rabbits, dogs, or cats been tried with cultures from the stools of ulcerative colitis patients?

Considering the very high rate of mortality of this disease (70 to 80 per cent., according to Hawkins), its unknown causation and the fact that it occasionally yields to antidysenteric drug treatment (saline purgatives, calomel, large enemata of silver nitrate, &c.), I venture to think that the patient might have a better chance of recovery if physicians would give up their preconceived views. Instead of assuming that cases now called "ulcerative colitis" cannot be dysentery because they have never been in the tropics, how would it be to assume that they are dysenteric, and make every endeavour to find, in early cases, amœbæ, or, what is more probable, some evidence of one of the existing varieties, or of a new variety, of the dysentery bacillus? If this suggestion were adopted the physician might make use of remedies such as emetine and bismuth, or such as a multivalent antidysenteric serum, accompanied by large enemata. If a month of this treatment failed to do any good the patient should be no worse, and the physician could still consider the possibility of employing calomel and opium, or of summoning surgical assistance.

Able physicians, writing on colitis, unconsciously contrast it with the picture of acute dysentery instead of with chronic dysentery, when B. dysenteriæ can no longer be recovered from the stools because they are so outnumbered by B. coli and other saprophytes.

ASYLUM DYSENTERY.

I should now like to draw attention to the extraordinary and unexplained prevalence of bacillary dysentery among our lunatics. It seems to linger in some asylums as if it were the last remnant of the dysentery which used to be so prevalent in this country. The Commissioners in Lunacy have still to regret the introduction of dysentery from old asylums into new asylums, built on the best principles of modern hygiene, within a few weeks of their opening. On the other hand, in some asylums dysentery is never present. It is important to note that dysentery in an asylum is not always limited to the insane. The Sixty-seventh Report of the Commissioners in Lunacy, published in 1913, records the existence during 1912 of 1155 cases of dysentery, of which 287 died. There were also 555 cases classified as "diarrhœa or infective enteritis of uncertain origin," of which 64 died. Both dysentery and diarrhœa are slightly more prevalent among female than among male insane patients.

In addition to the lunatics, five members of the staff suffered during the year from dysentery and four women from diarrhœa. These statistics are compiled from 95 county and borough asylums in England and Wales. No less than 72 of these asylums harboured during the year one or more cases of dysentery. In other words, only 24 per cent. of these asylums are free from dysentery. The highest incidence was as follows:—

London : Colney Hatch	53 cases.
Long Grove	50 ,,
Yorkshire : Wakefield	78 ,,
Devon	90 ,,
Sussex, East	75 ,,
Staffs : Burntwood	69 ,,

These are all asylums with more than 1000 inmates.

In Devon Asylum there were on the inspection day 1311 patients. The heaviest incidence of dysentery was in the autumn months; there were 20 deaths. The Commissioners report that plans for a pathological laboratory have been approved by the Secretary of State. At the inspection of the East Sussex Asylum after an interval of 20 months the Commissioners report: "During the period under review as many as 191 patients (134 males and 57 females) and two nurses have suffered from dysentery, as regards eight of the patients with fatal termination. At the present time (Oct. 5th, 1912) four patients are in bed with the disease in an active form." They had little else to say about dysentery, but among other benevolent remarks they said "we thought more attention might have been paid to the warming of the plates" at dinner time! The Commissioners do not seem yet to have grappled with their dysentery problem on any modern scientific lines, but they have the grace to acknowledge that "there is certainly no evidence yet of that steady decline we should like to be able to record." Though they recognise the importance of diagnosis and segregation, there is no word in their voluminous report about the danger of human carriers.

It seems to be generally accepted by bacteriologists that all this asylum dysentery is of the bacillary type. Dr. Eyre, working with material from one of the London County Asylums, found not only that a bacillus identical with Shiga's bacillus could be isolated from the stools of six dysenteric patients, but also that the blood serum of some of these patients possessed a specific agglutinative action when tested "against other strains of bacillus dysenteriæ isolated from cases of dysentery in tropical countries."[8] Flexner's bacillus was found in the stools of 17 out of 19 cases of dysentery occurring in the Somerset and Bath Asylum.[8a] Dysentery in the form of local epidemics was well known in England until the middle of the nineteenth century, a date when the first batch of lunatic asylums had already been built. Mr. H. S. Gettings has traced the history of dysentery in the Wakefield Asylum from the month when it was opened, November, 1818, to the present time.[9] By a table, compiled from the case books and registers of the asylum, he is able to show that dysentery has been present every year for 96 years, with the exception of nine not consecutive years, when there is no certain evidence of its having existed. The disease was not always called dysentery; it was often labelled chronic diarrhœa, feverish diarrhœa, dysenteric diarrhœa, and, since 1886, catarrhal enteritis, catarrhal ulceration of the large intestine, influenzal colitis, or ulcerative colitis.

In 1838 Dr. Caleb Crowther, of Wakefield, wrote a book containing a chapter headed, "Is the Spread of Dysentery in our Lunatic Asylums a Necessary Evil, or is it the Effect of Negligence on the part of the Medical Superintendent?" In this chapter he says: "I am firmly convinced that when dysentery spreads by infection in an asylum it is the result of inattention and negligence." Gettings states that when Dr. Bolton was appointed superintendent in 1910 he ordered that the intestines should be opened and examined at every necropsy. "The routine performance of this led to the detection of cases which would otherwise have been missed. It also revealed many cases to be still active that clinically had given no signs for weeks or even months. Before this time it had been the exception to open the bowels, and it is rare to find any note in the (recent) post-mortem books other than 'stomach and bowels normal to external appearances.'" Lunatics are even more difficult to deal with than sane patients, for they may never complain of diarrhœa nor any other intestinal symptoms, and yet when they die they are found to have had, perhaps for years, chronic disease of the colon. Thus it is possible by careful searching, as in cholera and in enteric fever, to detect a carrier who has never been suspected of dysentery, but who has nevertheless been responsible for a localised ward epidemic. Mr. Gettings tells me in a private letter that in 1913 there were 100 cases of dysentery with 29 deaths at Wakefield. Eighty of these were examined by him, and he found the B. dysenteriæ in half of them. It belonged to the Flexner group.

MILITARY CAMPAIGNS.

Shiga says of bacillary dysentery, "Always a constant companion of war, it has been more fatal to armies than powder and shot." In the Russo-Japanese war dysentery bacilli were found in Manchuria, in Korea, and among the Russian troops at Port Arthur.

DANGER OF FLIES AND CARRIERS.

Though dysentery in cool climates has not always been, and is not now, confined to the summer and autumn, when house flies are abundant, it is significant that temporary outbreaks both in Europe and the tropics often occur during the fly season. Dr. Bahr has suggested that the fly season in Suva corresponds exactly with the annual epidemic of bacillary dysentery.[8] In many of the Fiji islands "the traveller becomes covered from head to foot with these insects immediately he ventures outside his lodging, and in the sugar districts life is made endurable only by the provision of flyproof netting over the doors and windows." Bahr succeeded in isolating Shiga's bacillus from the lower intestinal tract of flies which had been caught on the bed of a patient suffering from a very acute attack of dysentery and from whose stools the Shiga bacillus had been isolated. He suggests that the flies had imbibed the infection from the soiled clothing. During some 40 experiments conducted later at the London School of Tropical Medicine he found that it was impossible to recover the dysentery bacillus from the intestine of any fly after the fifth day of infection. Also he was unable to obtain any evidence of the multiplication of the bacilli in the flies.[10] But his valuable work, often conducted under trying circumstances, fully justifies our continuing to suspect the house-fly (Musca domestica) as being a carrier of bacilli from fæces to food. This is another similarity in the etiology of dysentery and enteric fever, for every year evidence is forthcoming which puts the causation of these two diseases on similar lines.

Contamination of drinking water or of raw vegetables, milk, and other food supplies must first be suspected, especially if a group of people are simultaneously infected; but for sporadic, isolated cases, when no evidence can incriminate water and food, we must suspect flies and, what is of greater importance still in every climate, the human carrier. To stamp out dysentery from an asylum or a district it is necessary to treat it with exactly the same precautions as a careful sanitarian devises against cholera or enteric fever. Seven years ago Shiga wrote: "The most important source of infection is the individual suffering from dysentery."[11] In every epidemic there is evidence of contact infection from stools or from the clothes or other articles soiled by the patient.

Gettings is sure that at Wakefield it is the human carriers, the chronic cases, "who keep the asylum infection going, who originate fresh cases and epidemics. They form the keystone of the problem, and must be detected and isolated before any permanent good can be done."[9] Dr. Macalister found, "at a large lunatic asylum in the Midlands," that the actual carriers were chiefly among the incomplete convalescents from dysentery.[12] Tebbutt in the same asylum found, while examining the stools of 28 cases, eight lunatics who were "excreting dysentery bacilli, which were not found necessarily associated with blood and mucus," but he could not discover any bacilli in the flies.[13] In India most of the prison dysentery is bacillary, and Forster, Gillitt, and others have greatly reduced its incidence by instituting "post dysenteric gangs," in which prisoners are isolated after the active symptoms of the disease have disappeared.

Two recent instances of infection may be quoted. In the summer of 1913 an epidemic of bacillary dysentery broke out in a cavalry regiment in Würtemberg, where dysentery had been practically unknown among the troops for several years. The infection was introduced by visitors from Alsace, where dysentery is endemic. There were 52 men infected, no fatal cases, the same bacillus was isolated in every instance, and amongst the apparently healthy men of the regiment no less than 13 were found to be carriers of the same bacillus by bacteriological examination of their stools. After six weeks the epidemic was stamped out without any spread to the other regiments of the garrison.[14] In a children's ward in a Frankfort hospital there were 23 patients, of whom 20 contracted bacillary dysentery and 6 died. The disease was introduced by a child suffering from whooping-cough.[15] There are instances of the disease having occurred among monkeys, and on one occasion it was transmitted from the animal to man. Spontaneous (Flexner) dysentery broke out among monkeys in a Paris laboratory in 1905.[16] Several similar cases developed in 1910 in the animal house of the Bureau of Science in Manila.[17] In 1911 a keeper at the Hamburg Zoological Gardens contracted Shiga-Kruse dysentery while nursing a chimpanzee, which eventually died of that disease. A second chimpanzee from the same cage also caught the disease, and, like the keeper, recovered.[18]

TREATMENT.

The treatment may be divided into the care of acute and chronic cases and the administration of serums. There are a few general remarks which apply to all cases. Absolute rest in bed is just as important as in enteric fever, but if there is much nausea it is a mistake to lie on the right side. The patient's abdomen must be safeguarded by a flannel belt together with a pad of cotton-wool if the climate permits. A thin linseed poultice, on which have been sprinkled 30 drops of liquid extract of opium, seems to relieve intestinal pain better than a poultice without opium; this can be noticed even in cases where the patient is unaware that opium has been added. The poultice must be very light in weight, because the abdomen is so tender in acute cases.

The diet should be liquid and tepid; albumen water, rice water, to which boiled or peptonised milk may gradually be added. Some patients take Horlick's malted preparation better than any plain milk; panopeptone and Benger's food are very useful. When convalescence is beginning the food should be very gradually increased, as in typhoid fever, the appearance of the motions, which must be examined every day, being the surest guide. Turkish and Egyptian patients dislike milk very much, and seldom take it in health unless they consider they need an aperient. For them, and very often for all dysenteric patients, the sour milk of Eastern countries, *yaghurt*, is much to be preferred. It is vastly superior to the curdled milk prepared from so-called lactic acid tablets. I see that a preparation called "yaourt" is now for sale in London, but I do not know how it is prepared. The following description of the *yaghurt* used at El Tor is given by Dr. Willmore and Dr. Savage.[19] Several samples of ordinary sour milk were inoculated into sterilised milk. "That which gave the softest and most homogeneous curd was then plated out on MacConkey or lactose cochineal agar, and pure cultures obtained of a large lactic-acid-producing bacillus and a long streptococcus (? S. lebensis). These were then inoculated into sterilised milk (Natura brand)—the Australian condensed milk is unsuitable—and each batch of *yaghurt*, prepared in covered sterilised jars in an incubator at 37° C., was inoculated with a flamed spoon from the preceding one." Alcohol should not be given unless the patient is in a state of collapse, when intracellular saline injections are also useful. Thirst can be alleviated by weak sulphuric acid lemonade. Constipation, when present, can be treated with paraffin or laxamel.

Drugs.

On the first day small doses of calomel help to clean the tongue and the intestinal canal, say, one-sixth of a grain, with a little bicarbonate of soda every hour for six or eight hours. Opium is of no use except as a temporary measure to procure sleep. The saline treatment originally recommended by Professor R. Bartholow in 1877, then of Ohio and later of Philadelphia, often gives good results after the calomel; a drachm of sodium sulphate or of magnesium sulphate can be given every hour for one day in water with tincture of cardamoms, and subsequently every four or six hours. Its chief use is to empty the intestine of fæcal matter. Tenesmus can be relieved by suppositories of cocaine, belladonna, or opium.

The only large enema I should now use is a soothing one of 2 pints of warm water, in which an ounce of linseed has been allowed to soak for some hours; this may be retained by the patient as long as he likes. If the anus is very sore it may be painted with cocaine before the tube is inserted, or a suppository of 1 grain of cocaine may be introduced half an hour beforehand. Sulphur was given with success during the South African war by Dr. G. E. Richmond in doses of 20 grains, together with 5 grains of Dover's powder. This was ordered every four hours, but in chronic dysentery sulphur alone was given.[4, 20]. Cyllin given by the mouth is a useful disinfectant. In chronic dysentery I have faith in bismuth in doses of not less than 15 grains every four hours, and I still have confidence in large enemata of nitrate of silver or sulphate of copper.[21] Professor Rogers has this year published a note of praise of organic silver salts. Those which he thinks should be investigated as being bactericidal to the dysentery bacilli are albargin or silver gelatose, nargol or silver nucleate, and protargol. He finds that boracic acid and quinine have little or no action on the bacilli, but he recommends a further trial of cyllin.[22]

The routine method is to employ a long tube and funnel, or a reservoir containing three pints of the solution 1 in 1000. The rectal tube must be soft to avoid injuring the bowel, and after being well greased with boracic ointment it should be introduced, if possible, its whole length. The solution is not injected but allowed to run in very slowly during some minutes, while the patient is in the knee-elbow position. The tube should be passed by the medical attendant. All patients can hold one pint, rapidly increased to two pints, and some can gradually accustom themselves to take four pints or more. This enema need not be retained for more than five minutes and need not be repeated more than once a day.[21] I used to give in addition, once a day, a boracic acid (one ounce and a half) and starch enema of two pints, but I once found that an English patient, 12 hours later, was covered with an erythematous scarlatiniform rash over face, inside of arms, abdomen, and legs; and at the margins of this rash, which lasted for 30 hours, were patches, erythematous and slightly raised, ¼ inch in diameter. This patient had retained the enema for 25 minutes and, unlike other patients, he had vomited three times after it. I then treated him with large enemata of saline solution and sulphate of copper, which caused him no discomfort.

Serum.

We know from Shiga that antidysenteric serum is bactericidal as well as antitoxic. Many observers elsewhere have agreed with his verdict in Japan: "The course of the disease is shortened in those who recover and lengthened in those who would otherwise die." During the Tor season, between November, 1912, and January, 1913, there were 16,551 pilgrims who passed through the quarantine station. There were 75 admissions into the hospital with dysentery, of whom 9 died. There were 26 of these cases in which bacillary infection only was present; 22 of them were treated with serum and 2 died, a mortality of 9 per cent. The remaining 4 were not treated with serum, and 2 died, a mortality of 50 per cent. The total dysentery death-rate among pilgrims has been reduced, since the introduction of serum, from 53 and even from 70 to 12 per cent. The routine treatment described by Willmore and Savage is as follows: On admission to hospital of a suspected case a few drops of blood were taken from the median basilic vein and the fæces were examined microscopically and plated out. According to the data furnished by blood reactions and the stool plates, serums were administered, generally multivalent, unless Shiga's bacillus alone was isolated. "The best results are obtained from the administration of very large doses, from 80 to 120 c.c., injected either deeply into the subcutaneous tissues of the flank and abdomen or intravenously." It will be noted that these doses are much larger than the 20 c.c. recommended by the Lister Institute. The injections "are repeated twice daily or at longer intervals, as the patient's condition demands, during not longer than ten days after the first dose." The first result of a large injection is a general improvement in the patient's condition, so that occasionally a man, apparently moribund before the injection, may a few hours later be enjoying a meal.[19] Dr. Bahr's recent experience of treatment in Fiji is that the cases injected intravenously with polyvalent antidysenteric serum gave the best results as far as could be ascertained.[3] He gave to adults 20 c.c. and to children 10 c.c. or less.

I may conclude by saying that in any case of doubtful origin the combined treatment of the patient by emetine and by polyvalent antidysenteric serum is, in my opinion, both rational and humane.

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OBSERVATIONS ON THE IMPROVISATION OF APPARATUS IN THE TREATMENT OF CERTAIN FRACTURES IN MODERN WARFARE.

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DURING a recent visit to certain hospitals in Austria and Hungary one of the writers of this article saw the apparatus of Florschütz in use. Knowing that it was adopted with great success in the recent Balkan war, and being greatly impressed with its simplicity and efficiency for either simple or compound fractures of the thigh, or even of the leg, he feels at this juncture urgently induced to describe it. He and his collaborator do this in the hope that it may be of use in certain cases where the usual splints are not available, or even in preference to them, in our military hospitals at home or abroad.

Cases of fracture of the thigh.—The armamentarium required is as follows: 1. A piece of smooth wood 5 ft. long, 6 in. wide, and 1¼ in. thick. 2. Two pulley wheels on a screw base. 3. Bricks or blocks to raise the foot of the bed. 4. A 6½ ft. to 7 ft. pole, the thickness of a broomstick. 5. Some broad gauze or calico bandaging 4 in. to 6 in. in width. 6. Adhesive strapping. 7. Sand bags.

FIG. 1.

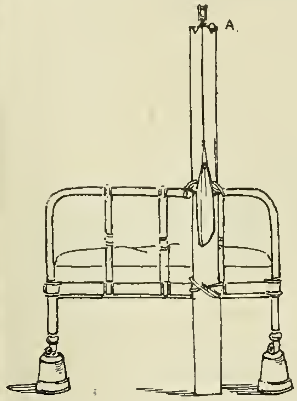
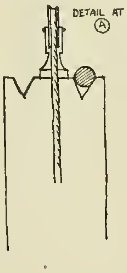
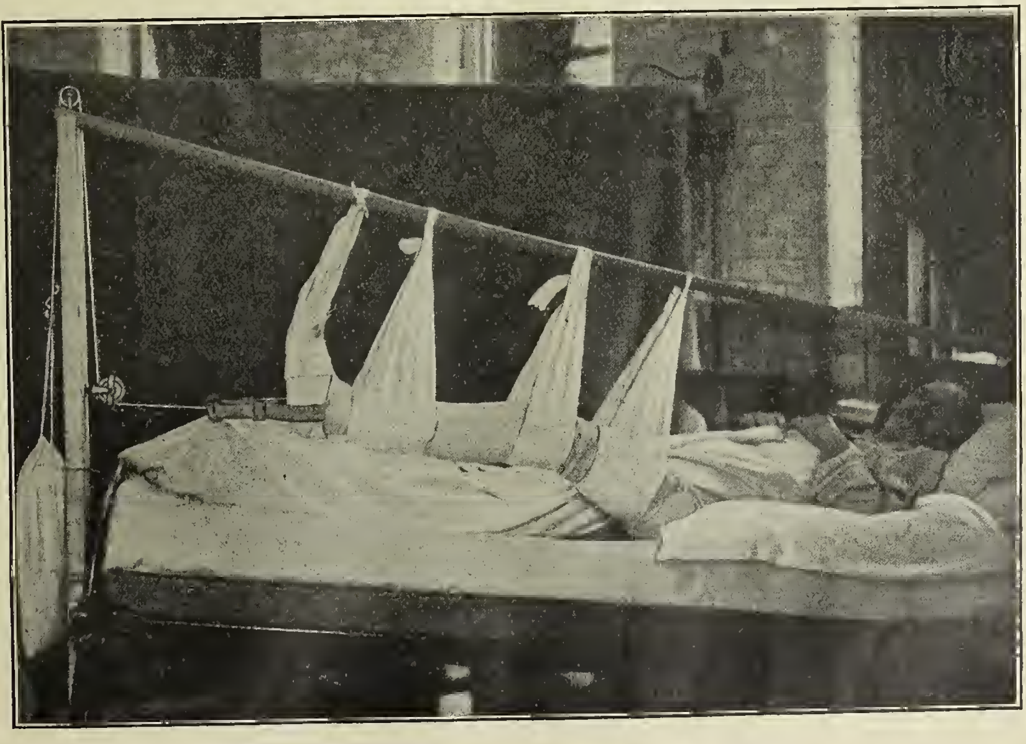


FIG. 2.



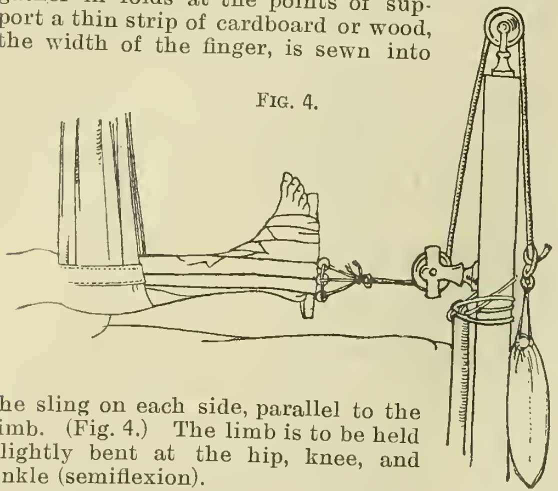
The bed is prepared with a firm mattress. The wide board is inserted at the foot of the bed or between the mattress and the end of the bed, and is fixed by means of cord or bandage to the bed frame either to the right or left of the mid-line according to the fractured extremity. (Fig. 1.) The lower roller screw is inserted about a span above the mattress and the upper to the middle of the upper edge of the upright, both of which rollers must be in the same perpendicular. The pole is now fixed by one end to the centre of the head end of the bed and the other rests in a notch in the board at the

FIG. 3.



Florschütz method of extension with the leg suspended in semiflexion foot of the bed by the side of the upper pulley. (Fig. 2.) This pole serves for the suspension of the leg which will be put in the middle of three gauze slings which have been lined with wadding and will support the leg under the thigh, knee, and calf. (Fig. 3.) In order that the slings shall not gather in folds at the points of support a thin strip of cardboard or wood, the width of the finger, is sewn into the sling on each side, parallel to the limb. (Fig. 4.) The limb is to be held slightly bent at the hip, knee, and ankle (semiflexion).

FIG. 4.



The method of use is as follows. The injured limb in the case of the thigh has an ordinary adhesive plaster extension applied (Buck or Bardenheuer), reaching upwards as far as the lower fragment, or beyond if necessary. (Fig. 3.) In the case of the lower leg the weight may be attached by another device. A piece of soft wood the length of the foot and slightly wider is fixed by strapping to the sole and heel with a layer of cotton-wool or gauze intervening, a gauze protection also being afforded to the prominent malleoli. Four picture-frame rings are then inserted into the wooden sole near the heel, so that a cord may be passed through, and the line of traction made just posterior to the malleoli. (Fig. 5.)

FIG. 5.

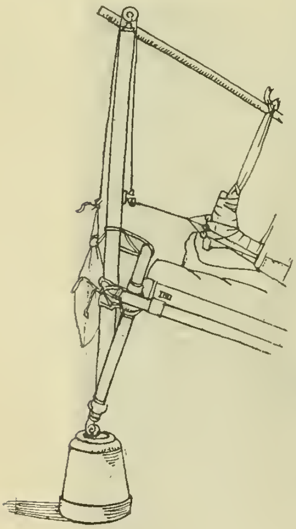
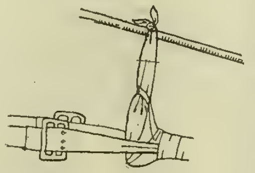


FIG. 6.



The patient is placed in the right half of the bed in case of fractured left femur, and in the left half of the bed for the right femur. This brings about a certain amount of abduction, which is most essential in fractures of the upper thigh. The slings are now placed and fastened to the rod over the bed, so that the limb is held in slight flexion at the hip and knee. The line of traction of the cord is so arranged as to pass just behind the mid-ankle, round the lower pulley from which the cord is diverted perpendicularly upwards over the pulley at the top of the board, where it is attached on the other side to a sand-bag holding six or seven pounds or more as required. A triangular bandage encloses the heel and sole of the foot and is tied to the suspension rod to guard against an undue sinking of the heel or over-extension of the foot. (Fig. 6.) Counter extension is not necessary by this method.

The advantages of this method are:—1. The comfort which the sling position in semiflexion affords the patient. 2. It permits a certain degree of movement and an easier handling of the patient by the nurses. 3. Friction sores are practically impossible. 4. The patient obtains by the sling method more effective extension with less weight: the muscles, joints, and especially the ligaments are not subjected to over-stretching, and consequently the Buck's extension holds longer than is the case when the limb is put up in the extended position with twice the weight (e.g., Liston's splint). 5. Abduction is obtained without any accessory apparatus. 6. The method is applicable with any sort of bed. 7. The necessary material is easily procured and prepared. 8. The supervision is very simple. 9. It allows the necessary attention to wounds—i.e., change of dressings, without inconvenience and disturbance. 10. The results as tested by means of measurement and radiography have been very satisfactory.

PS.—With the exception of Fig. 3 it has not been considered necessary to add any explanatory note to the illustrations as we consider the text is sufficient.

(To be continued.)

A CASE OF ENTERIC FEVER COMPLICATED BY PURPURIC SYMPTOMS.

BY G. R. BRUCE, M.B. EDIN., D.P.H. CAMB.,
ASSISTANT MEDICAL SUPERINTENDENT, WILLESDEN ISOLATION HOSPITAL.

IN THE LANCET of July 18th Dr. A. Caddy and Dr. B. Molony[1] have described three cases of hæmorrhagic typhoid fever, the first of which was characterised by hæmorrhages from the gums, purpuric rash, and hæmorrhage from the rectum, and into the bladder. A patient whose case presents several features in common with the above has been lately under treatment in the Willesden Isolation Hospital.

The patient, a woman aged 22, was admitted on May 30th, 1914, suffering from a typical and moderately severe attack of enteric fever. She was then in the fourteenth day of her illness, and gave a history of malaise and headache, getting worse and associated with diarrhœa for several days before admission. There was no history of epistaxis. The temperature on admission was 102° F., and during the first fortnight of her stay—i.e., from the fifteenth to the twenty-ninth day of disease—was of a decidedly swinging type, with evening rise from 102·8° to 104°, and morning remission 99° to 100°. The pulse was 108 on admission, and during the height of the fever never rose above 120; it was soft and dicrotic, but never irregular or weak. On examination the abdomen was found to be slightly tumid; there was no abdominal pain, but some indefinite tenderness on palpation; the spleen was palpable under the left costal margin. Rose spots were fairly numerous on the abdomen and chest. The tongue was thickly coated. The heart and lungs were found to be normal. A sharply positive Widal reaction with dilution 1–30 was obtained. Diarrhœa lasted for five days, and was followed by constipation. From June 4th to 11th there was albumin in the urine. The patient remained rational during the whole attack. Treatment was on the usual lines—a strict milk diet and sponging when necessary. In addition 1 oz. mist. chlori et quininæ (quin. sulph. gr. 2½ in 1 oz.), which is given as a routine to all cases of enteric fever in this hospital, was administered four-hourly.

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[1] Caddy and Molony: THE LANCET, July 18th, 1914, p. 147.

On admission a bruise of about the size of a five-shilling piece was found under the inferior angle of the right scapula. A poultice was said to have been applied there before admission. In view of the subsequent history of the case this bruise is of some significance. In all probability there had been slight trauma with extravasation of blood. Locally there was a distinct swelling, tender, and of a dark purplish colour. The condition lasted a fortnight unchanged; the swelling and discolouration then gradually subsided, and disappeared at the end of three weeks. On June 15th, the thirtieth day of illness, bleeding began from the gums, a slight but persistent ooze. In addition to this symptom on the 19th hæmorrhage was noted under the conjunctivæ, and hæmorrhagic spots began to appear on the abdomen, chest, and back. These gradually increased in number until by June 22nd the body was well covered with petechiæ. Besides the petechiæ several larger, dark purple hæmorrhages were found on the buttocks and back, irregular in shape, of about the size of a shilling piece. On the 19th there was bleeding per rectum, with the stools, and independently, about 1 oz. at a time. The melæna continued for three days, occurring on six occasions altogether. From the onset of the purpuric symptoms the temperature, already falling, became subnormal in the morning, with evening rise 98°–99°; the pulse, 80–96, was always good. The treatment at first was local, adrenalin hydrochloride, 1 in 1000, being applied to the gums. As the bleeding still continued and the other signs of purpura began to appear the mist. chlori et quininæ was omitted on June 20th; adrenalin hydrochloride, 1 in 1000, 3 minims, was given six hourly by mouth in 1 drachm of water, and calcium lactate 5 grains three times a day. The purpuric symptoms from this date began to abate; the melæna ceased on June 22nd, the hæmorrhage from the gums on the 24th, while the petechiæ began slowly to fade. The patient's general condition remained fair, though she was undoubtedly weaker and becoming blanched from loss of blood; she, however, took liquid nourishment well.

On June 24th, the thirty-ninth day of the disease, there was a rapid rise of temperature from normal to 102° and the pulse rose to 132; and on the 25th there was a further rise to 103·6° and the pulse rose to 144. There were no abdominal symptoms, and the rash, now fading, alone remained of the purpuric symptoms. The high temperature was maintained without anything definite to account for it, till on June 26th fulness and tenderness on the left side of the neck were found. The left tonsil was swollen, inflamed, and covered by a dirty grey deposit, from which the B. diphtheriæ was isolated. 4000 units diphtheria antitoxin were injected on June 27th. A rapid improvement took place; two days later the deposit and signs of inflammation had gone, and the temperature had fallen to normal. From July 1st progress towards convalescence was uninterrupted. On July 14th—the fiftieth day of illness—the patient was up for a short time and was put on full diet. She was discharged on July 23rd feeling well and fairly strong to go away for convalescence.

A point of interest is that the three cases described by Dr. Caddy and Dr. Molony and the above case were all treated with quinine—the former receiving 30–40 grains a day for several days, the latter 15 grains a day for 15 days—before the purpuric symptoms began. The question arises whether the exhibition of quinine acted as a contributory cause of the purpuric symptoms, or whether the latter arose independently and might be ascribed to a toxic origin. From the fact that the case described above had a large hæmorrhagic bruise on admission it may be concluded that here there was at least a tendency to hæmorrhagic symptoms before the administration of quinine was commenced. Hale White[2] states that quinine may cause erythematous rashes, epistaxis, and other hæmorrhages. Montgomery[3] quotes a case with bleeding from the gums, conjunctival hæmorrhages, and purpuric spots following the administration of quinine. At the same time cases of enteric fever with purpuric or hæmorrhagic symptoms have from time to time been described in which no note is made of the administration of quinine. Londe[4] describes a case of enteric fever, with hæmorrhage from the gums, epistaxis, hæmaturia, and purpuric eruption, the symptoms starting on the twentieth day of disease; and Thompson[5] a somewhat similar case in which the purpuric symptoms, starting on the eleventh day, were epistaxis, hæmorrhagic spots, hæmorrhage per rectum, and subconjunctival hæmorrhages. Both cases were severe typical attacks of enteric fever, with some degree of toxæmia, and both recovered. The causation of purpuric symptoms in enteric fever may therefore be ascribed to toxins developed during the course of a severe attack, although in the above case the factor of the administration of quinine has to be eliminated.

I am indebted to Dr. W. J. J. Stewart, medical superintendent, for permission to publish this case.

Neasden, N.W.

OBSERVATIONS ON THE COMPOSITION AND DERIVATIVES OF URINARY DEXTRIN.

By P. J. CAMMIDGE, M.D. Lond.,

AND

H. A. H. HOWARD, B.Sc.

In a paper published by one of us in 1909[1] it was shown that the urine of persons suffering from inflammatory affections of the pancreas contains a complex which on hydrolysis with hydrochloric acid gives rise to a substance having the characters of a pentose, and that similar results could be obtained with the urine of animals in which pancreatic changes had been set up experimentally. At that time the mother substance from which the pentose was derived had not been isolated, but we have since been conducting experiments with that object in view. The fact that the complex which was being sought for yielded a pentose on hydrolysis with a dilute acid, and this in its turn would readily give rise to furfural on treatment with a stronger acid, and the fact that it was not fermented with brewer's yeast, suggested that Landwehr's animal gum, or rather the pure product free from ash and nitrogen, termed "urinary dextrin," separated by Baisch, Salkowski, and Alfthan, might be the substance in question. The dextrin was therefore isolated from a number of urines which had been found to give a marked "pancreatic" reaction by the following procedure.

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[2] Hale White: Materia Medica, p. 448.

[3] Montgomery: Boston Medical and Surgical Journal, 1897, vol. cxxxviii., p. 646.

[4] Londe; Bulletin et Mémoires de la Société Médicale des Hôpitaux de Paris, 1899, 3. s., xvi., p. 825.

[5] Thompson: Medical and Surgical Reports, Presbyterian Hospital, New York, 1898, vol. iii., pp. 80–84.

[1] Proceedings of the Royal Society, B, vol. lxxxi., p. 372.

The urine was mixed with a tenth of its volume of a saturated solution of lead acetate and filtered. The filtrate was concentrated and the lead removed by treatment with sodium sulphate. The resulting clear liquid was then concentrated to a small bulk, cooled, and filtered off from the crystals which separated out. The filtrate was mixed with four times its volume of 90 per cent. alcohol, boiled, and filtered while hot. The solid residue left on the filter was well washed with alcohol, dried, dissolved in as small a quantity of hot water as possible, and cooled. The crystals that separated were removed by filtration and the filtrate was again treated with alcohol. The purified precipitate was then suspended in a 10 per cent. solution of sodium hydrate and shaken with benzoyl chloride. After standing for 24 hours the mixture was filtered, thoroughly washed with distilled water, dried, and extracted with water. The residue was ground up with dilute hydrochloric acid, filtered, and the residue on the filter washed free from chlorides. It was then dissolved in warm alcohol, filtered, cooled, and saponified by means of sodium ethylate, the hydrolysis being continued until a filtered portion gave no precipitate when added to distilled water. The voluminous precipitate was filtered off and washed with 95 per cent. alcohol until the washings were neutral in reaction. It was then dried, dissolved in water, precipitated with five times its volume of 90 per cent. alcohol, filtered, and the precipitate washed successively with alcohol and ether, then dried and dissolved in water.

Solutions of the dextrin were found to give no colour reaction with iodine, they were not fermented with brewer's yeast, and did not reduce copper or bismuth solutions. After being heated with dilute hydrochloric acid and neutralised, the solution showed strong reducing powers and gave the orcin and phloroglucin reactions for a pentose. The hydrolysed solution was not fermented by yeast. The dextrin was found to be free from nitrogen, and ultimate analysis in two cases gave:—A, carbon, 43·8 per cent.; hydrogen, 6·2 per cent.; oxygen, 50·0 per cent.; and B, carbon, 43·6 per cent.; hydrogen, 6·3 per cent.; oxygen, 50·1 per cent., corresponding to the following formula:—$(C_6H_{10}O_5)_n\ C_5H_9O_5$ or $(C_6H_{10}O_5)_n$.

We then proceeded to determine the nature of the sugar split off by hydrolysis from the dextrin. The total dextrin from 5 litres of urine was dissolved in 100 c.c of water, 20 c.c. of pure hydrochloric acid were added, and the mixture boiled for ten minutes. It was then cooled, neutralised with 60 grammes lead carbonate, filtered, and 30 grammes of basic lead acetate added. The mixture was well shaken, allowed to stand overnight, and then filtered. The excess of lead was removed from the filtrate with sodium sulphate, and the filtrate from this evaporated to dryness on the water bath. The residue was extracted with 90 per cent. alcohol, the extract filtered, and the alcohol evaporated off. The residue then obtained was dissolved in water, and the osazone prepared by Maquenne's method. The osazone was purified by recrystalling from dilute acetone, or dilute alcohol, several times. Microscopically it was found to consist of fine yellow tufted needles. Determinations of the melting point and nitrogen content in five cases gave the following results:—

	Melting point.	Nitrogen.
A	160° C.	17·35 per cent.
B	160° C.	17·31 „
C	162° C.	17·50 „
D	159° C.	17·70 „
E	162° C.	17·90 „

The melting point of the osazone showed that the sugar was not dextrose or lævulose, and suggested that it was a pentose, while the nitrogen content tended to confirm this conclusion since it corresponded closely to the theoretical yield for a pentosazone (17·61 per cent.). Alcoholic solutions of the osazone were found to be strongly lævorotatory, the lævorotation (–43°) corresponding to that of a similar solution of xylosazone (–43·4°).

To confirm the nature of the pentose the double cadmium xylonobromide was prepared by Bertrand's method.[2] Four grammes of the residue from the alcoholic extract obtained from the dextrin as in the preparation of the osazone were dissolved in 20 c.c. of water, 10 grammes of cadmium carbonate added, and 5 grammes of bromine introduced. The mixture was gently warmed on a water bath, left for 24 hours, and subsequently evaporated to dryness. The residue was extracted with 40 c.c. of water, filtered, evaporated to half its bulk, and mixed with an equal volume of absolute alcohol. A precipitate of small prismatic crystals separated out. This was filtered off and its composition determined. In one case, which may be quoted as an example, 0·8 gramme of the salt was found to give 0·4042 gramme of silver bromide corresponding to 21·5 per cent. of bromine, the theoretical yield for $(C_5H_9O_6)-Cd-CdBr_2.\ 2\ H_2O$ being 21·39 per cent.

The nature of the pentose present in the solutions prepared in the manner described in the previous paper from urines giving a characteristic "pancreatic" reaction was investigated in a similar way, and it was found that in the melting point, the rotatory power of its osazone, and in its reactions with Bertrand's test, it had the characters of xylose, thus corresponding to the pentose obtained from the dextrin. To confirm the inference that the pentose obtained on hydrolysing certain urines with dilute hydrochloric acid was derived from the urinary dextrin a quantitive method for estimating the pentose was devised. This is a modification of Jolle's method for estimating pentoses,[3] distillation with steam being used instead of direct distillation, and the results being expressed in cubic centimetres of centinormal iodine solution. By substituting steam for direct distillation it was found that the difficulty arising from the presence of most other sugars than the pentoses could be overcome. The addition of dextrose up to as much as 15 per cent. to a normal urine caused no furfural to pass over in the distillate. Lactose and maltose give similar results. With lævulose traces of furfural appeared when a 2 per cent. solution was employed, and larger quantities gave a steadily increasing yield. We have found, however, that the lævulose met with in diabetic urines, unlike that of plant origin, can be removed from acid solutions like glucuronic acid with basic lead acetate, so that by treating the hydrolysed solution with this substance before it is submitted to steam distillation the lævulose and any glucuronic acid set free in the hydrolytic process are removed. With arabinose and xylose each 0·1 gramme of the added pentose was found to correspond with 30–35 c.c. of centinormal iodine.

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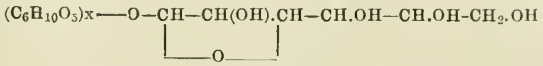
[2] Bulletin de la Société Chimique, 1891, pp. 546, 554.

[3] Sitzungsberichte der Wiener Akademie, Band cxiv., p. 1191, 1905.

The details of the method were described in a paper read by one of us in the Medical Section of the International Medical Congress held in London last year (1913). This process was applied to a series of over 40 urines and the dextrins prepared from similar quantities of the same urines with the following results:—

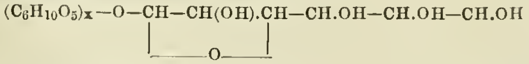
Urine: iodine value.	Dextrin: iodine value.	Difference.	Per cent. difference.	Urine: iodine value.	Dextrin: iodine value.	Difference.	Per cent. difference.
181	155	26	14·4	50.	42	8	15·2
180	156	24	15·3	47	42	5	10·6
150	126	24	16·0	45	39	6	15·3
144	122	22	15·2	45	38	7	15·5
130	111	19	14·6	45	39	6	15·3
117	100	17	14·5	42	35	7	16·7
110	93	17	15·4	37	30	7	18·7
108	90	18	16 6	36	30	6	18·6
108	91	17	15·7	35	30	5	14·3
102	88	14	13·8	34	30	4	11·8
100	84	16	16·0	22	18	4	18·2
91	78	13	14·3	20	18	2	10·0
87	74	13	14·9	16	14	2	12·5
87	75	12	13·8	12	10	2	16·7
70	60	10	14·3	11	10	1·0	9·1
70	60	10	14·3	10	9·5	0·5	5·0
70	60	10	14·3	10	9·0	1·0	10·0
70	60	10	14·3	8	6·5	1·5	18·58
67	57	10	14·9	5	4·0	1·0	20·0
58	59	9	15·5	2·5	2·0	0 5	20·0
57	48	9	15·8	0·0	0·0	0·0	0·0
57	48	9	15·8				
54	47	7	15·1	Average	—	7·1	14·5

The discovery of a process by which the dextrin in a urine can be estimated, even in the presence of sugars, if free pentoses have been excluded by preliminary tests, has enabled us to investigate the occurrence of this body in diabetes and other pathological conditions and also to watch the variations that occur in different circumstances. The process is not sufficiently delicate to detect the trace of dextrin present in normal urines and we have found that the urine of healthy individuals has an "iodine coefficient" of nought. When carbohydrate metabolism is being imperfectly carried out a high iodine coefficient is obtained. If, however, the interference with carbohydrate metabolism is such that sugar appears in the urine, a previously high iodine coefficient usually falls, to rise again when the sugar disappears. In many cases of persistent glycosuria, too, this movement of the iodine coefficient and the sugar excretion in opposite directions has been observed, a rise in the one being accompanied or preceded by a fall in the other. In severe cases of diabetes, where more sugar is being excreted in the urine than would be accounted for by the carbohydrate taken as such in the food, particularly when a fatal termination is close at hand, the course of the iodine coefficient of the urine and the sugar excreted follow each other. These observations suggest that the urinary dextrin is probably a derivative or antecedent of glycogen intermediate between that substance and dextrose. In the former case, if the body still possesses the power of breaking down glycogen to a polysaccharide of low molecular weight, but this, instead of being converted into dextrose, which in its turn would give rise to CO_2 and H_2O, suffers irregular oxidation and may give rise to a body having the formula:—



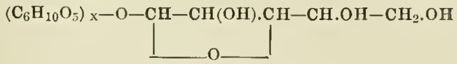
$$(C_6H_{10}O_5)x\text{—}O\text{—}\underbrace{CH\text{—}CH(OH).CH}_{O}\text{—}CH.OH\text{—}CH.OH\text{-}CH_2.OH$$

On oxidising the end $CH_2.OH$ group we should have a substance with the formula:—



$$(C_6H_{10}O_5)x\text{—}O\text{—}\underbrace{CH\text{—}CH(OH).CH}_{O}\text{—}CH.OH\text{—}CH.OH\text{—}CH.OH$$

By splitting off the terminal CO_2 group a dextrin-like body with the formula:—



$$(C_6H_{10}O_5)\,x\text{—}O\text{—}\underbrace{CH\text{—}CH(OH).CH}_{O}\text{—}CH.OH\text{—}CH_2.OH$$

would result. This corresponds to one of the alternative formula—$(C_6H_{10}O_5)_n.C_5H_9O_5$—which our analysis of the urinary dextrin suggests is probable for that body.

It is also possible that the urinary dextrin may result from an incapacity on the part of the tissues to form glycogen from dextrose, the process stopping short at the intermediate dextrin stage. In support of this view we have the fact that in mild and intermittent cases of glycosuria the iodine coefficient of the urine vanishes on a carbohydrate-free diet to reappear again when dextrose is added to the food in insufficient amount to bring about a return of the glycosuria, suggesting that when the glycogen stores of the body have been reduced by the exclusion of carbohydrate from the diet the tissues recover to a certain extent their powers of building dextrose into a more complex molecule, but cannot carry all of it beyond the dextrin stage. We have also found in cases of hepatic disease, in which dextrose can be utilised but in which lævulose and lactose give rise to "alimentary" glycosuria, that the ingestion of dextrose is not associated with an increase in the iodine coefficient of the urine. When, however, either of the other sugars is given in sufficient amount the iodine coefficient rises, suggesting that dextrose can be converted into glycogen, but that part of the lævulose and lactose can only be carried to the dextrin stage, some being excreted in an even less completely metabolised condition.

NORTH-EAST LONDON CLINICAL SOCIETY.—At the first meeting of the ensuing session, which will be held on Thursday next, Oct. 1st, at 4 P.M. at the Prince of Wales General Hospital, Tottenham, Sir John Collie will give the opening address.

UNIVERSITY OF GLASGOW.—Dr. Walter James Dilling, of Aberdeen, has been appointed to the newly-founded Robert Pollok Research Lectureship in Materia Medica and Pharmacology in the University of Glasgow. Dr. Dilling was formerly Professor Kobert's assistant at Rostock, and he revised (for the ninth edition) Dr. Mitchell Bruce's "Materia Medica and Therapeutics." He has published many memoirs and articles on pharmacological subjects.

A CASE OF EXTRA-UTERINE PREGNANCY WITH PROLONGED RETENTION OF THE FŒTUS.

BY ELLEN M. FARRER, M.B., B.S. LOND.,
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IN THE LANCET of June 20th, 1914, p. 1748, there is a report of three cases of advanced extra-uterine pregnancy by Dr. R. Seheult, in two of which the fœtus appears to have been retained within the abdomen for a year or more before operation—in one for seven, in the other for five months after its death, which seems in each case to have occurred at about the seventh month. In the following case also the fœtus would seem to have died at the seventh month, but must have been retained for at least two years; and it had also undergone putrefaction, which does not seem to have occurred in Dr. Seheult's cases.

The patient, a Mahommedan woman of about 25 years of age, was first admitted into the Zenana Mission Hospital, Bhiwani, Punjab, on Feb. 6th, 1913, with an abdominal tumour, fever, and the following history. She had no children, but a year ago was apparently seven months pregnant. According to her statements there was then milk in the breasts and she felt fœtal movements. But during the seventh month she fell against a low bed, and after this the abdomen ceased to increase in size, and the catamenia reappeared, but were rather scanty, lasting three or four days, with some pain. Examination (in February, 1913) showed an apparently central hypogastric tumour of firm consistence, extending upwards about an inch above the umbilicus. Neither fœtal heart sounds nor uterine souffle could be detected. Per vaginam no fornix pulsation could be felt, and a hard swelling seemed to occupy the pelvis, slightly more to the right side than the left, and apparently connected with the cervix, which was somewhat soft and purplish-looking. The right Fallopian tube was easily palpated. The uterine sound was found to enter half an inch beyond normal length, turning towards the left side, and the cavity of the uterus seemed to be somewhat enlarged. There was no cachexia or emaciation.

The patient remained under observation for a week, during which time her temperature was of "hectic" type, ranging from about normal to 102·8° F. It seemed possible that this might be due to tuberculous disease of the lungs, for though well-nourished she gave a history of fever and cough for six months, and doubtful physical signs were detected at the right apex. After a week's stay she refused operative treatment and left the hospital. She was readmitted on March 17th, 1914—i.e., more than a year later—complaining of sterility, dysmenorrhœa, and pelvic pain, which she now said had been present for two years and five months—i.e., since the growth of the fœtus had ceased. There was now no fever and no obvious abdominal tumour, but on bimanual examination a mass could be felt mainly on the left side, dragging the uterus over in that direction. She was in good general condition, with no chest symptoms, and was now anxious for operation, which was performed on March 23rd, 1914.

Operation was as follows. On exploring the lower abdomen the mass above mentioned was found to be the sac of an extra-uterine fœtation, all the lower part of which was densely adherent to the surrounding viscera, so that its anatomical relations could not be defined. It ruptured during removal, and the contents were found to be putrid, with very offensive odour. The fœtus was disintegrated and represented only by separate cranial bones, ribs, &c., in a necrosed condition. In attempting to separate a thickened portion of the sac, probably representing the placental site, from the colon a large rent was made in the latter. The thickened edges of this were pared and secured with a double row of sutures; and as it seemed impossible to extirpate the whole of the sac, an attempt was made to suture the remains of its wall into the lower angle of the abdominal wound, where a large drainage-tube with a gauze wick and some gauze packing were inserted, the rest of the wound being closed with through and through sutures.

With regard to the after-progress, the patient's temperature rose the night after the operation to 102° and her pulse was 108 per minute. As it seemed obvious that she could not have escaped severe septic infection, 50 c.c. of antistreptococcic serum (B. W. and Co.) were injected next day, and she was kept in Fowler's position, with saline injections, &c. There was a little bronchitis at the end of the first week, and the patient continued very ill for about a fortnight, her temperature scarcely ever dropping below 100° at any time and varying from 101° to 103° in the evening; the pulse ranged from 100 to 120, but by April 2nd it had dropped to 96. There was very profuse suppuration from the remnants of the sac, and for a long while the dressings had to be changed twice daily, the pus being so offensive that it was feared a fæcal fistula must be forming. The patient escaped this complication, but had considerable pain in the left lumbar and hypochondriac regions, apparently due to the formation of a secondary abscess there, for it gradually subsided after the introduction of a drainage-tube along a track which was found to extend in that direction from the abdominal wound. This was gradually shortened, and finally left out on May 18th. Convalescence was prolonged, and the temperature continued to show an evening rise, usually to 99°–100°. On May 15th it rose suddenly to 104·2°, and on the 21st to 103·2°, probably owing to malaria. But when the patient left hospital on May 29th she appeared to be in fair health with no pain anywhere, and the wound was practically healed.

The special interest of this case lies in the length of time the fœtus must have remained encysted in the abdominal cavity without giving rise to urgent symptoms, in spite of its having undergone putrefaction. It would seem as if the patient must have developed a partial immunity to the septic infection; for her temperature, which was swinging at the time of her first sojourn in hospital, was normal (97·4°–99°) when she was readmitted a year later, and her general condition was good. The source of the putrefactive organisms was probably the bowel, from which they may have gained access to the fœtus *viâ* the placental site, or possibly through a small perforation there in the midst of the adhesions.

I am indebted to my colleague, Dr. M. R. Bisset, for the notes of the case during the patient's former stay in the hospital.

Punjab, India.

Reviews and Notices of Books.

Infant Feeding.

By CLIFFORD G. GRULEE, A.M., M.D. Second edition, thoroughly revised. Illustrated. London and Philadelphia: W. B. Saunders Company. 1914. Pp. 314. Price 13*s.* net.

A second edition of Dr. C. G. Grulee's work on the feeding of infants will be welcome both to students of infant mortality and to professional experts; but the work is altogether of too special a character to be of general use to the medical practitioner. It is a book written after the German scientific manner and in the most modern of ultra-laboratory styles. It represents, in fact, an Americanised version of the Czerny-Finkelstein-Keller school of thought. Exaggerated importance is attached to the results of animal experimentation and isolated clinical researches. Momentous problems in metabolism, which are subservient to the ever-changing factors of habit, experience, and idiosyncrasy, are regarded as amenable to solution on the most fragmentary scientific data. On one point, however, most of his English readers will agree with Dr. Grulee—namely, that for the successful management of infants the skill of the physician in interpreting the personal and individual factor in the child experimented upon is a matter of overwhelming importance.

So far as the artificial feeding of infants is concerned, the author's articles of faith can be summed up in a few words. He believes in the moderate dilution of a clean milk, which should be boiled or pasteurised. He does not believe in the addition of supplementary cream, but in the addition of dextrinised fruits or decoctions of mixed carbohydrates. He strongly advocates the long interval between feedings (four hours for preference), and rather large quantities of the food itself. While appreciating the educational value of the accurate percentage method and the quantitative control by Rubner's calorie determinations, he attaches little practical importance to the slavish following of these methods in actual practice; both of them, however, he regards as of value in safeguarding the infant against the ever-present and serious consequences of over-feeding. The great merit of Dr. Grulee's methods clearly lies in their simplicity and ease of application.

Although many of our own authorities will agree with the majority of the views expressed in this book, some of them are distinctly open to question, while others are clearly at variance with opinions held in this country. It is probable that most of his English readers will hold with Dr. Grulee that bacteriological explanations of the causation of summer diarrhœa are unconvincing, and that more is to be expected from the modified heat-stroke theory; and it is not to be expected that many will quarrel with him for dismissing the fat-starvation theory as an unsatisfactory solution for the problem of the causation of rickets. But, on the other hand, we cannot agree with Dr. Grulee that an infant will stop crying when the cause of complaint has been discovered and removed. So far from this being the case, we know that infants will cry from habit as well as from suggestion, and that increase of appetite in this respect seems to grow from what it feeds on. It is often a work of supererogation to try to discover the logic of an infant's cry. To be still further hypercritical, we do not think that the author attaches nearly sufficient importance to the disturbances of motor functions from which infants suffer. Colic and so-called wind are more often due to enterospasms and dysperistaltic movements than to anything else; so that we cannot help regarding it as a distortion of the facts to claim that wind and colic can in their ultimate analysis be referred to vaso-motor disturbances, although, no doubt, circulatory abnormalities play an important part in the etiology. Neither can we agree with the simple explanation that the author offers of the undoubted efficacy of hot fomentations and stupes applied to the abdomen in cases of colic. He believes that these measures cause a cessation of pain by a derivation of blood from the lower depths to the superficial areas. The influence of the nervous factor is here, as elsewhere, ignored.

We cannot commend the advice to give the newly born infant sips of water sweetened with saccharine. The importance of vigorous sucking on the part of the hungry and thirsty infant, on the involution of the uterus and on the evolution of the breasts is so great that we view with apprehension advice of this kind which is calculated to divert attention from so important a matter. In the same connexion we might point out that it is by no means certain that the elaboration of milk is promoted by long intervals between feeding. It is generally believed now that most of the milk is manufactured actually at the time of suckling when the draught comes in. Whether this be so or not, it is quite certain that many mammary glands which are small, soft, and flaccid between feedings supply an unexpectedly large quantity of milk, while large breasts which become hard and distended during the intervals are often most disappointing milk-producers. On p. 128 we notice the curious statement that "peptonisation of milk is much less used than formerly, due to the decided change of opinion in regard to the harmfulness of the protein." According to the idea of the author, peptonisation is never necessary. We were quite unaware that peptonisation with pepsin was ever a method employed in infant feeding, at least as described to these pages, although undoubtedly there is an increasing number of medical men in this country who employ the method of pancreatisation with the most satisfactory results in difficult cases. The pancreatisation must, however, be carried much further *in vitro* than the 20 minutes which the author suggests is all the time required for the peptonisation of milk.

Apart from these few points, we regard Dr. Grulee's book as one which most ably represents a sound school of thought.

Gas Poisoning in Mining and other Industries.

By JOHN GLAISTER, M.D. Glasg., Professor of Forensic Medicine in the University of Glasgow, and D. D. LOGAN, M.D. Glasg., Surgeon to the Coltness Ironworks. Edinburgh: E. and S. Livingstone. 1914. Pp. 471. Price 10*s.* 6*d.* net.

A RELIABLE monograph on carbon monoxide poisoning, the conditions of its occurrence, its prevention, and its treatment, has long been in demand. Cases of poisoning by this and other gases must occur almost daily at ironworks, steelworks, and collieries throughout the country, while the great increase of gas engines and the long distances which gas is conveyed give ample opportunities for major and minor degrees of accidents, the true nature of which must often be overlooked. Much investigation of the poisonous effect of different gases under different conditions has been undertaken in this country—notably, of course, by Dr. J. S. Haldane—but the results are in many cases contained in Blue-books or in publications such as the *Journal of Physiology*, to which medical men in general may not readily have access; while a large number of cases of gas poisoning of one kind or another which have been reported at different times or have come to notice through legal proceedings or compensation claims badly needed collecting and codifying. Professor Glaister and Dr. Logan have not only brought this material into the compass of a single volume, which is replete with information on all branches of the subject, but they have greatly added to the value of the work by the large amount of practical detail, the result of special experience, which they have incorporated with it.

We can cordially commend the volume, which should be in the hands of all practitioners whose work takes them among operatives, labourers, and others who are liable to be exposed to the risks of poisoning by carbon monoxide or other gases.

A Practical Handbook of the Tropical Diseases of Asia and Africa.

By H. C. LAMBART, M.A. T.C. Dub., M.D., Physician to the Gold Fields, Sudan; late Medical Officer to the Johore Government, &c. London: Charles Griffin and Co. 1914. Pp. 324, with 6 coloured plates and 82 other illustrations in the text. Price 8*s.* 6*d.* net.

THIS handbook embodies among other things the author's long experience of tropical diseases gained in various parts of Asia and Africa. The arrangement of the maladies is alphabetical, so that the reader can at a glance ascertain particulars of the diagnosis and treatment of any disease to which he wishes to refer. Separate sections are devoted to certain subjects, such as aids to diagnosis, bacteriological methods, special diets, geographical distribution of some tropical affections, fevers, eye diseases, and affections of the skin. Particular attention has been given to the subject of treatment, and in a "therapeutic index" Dr. Lambart suggests lines of treatment and the use of such remedies as have been found in his own experience in practice to be of value. The main facts relating to each disease are given in a condensed form, efforts having been made to avoid allusion to disputed points which have not yet been satisfactorily settled. The volume has been kept within handy proportions, such as will allow of its being carried about in the medical man's pocket for reference if required.

While Dr. Lambart has on the whole acquitted himself well in the performance of his task, there are a few statements to which exception may be taken by some. For instance, it is hardly correct to say that "rice poisoning" as the alleged cause of beri-beri has now the largest number of supporters. Dr. Lambart makes use of the obsolete term "ptomaine poisoning" in place of "bacterial food poisoning" now commonly employed, and he does not mention that bacilli of the Gaertner type are the usual cause of such cases. It is incorrect to imply, as Dr. Lambart apparently does, that the common method by which plague is spread is by fæcal pollution of the wound made by the flea in biting or fæcal pollution of the flea's proboscis. This method may no doubt occasionally occur, but it is not the usual one, as has been demonstrated by Bacot and Martin. We do not agree with Dr. Lambart's opinion as to the therapeutic virtues of Haffkine's prophylactic fluid in plague; and, on the other hand, we think he does not give sufficient emphasis to its great prophylactic value. It is surely incorrect to give the "quarantine period for plague as 21 days from the date of exposure." These and other small defects will no doubt be corrected by Dr. Lambart in the next edition.

This little volume, we think, is likely to prove of service to the student or practitioner of tropical medicine who wishes to obtain a ready reference to the main facts respecting the diagnosis and treatment of any tropical disease in which he is interested. The book is well printed, and some of the illustrations have been drawn from life by the author himself.

The Philosophy of Biology.

By JAMES JOHNSTONE, D.Sc. Cambridge: At the University Press. 1914. Pp. 391. Price 9*s.* net.

THE author of this work is a disciple of Bergson and Driesch, and presents an interpretation of a number of broad scientific problems in the light of the theories of those philosophers. He is, in short, animated by the ambitious desire to slay the dragon of scientific materialism and mechanism; and although some of us may look upon the attempt as quixotic, Dr. Johnstone sets up an able and vigorous defence of the metaphysical view, which can scarcely be ignored by the materialistic school.

The conception of a living organism as a mere machine, although of almost infinite complexity—a machine in which every process is induced by ordinary physico-chemical means—is one that is very generally adopted by physiologists, but has never found favour in England among the general reading public. Many arguments have at various times been brought against it. It was alleged to conflict with the first law of thermodynamics; and the allegation only lapsed when it was experimentally proved that the energy given out by an organism was precisely equal to that absorbed. Dr. Johnstone now cites against it the second law of thermodynamics, endeavouring to show that the energy-conversions within the organism are attended with a smaller dissipation of heat than that law would demand, and suggesting that minute organisms may possess some directive intelligence which will enable them to act like Clerk Maxwell's demons, and utilise the impacts of high-velocity molecules in Brownian movement for the accumulation of energy. The suggestion is interesting, if only as showing into what deep water the vitalists descend, discarding their earlier and simpler arguments.

Dr. Johnstone is somewhat inclined to assume that a destructive criticism of individual mechanistic theories is sufficient to subvert the entire mechanistic philosophy. Science proceeds by hypotheses, and as knowledge advances many such hypotheses necessarily have to be discarded; but it does not follow that because this, that, or the other hypothesis is erroneous, therefore no materialistic explanation is practicable. Dr. Johnstone thus attacks Weismann with considerable success; but he is doubtless aware that many mechanistic biologists never have believed in Weismann. Similarly he attacks Loeb; but the truth or error of certain of Loeb's suggestions is scarcely relevant to the larger question. He endeavours to show the inadequacy of natural selection to account for evolution; but here, again, materialism is no more bound up with natural selection than vitalism is bound up with metempsychosis; and, indeed, a great many materialistic biologists have always denied the omnipotence of natural selection. On the other hand, Dr. Johnstone cites arguments from Bergson against mechanism, which have already been fully answered by Sir Ray Lankester and other mechanistic biologists. He quotes arguments from Driesch which were demolished at length in *Science Progress* of January, 1912. He goes out of his way to attack epiphenomenalism, apparently unaware that it has already been abandoned by all mechanists who have closely studied that theory. He attacks the mechanism of last century rather than the mechanism of this century. Nevertheless, his book is conspicuous both for its wide knowledge and its ability, and is a valuable contribution to the most important of all philosophic problems. A few misprints may be noted—e.g., nineteenth century for twentieth century (p. 221); a note without anchorage in the text (p. 224); efferent for afferent (p. 273).

Principles and Practice of Operative Dentistry.

By JOHN SAYRE MARSHALL, M.D., Sc.D. Syr. Univ. Fourth edition. London and Philadelphia: J. B. Lippincott Company. 1914. Pp. 698. With 725 illustrations. Price 21*s.* net.

THE title of this work is certainly modest, inasmuch as we find in its pages a very full and excellent account of the anatomy and pathology of the teeth, in addition to a description of the various operations performed in dentistry. The part which deals with anatomy is beautifully illustrated and has been brought well up to date, for it contains ample reference to Mummery's demonstration of the nerves in dentine. In the portion dealing with pathology the author might with advantage omit the rather full references to past views, and give the student a clear and concise account of the generally accepted view of the present day. The description of operative proceedings is, we consider, capable of improvement, and this part of the book might with advantage be retrenched. It is strange, indeed, in the present day to find the turnkey suggested as a useful weapon for the removal of teeth.

Diseases of the Nervous System for the General Practitioner and Student.

By ALFRED GORDON, A.M., M.D. Paris, late Associate in Nervous and Mental Diseases, Jefferson Medical College. Second edition, revised and enlarged, with 169 illustrations. London: H. K. Lewis. 1914. Pp. 618. Price 17*s.* 6*d.* net.

Dr. Gordon has written a plain and practical account of diseases of the nervous system in which only the most essential points, whether in pathology, symptomatology, or treatment, are presented. The latest views and discoveries have been incorporated, while controversial matter is omitted or relegated to a subordinate position.

There is an introductory chapter on the anatomy and physiology of the central nervous system and another on methods of examination. Then the diseases of the nervous system are discussed in order, beginning with the cerebrum and ending with the peripheral nerves and muscles. Functional nervous diseases and diseases of the sympathetic system are the titles of chapters which contain much matter not commonly thus described, but for which there is place in a text-book of this sort. Syphilis of the nervous system has a chapter to itself, as have the traumatic neuroses and the cerebro-spinal fluid, including lumbar puncture and the Wassermann reaction.

Many of the illustrations are good; others have done service so often in neurological books that it would be a relief to see them no more. The photographic reproductions are not always very satisfactory. Taken as a whole, the book contains a sound exposition of modern knowledge of nervous disease, and it is well calculated to fulfil its purpose of providing the student and practitioner with a text-book in which the viewpoint is their own and not that of the expert neurologist.

LIBRARY TABLE.

Leitfaden der Säuglingskrankheiten. By WALTER BIRK. Bonn: A. Marcus and E. Webers. 1914. Pp. 256. Price M. 4.80.—This is a practical little book, exclusively concerned in the recognition and treatment of the common complaints of infancy. The author acquired his knowledge of the subject as an assistant in Professor Czerny's clinic, and the impress of this school is apparent in most of the pages. It certainly merits translation into English, and in this form would be very useful to students and practitioners in this country. We doubt very much whether in its untranslated form medical men in England would find adequate compensation in the undoubtedly excellent advice which it contains, for the difficulties and confusion which German ideas, preparations, and weights necessarily entail.

The Clinical Examination of the Blood and its Technique: A Manual for Students and Practitioners. By Professor A. PAPPENHEIM, Berlin Translated and adapted from the German by R. DONALDSON, M.A., M.B., Ch.B.Edin., F.R.C.S. Edin., D.P.H., Pathologist to the Royal Berks Hospital, Reading, &c. Bristol: John Wright and Sons. 1914. Pp. 87. Price 3*s.* 6*d.* net.—This is a useful and practical little book, giving, as it does, clear directions for the examination of the blood according to one definite method recommended by the author. The making of blood-films and their fixing and staining are first described, the dyes used being the May-Grünwald solution of eosin-methylene blue followed by Giemsa's new formula. An account of the various kinds of corpuscles is then given according to Pappenheim's scheme, and the conditions met with in various diseases characterised by alterations of the blood-picture are next set forth. The two final sections of the book describe methods of hæmocytometry and hæmoglobinometry, and there is an adequate index. Two useful coloured plates are inserted at the beginning of the book, illustrating the different types of cells. We do not quite understand why the letterpress description opposite Plate I. deals with many of the figures appearing on Plate II., otherwise we have nothing but praise for the contents of the volume. It is to be hoped that some agreement may be shortly obtained as to the nomenclature of the cells met with in the blood, which is at present a source of considerable confusion to students; and there is much to be said for following Pappenheim's views as herein set forth. Hence we hope the book may appeal to teachers and learners in this country.

Thomas Shortt, Principal Medical Officer in St. Helena. By ARNOLD CHAPLIN, M.D. Camb. London: Stanley Paul. Pp. 70. Price 2*s.* net.—Dr. Chaplin continues his researches into the medical history of Napoleon's residence at St. Helena. Our readers will remember his interesting little book, "The Illness and Death of Napoleon," which appeared in 1913.[1] The various British medical attendants of Napoleon had by no means an enviable position. On the one hand, they had to please and try to obtain the confidence of a patient who was really ill and in no position to cultivate that *æquanimitas* which is so valuable a possession for any sick man, while on the other they were exposed to the well-meaning but often tactless and hide-bound regulations and interference of Sir Hudson Lowe. In addition to details of the career of Shortt, Dr. Chaplin gives brief biographies of some of the other medical men who were associated with the illness of Napoleon—to wit, Rutledge, Henry, Verling, Arnott, O'Meara, Burton, and Baxter, but naturally Shortt, from his position as principal medical officer had the most difficult position to fill. Shortt had had a brilliant career before he went to St. Helena. Educated at Edinburgh, he entered the army in 1806 as assistant hospital surgeon when only 18 years old. He served in the Mediterranean, in Egypt, and in Sicily, and in 1815 after the war received the post of physician to the Forces when only 27. Placed on half pay, he settled in Edinburgh, but in 1820 was sent to St. Helena. His service there, with its trials and difficulties, must be read in Dr. Chaplin's interesting pages, together with the accounts given of the other medical men. Anything to do with Napoleon must always have an interest for the world, and it must be admitted that the story of St. Helena reflects but little credit either upon the France or the Britain of the time. However, if the medical side of the story is to be told, it is certainly clearly and dispassionately set forth in Dr. Chaplin's book.

JOURNALS AND MAGAZINES.

Journal of Pathology and Bacteriology. (Official Organ of the Pathological Society of Great Britain and Ireland.) Vol. XVIII., No. 4. Published from the Department of Pathology, University of Cambridge. Price 7*s.* 6*d.*; yearly subscription £1 1*s.*—N. S. Ferry, in a paper on the Bacteriology and Control of Acute Infections in Laboratory Animals, points out that B. bronchisepticus causes distemper in dogs, and also acute infections in the guinea-pig, rabbit, monkey, and ferret. Cultural and agglutination tests show that the organism is a distinct species; he notes that epizootics can be controlled and susceptible animals protected by the use of vaccines. A colon-like bacillus, probably B. enteritidis, was isolated from dogs suffering from an epizootic closely resembling an acute type of distemper. In a rapidly fatal epizootic disease of rabbits due to the bacillus of rabbit septicæmia, a prophylactic injection of vaccines appears to offer practically no protection.—W. Macewen, as the result of an Investigation concerning Döhle's Leucocytic "Inclusion Bodies" in Scarlet Fever and other Diseases, states that he has found the inclusion bodies, first described by Döhle in 1911, in cases of scarlet fever, diphtheria, serum sickness, measles, typhus, erysipelas, phthisis, and pneumonia. In German measles they were found in only 1 out of 40 cases, and he considers that their absence constitutes a differentiating feature between that complaint and mild cases of scarlet fever. Manson's borax methylene blue was found to be far the best stain for demonstrating the presence of these bodies.—W. Blair Bell, in a paper on the Causes of the Non-Coagulability of Normal Menstrual Blood and of Pathological Clotting, ascribes the failure of menstrual blood to clot to an unexplained absence of fibrin ferment.—R. Donaldson describes a Case of Puerperal Fever associated with the Enterococcus in a multipara. Mild puerperal septicæmia began on the eighth day after parturition; the patient recovered under autogenous vaccines. From the urine and from the inside of the uterus was recovered an organism, answering in all particulars to the enterococcus of Besson and Thiercelin. Blood cultures were negative.—Sheridan Delépine, in an Addendum to the Arsenious Jelly Method of Mounting Pathological Specimens, adds a few particulars to his description published in the last number of the journal.—M. A. Ruffer and J. G. Willmore, in a Note on a Tumour of the Pelvis dating from Roman Times (250 A.D.), describe, with illustrations, a tumour, probably osteosarcoma, starting in the cancellous tissue of the pelvis; the bone was found in the catacombs of Alexandria.—S. Wyard describes the Action of Asbestos Fibre on the Components of a Simple Hæmolytic System. He finds that various kinds of asbestos fibre placed in contact with amboceptor remove it at different rates, complement being removed at the same time. This power of asbestos fibre is diminished by steeping in normal saline, but can be restored by drying.—Hugh Maclean gives a Simple Method for the Preparation of Lecithin. A nearly pure product can be obtained by the author's method—viz., purifying crude lecithin obtained by alcohol extraction, emulsifying with water and treating with acetone. The product contains nitrogen and phosphorus in the ratio of 1 : 1.—Charles Singer describes a Transplantable Sarcoma arising in the Uterus of a Rat.—In an article on the Regulations of the Blood Volume in Normal and Nephritic Animals A. E. Boycott points out that in rabbits rendered nephritic by the injection of uranium nitrate, after the intravenous injection of gelatin solutions of 1·6 per cent. and 3·2 per cent. strength, the blood volume is restored to normal more slowly than in normal animals. The same difference between normal and nephritic animals seems to hold for injections of horse plasma.—E. Emrys Roberts, from a study of ten cases of Status Lymphaticus, concludes that this condition is frequently associated with sudden death from respiratory failure; that it is by no means necessarily accompanied by an enfeebled constitution, and is not incompatible with full development and activity of the genital organs in the female; that the respiratory failure is not usually due to an enlarged thymus interfering with the vagus or inducing reflex spasm of the glottis; this is anatomically impossible unless the gland extends upwards and backwards, though in certain cases the enlarged thymus may cause symptoms by pressing on neighbouring structures. He doubts whether this latter group of cases should be classed with status lymphaticus, for operative interference and anæsthetisation are well borne by patients suffering from these conditions.—W. R. Logan, in an account of the Intestinal Flora of Infants and Young Children, describes in detail the cultural reactions of the bacilli found in the stools of babies fed at the breast alone, the bottle alone, the breast and the bottle, and of children on a mixed diet approximating more or less to the adult type. In the first class Gram-positive acid-tolerant bacilli predominate; in the second the lactose-fermenting organisms are more prominent, while the acid-tolerant bacilli are less common. The infants on breast and bottle show a mixture of all these types of organisms. The child fed on mixed adult diet shows a greater variety, and no one organism dominates the rest.—R. A. Chisholm, following up Boycott's work, on the Regulation of the Blood Volume in Experimental Nephritis, from a study of the effect of the volume of the blood of normal and nephritic rabbits produced by the injection of Ringer's solution of different strengths, draws the conclusion that in potassium chromate nephritis there is an alteration in the permeability of the capillary wall which hinders the passage of fluid from the vessels to the tissues.—B. H. Wedd, A. C. Morson, and S. Russ, working on the Immunity conferred upon Mice by Radium-Irradiated Mouse Carcinoma, find that mice can be rendered immune to the inoculation of mouse carcinoma by means of irradiated tumour cells, but that this power of conferring immunity is gradually lost as length of time of irradiation is increased, and that 24 hours' exposure destroys it, although the irradiated tumour cells still possess the power of proliferating for a short time after inoculation. These authors assert that there is reason to suppose that the frequency of recurrence of the tumour after its removal by operation is lessened by reinoculation with irradiated tumour.'—Dr. Myer Coplans contributes three papers, one a Description of a Heat-compensated Conductivity Salinometer, an apparatus compensated for measuring the salinity of sea water by means of the alteration in conductivity; a second on a Continuous Type of Centrifugal Separator with Automatic Self-cleansing Mechanism, designed for the separation of liquids from solids, and fitted with a mechanism for automatic cleansing and for the discharge of the separated solids; and a third on Gel Filtration of Ultra-Microscopic and other Particles,' the Action of Asbestos, in which the author points out that aluminium hydrate mixed with floss asbestos is capable, under certain conditions, of restraining, by action not entirely mechanical, the passage through a filter of a wide range of substances, such as albumin, tetanus toxin, and methylene blue.—A. Stanley Griffith records Further Investigations on the Strains of Tubercle Bacilli isolated from Cases of Lupus, based on an examination of tubercle bacilli from 25 cases of lupus. In 12 the results, both cultural and by inoculation, pointed to a bovine virus; in 13 the virus was found to be of the human type.

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[1] THE LANCET, Jan. 11th, 1913, p. 115.

The American Journal of Tropical Diseases and Preventive Medicine. Vol. I., No. 12. (The Official Organ of the American Society of Tropical Medicine.) This number, which is more than usually interesting, completes the first volume of the journal. It contains four editorials and no less than seven original articles. The first of the editorials is written by Dr. A. McShane, and in it is discussed the phlebotomus papataci, the insect transmitter of the "three days fever." —The second editorial, by the same writer, deals with the claims put forward by Dr. Chas. F. D'A. Francis, of Brooklyn, that he has discovered a new form of treatment for cancer. He administers desiccated thyroid gland followed by a mixture containing certain salts along with hæmoglobin and cholesterin. By this method, he asserts, he has cured a dozen cases of cancer, some of them inoperable. The treatment is said to prevent proliferation of the cancer epithelium and hæmolysis, to increase oxidation, and to favour the action of the protective ferments.—Dr. Howard D. King, of New Orleans, in the third editorial, discusses the present Mexican situation and the probable consequences of a war between the United States and Mexico, viewed from the medical standpoint; such a conflict would, in his opinion, be inevitably followed by a frightful visitation of epidemic disease.—The last editorial is furnished by Dr. Wm. H. Deaderick on the South African Antimalarial Association, from which body the writer suggests that America might, if it would, learn useful lessons. He considers the leaflets and other printed matter circulated in South Africa by the Association "the most valuable literature for proper enlightenment on malaria that has ever been prepared."—In the original articles some further remarks on beri-beri are contributed by Captain Edward B. Vedder, of the Medical Corps of the United States Army, who deals with certain reported instances in which it is alleged that beri-beri occurred nothwithstanding the use of a liberal and varied diet, and on which cases it is argued that they afforded proof that beri-beri was not a deficiency disease. Captain Vedder refutes most of the arguments, and also points out that much of the evidence as to diet put forward is too vague and unsatisfactory to be used as the basis of argument.—Dr. H. R. Carter, senior surgeon to the United States Public Health Service, in the next original article discusses some educational methods for use in antimalarial work. He expresses the opinion that it is not so much research on malaria that is now needed in the United States, but rather education of the people and explanation to them of the best methods of getting the necessary antimalarial work done. It is field work that is wanted most at the present time in America.—Surgeon R. H. von Ezdorf writes on the subject of malarial investigations in the United States, carried out by members of the Public Health Service. He gives a brief account of the present and contemplated activities of that service as regards malaria.—Dr. Isaac W. Brewer supplies some "thoughts" upon the prevention of malaria and its relation to the drainage of swamps and other collections of water.—The last three original articles are contributed by Dr. Nathan Barlow (Honduras). These deal respectively with the administration of emetine to young and debilitated children, rheumatic malarial fever, and ulcus interdigitale fœtidum.

POST-GRADUATE STUDY.

POST-GRADUATE study is divided into three main divisions—the general study of professional subjects (including the special study of some branch), the study of State medicine, and the study of tropical medicine. The following article shows the principal arrangements existing for general post-graduate instruction for the coming year, but some of the arrangements will fall through owing to the war.

LONDON.

Medical Graduates' College and Polyclinic.—This institution affords to medical practitioners special facilities for acquiring technical skill and for advancing their clinical and scientific knowledge. The building contains lecture- and consulting-rooms, a pathological and clinical laboratory, a Roentgen-ray room, an ophthalmoscope-room, a museum, a library and reading- and waiting-rooms, &c. Cliniques are given on each working day of the week except Saturday at 4 P.M., and a lecture on medicine, surgery, or their special branches, is delivered daily except on Fridays and Saturdays, at 5.15 P.M. Practical laboratory instruction in the various branches of Clinical Pathology is also provided. Classes are also held in Otology, Laryngology, Rhinology, Ophthalmology, Radiography, Anatomy, Nervous Diseases, Microscopy, Urinary Analysis, Gynæcology, Practical Bacteriology, Sigmoidoscopy, Cystoscopy, Mental Diseases, Hygiene and Public Health, and Operative Surgery. Extra classes in any subject are formed to suit the convenience of practitioners unable to attend those already provided. Special tutorial classes are held for practitioners reading for the higher examinations. The annual subscription for medical practitioners of either sex is 1 guinea. Full information can be obtained from the Medical Superintendent at the College, 22, Chenies-street, Gower-street, W.C.

The Hospitals of the Seamen's Society.—In connexion with these hospitals there are two post-graduate schools—viz., (*a*) the London School of Tropical Medicine; and (*b*) the London School of Clinical Medicine.

(*a*) *The London School of Tropical Medicine.*—The school buildings, laboratories, museum, library, &c., are within the grounds of the Branch Hospital, Royal Victoria and Albert Dock (Station, Connaught-road, Great Eastern Railway). Opportunities are afforded to students and others who may be desirous of studying diseases incidental to tropical climates before entering the service or going abroad. In the hospitals of the society are to be found cases of tropical diseases such as may be met with in actual practice in the tropics. During the year the School has been greatly enlarged. A new laboratory, capable of accommodating 60 students and equipped in the very latest manner, has been added, and the old laboratories have been subdivided into special laboratories, preparation rooms, director's room, and incubation rooms, &c. The resident accommodation for students has also been greatly increased, and it is hoped that there is now sufficient accommodation for all who desire to live at the School. A new course in tropical sanitation and hygiene has been inaugurated and will occupy about three months twice every year. There are three courses in the year, each lasting three months, beginning on Oct. 1st, Jan. 15th, and May 1st respectively. The laboratory, museum, library, &c., are open daily, and clinical instruction is given daily in the wards of the hospital. The School Course is recognised by the University of Cambridge for its Diploma of Tropical Medicine and Hygiene. Classes are arranged for advanced Helminthology, Protozoology, and Entomology. The lecturers in the School are: Sir P. Manson, F.R.S., Dr. C. W. Daniels, Dr. G. C. Low, Dr. L. Westenra Sambon, Dr. J. M. H. Macleod, Professor R. Tanner Hewlett, Mr. James Cantlie, Colonel J. J. Pratt, Mr. E. Treacher Collins, Dr. F. M. Sandwith, Mr. K. W. Goadby, Dr. H. Williams, Professor W. J. Simpson, Colonel A. Alcock, I.M.S., C.I.E., F.R.S., Dr. R. T. Leiper, Dr. J. G. Thomson, and Dr. B. H. Wedd. The Director is Mr. H. B. G. Newham. Dean, Sir F. Lovell. Certificates are granted after examination to those who complete a full course. Students must be qualified or in the fifth year of their medical studies. Prizes: the Hon. Edward John Stanley Memorial Fund, £60, the Wandsworth Scholarship, £350, and the Duncan Medal. Syllabus and full particulars can be had from the Secretary, Mr. P. J. Michelli, Seamen's Hospital, Greenwich, S.E.

(*b*) *The London School of Clinical Medicine* (for qualified practitioners only).—Owing to the absence of a large proportion of the staff on various war duties no attempt at the teaching of clinical subjects will be made in the coming session (October–May). Operative Surgery and Pathology Classes will be held as usual. The lecture rooms, pathological laboratories (several), museum, and operative surgery class rooms are in the *Dreadnought* Hospital at Greenwich, and the whole hospital of 250 beds with its out-patient departments is open to students from 10 A.M. till 5.30 P.M. Medical, Surgical, and Special Department In-patient Clinics are held every afternoon except Saturday by the senior members of the staff, and operations are performed daily, whilst out-patients in the Medical, Surgical, and Special Departments are demonstrated by the assistant physicians and assistant surgeons daily in the forenoon. Two sessions are held yearly, one from October to February (five months), the other from April to July (four months), but the teaching is so arranged that students may join at any time. Every variety of disease may be studied in the wards and out-patient rooms of the hospital, at the dispensaries, and at the affiliated hospitals. Arrangements have been entered into with the Royal Waterloo Hospital for the reception of graduates who desire instruction in Diseases of Women and Children; with the Bethlem Royal Hospital for those who require tuition in Mental Diseases. These hospitals are situated on the south side of the river, are directly linked to the *Dreadnought* by both railway and tramway, and are affiliated to the London School of Clinical Medicine. Arrangements have also been made whereby certain members of the staff of the Miller General Hospital for South-East London have joined the list of extra-mural teachers, and will place their clinical material at the disposal of the students. The certificates of the School are recognised by the Admiralty, the War Office, the India Office, the Conjoint Examining Board of the Colleges of Physicians and Surgeons (for Operative Surgery), the Colonial Service, and the University of London (for the higher degrees). The supply of material affords exceptional facilities for practical instruction in Operative Surgery on the cadaver and in Pathology. The hospital also offers a wide field for the study of Venereal Diseases, and there is a special department with open-air wards for the treatment of Tuberculosis.

The teaching staff consists of: Sir Dyce Duckworth, Bart., Dr. Frederick Taylor, Sir John Rose Bradford, K C.M.G., F.R.S., Professor R. Tanner Hewlett, Dr. Guthrie Rankin, Dr. S. Russell Wells, Mr. William Turner, Mr. Lawrie H. McGavin, Mr. E. Rock Carling, Mr C. C. Choyce, Mr. L. Vernon Cargill, Sir Malcolm Morris, K.C.V.O., Mr. Richard Lake, Dr. Gordon Holmes, Lieutenant-Colonel Collis Barry, Dr. C. E. Zundel, Dr. H. B. Carlill, Dr. H. R. Prentice, Mr. P. P. Cole, Mr. C. Rowntree, Mr. E. G. Stanley, Mr. R. Bickerton, Dr. Henry McCormac, Mr. G. N. Biggs, Dr. Probyn-Williams, Dr. E. W. Gandy, and Dr. W. E. Robinson.

The extra-mural lecturers are: Dr. James Taylor, Dr. W. H. B. Stoddart, Professor W. J. R. Simpson, C.M G., Mr. James Cantlie, Dr. Herbert Williamson, Mr. Herbert S. Pendlebury, Mr. Ivor Back, Dr. Alexander Haig, Dr. R. O. Moon. Dr. Charles O. Hawthorne, Dr. Thomas D. Lister, Dr. Harold Pritchard, Dr. A. S. Woodwark, Mr. Keogh Murphy, Mr. W H. McMullen, Mr. W. Ashdowne. Mr. J. Cole Marshall, Dr. J. D. Barris, and Mr. Victor Bonney.

The Syllabus and other particulars of the School can be obtained on application to Mr. C. C. Choyce, the Dean, Seamen's Hospital, Greenwich, S.E.

West London Post-Graduate College, West London Hospital.—The West London Post-Graduate College was started in 1895, and three years later its basis was enlarged by the provision for the post-graduates of lecture-, reading-, writing-, and class-rooms, &c., while owing to the continued growth of the college these were transferred in 1901 to a building especially constructed for the purpose. Over 3000 post-graduates have been enrolled since its establishment, the yearly entry being now about 220. The hospital, which contains 160 beds, is in the main Hammersmith-road, about three miles from Hyde Park Corner, and very accessible by omnibus, tram, or train. The physicians and surgeons attend daily at 2.30 P.M. Post-graduates accompany the staff and the junior staff on their visits to the wards. Instruction is given in the out-patient department daily at 2.15 P.M. by the assistant physicians and assistant surgeons. The out-patient department has recently been enlarged, and there is ample accommodation for post-graduates to see and to examine the patients in all the special departments of the hospital. Clinical assistants are appointed from among the post-graduates to the Medical and Surgical out-patients and to the Special Departments. The fee for a clinical assistantship to non-members is £3 3*s*. for three months, which includes membership of the college on the days on which the clinical assistant attends. Practical classes, limited in number, for instruction in special subjects, as well as in medicine and surgery generally, are held as required. Operations are performed daily at 2 P.M. Post-graduates are allowed to stand close to the table and can see the operations perfectly. The surgeons often avail themselves of the assistance of post-graduates at operations. Instruction is given in the administration of anæsthetics by the anæsthetists on the operating days, and post-graduates are allowed to adminster anæsthetics under their superintendence. Post-mortem examinations are performed at 2 P.M., and demonstrations on recent pathological specimens are given on Mondays at 12 noon during each session in the pathological laboratory. Demonstrations are given each week on Practical Medicine on Monday, Tuesday, Thursday, and Friday mornings. Practical lectures and demonstrations are given each morning and evening (except Saturdays) during the session. Included in this course are lectures by outside specialists on Mental Diseases and on Public Health, and in connexion with the former instruction is also given in certain asylums. The college is licensed for the teaching of operative surgery. The fee is £4 4*s*. each member in a class of four. The practice of the hospital is well adapted to the needs of medical officers of the Royal Navy and officers of the Royal Army Medical Corps, Indian Medical Service, and Colonial Service who have obtained leave for further professional study, and the certificate of attendance at the college during such leave is recognised by the Admiralty and other authorities. The college is recognised by the University of London for hospital practice before the M.D. degree and by the Royal College of Surgeons for the necessary work before the Fellowship examination. The pathological laboratory has recently been completely reorganised and placed in the hands of the pathologist, Dr. Elworthy, who attends there every day and gives instruction in Bacteriology and Microscopy. A special class meets on three mornings a week from 10 to 1, and post-graduates joining the class can work in the laboratory at other times under the guidance of the pathologist. A class meets 12 times and commences at the beginning of each month. The fee for this class in Bacteriology and Microscopy is £5 5*s*. The fee for the hospital practice including all ordinary demonstrations and lectures, is £1 1*s*. for one week, £3 3*s*. for one month, £6 6*s*. for three months, £10 10*s*. for six months, £15 15*s*. for one year, and £30 for a life ticket; all fees to be paid in advance. A practitioner who cannot attend the whole course may attend any ten lectures or demonstrations during the session for a fee of £1 1*s*. A vacation class is held each year in August, the fee being £3 3*s*. for the course of one month, including hospital practice. The fee for a three months' course of instruction in the administration of anæsthetics, including a special class, is £3 3*s*., or without the class £2 2*s*. A ticket for any of the above courses will be issued at any date. Arrangements can be made for gentlemen working for higher university examinations to be coached. The Autumn Session will commence on Monday, Oct. 12th. All communications should be addressed to the Dean, Mr. Donald Armour, Post-Graduate College, or to Mr. Bishop Harman, Vice-Dean, West London Hospital, Hammersmith, W.

North-East London Post-Graduate College.—This post-graduate school is established in connexion with the Prince of Wales's General Hospital, Tottenham, N., which is recognised by the University of London as a place of post-graduate study for the M.D. and M.S. degrees, by the Admiralty and the India Office for purposes of study leave, and by the University of Cambridge for the D.P.H. diploma in respect of bacteriology. Facilities are there afforded to qualified medical practitioners for taking part in the work of an active general hospital of 125 beds and for attending demonstrations in various branches of medicine, surgery, and gynæcology, with opportunities for clinical instruction in Diseases of the Eye, Ear, Throat, Nose, Skin, and Fevers, Psychological Medicine, the Administration of Anæsthetics, Radiography, and Dentistry. Cliniques, lectures, and demonstrations are given by members of the teaching staff in the lecture-room, in the wards, in the various out-patient departments, and in certain affiliated institutions. Operations are performed on every afternoon of the week except Saturday. Special limited classes are arranged in Modern Methods of the Study and Treatment of Diseases of the Lungs and Heart, Gynæcology, Diseases of the Throat, Nose, and Ear, Diagnosis of Diseases of the Nervous System, Ophthalmoscopy and Refraction, Diseases of the Skin, Abdominal Surgery, Radiography, Bacteriology, Clinical Pathology, Vaccine Therapy, and Medical Electricity. The fee for a three months' course of study, which may be begun at any time, in any single department, is 1 guinea. A fee of 3 guineas admits to the whole practice of the hospital for a similar term (one month 1 guinea), and a perpetual ticket for the practice of the hospital may be obtained on payment of a fee of 10 guineas. A certificate, signed by the staff, may be obtained at the end of three months' hospital attendance. A pathological museum and a pathological laboratory for original research are available. A reading- and a writing-room, containing a reference and lending library, is provided, and tea may be obtained. The hospital is connected with the Telephone Exchange (No. 23, Tottenham).

The lectures are as follows:—In General Medicine: Dr. R. Murray Leslie, Dr. G. P. Chappel, Dr. A. J. Whiting, Dr. A. G. Auld, and Dr. T. R. Whipham. In General Surgery: Mr. H. W. Carson, Mr. J. Howell Evans, and Mr. E. Gillespie. In Gynæcology: Dr. Arthur Giles and Dr. J. Bright Banister. In Diseases of the Eye: Mr. R. Philip Brooks and Mr. E. A. Dorrell. In Diseases of the Ear, Throat, and Nose: Mr. H. D. Gillies. In Diseases of the Skin: Dr. G. Norman Meachen. In Fevers (at the North-Eastern Fever Hospital, St. Anne's-road): Dr. Frederic Thomson. In Psychological Medicine (at the Colney Hatch Asylum): Dr. S. E. Elgee. In Tropical Medicine: Mr. James Cantlie. In Radiography and Medical Electricity: Dr. Metcalfe. In the Administration of Anæsthetics: Dr. Hadfield and Dr. Shannon. In Vaccine Therapy and Bacteriology: Dr. Benians.

Further information may be obtained from the Dean.

Royal Hospital for Diseases of the Chest, City-road, E.C.—This hospital, which has lately undergone extensive reorganisation, provides an excellent field for research and study in diseases of the chest, more especially in tuberculosis, in its various departments. The departments in which study can be pursued comprise the In-patient, Out-patient, Röntgen Ray, Cardiological, Pathological and Bacteriological, Ear, Nose, and Throat, and Dental Departments. An extensive department for the Prevention of Consumption (Tuberculosis Dispensary) has been established. A splendid opportunity thus presents itself for medical practitioners and students who desire to obtain an intimate knowledge of tuberculosis. The Bacteriological and Pathological Research Laboratories, under the new director, Dr. Carnegie Dickson, should provide excellent opportunities for acquiring a knowledge of bacteriological methods, and also a field for research for those who wish to pursue such studies. The Cardiological Department, which has recently been established, has been equipped with all the latest apparatus for the investigation of diseases of the heart. In connexion with the Röntgen Ray Department there are two radiologists, who attend the hospital four days weekly. Attached to the hospital is a Medical School for Instruction in Diseases of the Chest, more especially Tuberculosis, at which courses of instruction are given from time to time. There is also a Tuberculosis School for Nurses, where regular theoretical and thoroughly practical courses of instruction are given, for which a certificate is granted. The fees for attending the clinical practice of the hospital are as follows: One month, 1 guinea; three months, 3 guineas; six months, 5 guineas; perpetual ticket, 6 guineas. Any further information will be gladly given by the Dean, Dr. Barty King.

Central London Ophthalmic Hospital, Judd-street, St. Pancras, W.C.—For the various classes of instruction in Ophthalmology held at this hospital application should be made to the Dean. Classes of instruction will be held during the Winter Session and are open to both men and women students. The course will include: The Use of the Ophthalmoscope, Errors of Refraction and Muscular Anomalies, Medical Ophthalmology, External Diseases of the Eye, Anatomy of the Eye, Operative Surgery, Pathology of the Eye, Bacteriology of the Eye, X Ray Instruction, and Clinical Lectures. The post of Clinical Assistant at the hospital is open to men and women students, and a composition fee of £5 5*s.* entitles students to a perpetual ticket, and £3 3*s.* to three months' hospital practice. Either fee will admit students to the first four classes.

Hospital for Sick Children, Great Ormond-street, W.C., and *Queen's Hospital for Children*, Hackney-road, E.—The special courses of instruction usually held at these hospitals have been abandoned on account of the war.

PROVINCIAL.

Birmingham.—At the University of Birmingham special courses for post-graduates have not yet been instituted, except in the subject of Advanced Bacteriology (January to March) and Clinical Pathology and Bacteriology (April to June) and a course of Veterinary Pathology and Bacteriology for Veterinary Practitioners (October to December), but the various departments of the University are open to graduates who can attend any of the systematic courses on payment of a fee. Graduates may also work in the laboratories under the supervision of the professors for a small fee to cover the incidental expenses. Applications for information should be made to the Dean. All classes at the University and hospitals are open to men and women.

Bristol.—Post-graduate instruction for those desiring to take M.D. degrees, for applicants for tuberculosis officerships, and for other general purposes, is provided in the Faculty of Medicine of the University of Bristol. For details, apply to the Dean of the Faculty of Medicine, University of Bristol.

Cambridge.—Long vacation courses are held at Cambridge during the month of July and the first three weeks in August. This year the course included lectures and demonstrations on general and special pathology by Professor G. Sims Woodhead, Mr. T. S. P. Strangeways, and Dr. W. M. Scott, on bacteriology for medical students by Dr. Louis Cobbett, an advanced course on bacteriology for students of sanitary science by Dr. G. S. Graham Smith, a course in pharmacology by Professor J. B. Bradbury and Dr. W. E. Dixon, courses of lectures in surgery, surgical anatomy, and bandaging, &c., by Professor Howard Marsh and Dr. H. B. Roderick. The pathological and pharmacological laboratories are open to advanced students and graduates. Similar advanced courses in pathology and therapeutics are arranged for in the Lent, Easter, and Michaelmas terms for senior medical students and qualified medical men, and in the Lent term in bacteriology for students of sanitary science. Applications for information should be made early to Mr. E. E. Stubbing, Pathological Laboratory Museum, Downing-street, Cambridge.

Leeds.—The Anatomical, Physiological, and Pathological Laboratories at the University of Leeds are at the disposal of qualified medical men for research or for routine work at specially arranged fees, and though there is no definite post-graduate course at the General Infirmary, the work of this large teaching institution is very freely accessible to qualified medical men at reduced fees. It offers a wide field for clinical study, having special departments for the treatment of diseases of women, for diseases of the eye, ear, nose and throat, skin and nutritional diseases of children. There are also facilities for acquiring a knowledge of the uses of electricity and of radiography in diagnosis and treatment. The General Infirmary offers a perpetual ticket to practitioners for £10 10*s*, or in two separate payments of £5 10*s*. At the Public Dispensary, North-street, 35,000 medical and surgical cases are treated annually, partly as out-patients and partly at their homes; the Hospital for Women, Little Woodhouse-street, has 53 beds devoted to gynæcology, obstetrics, and diseases associated with pregnancy and labour; the Leeds Maternity Hospital, 42, Hyde-terrace, has 33 beds; and the Leeds City Fever and Small-pox Hospitals are an important group of hospitals where all the infectious cases of the city are treated. The West Riding Lunatic Asylum, Wakefield, accommodates 2023 patients, and offers unusual advantages to those who desire to make themselves conversant with the treatment and management of the insane.

Liverpool.—At the University of Liverpool the department of Bio-chemistry is devoted chiefly to post-graduate teaching and research work upon chemistry in relationship to biology and medicine. The laboratory possesses a main room designed specially for research students in bio-chemistry. In this room there is ample accommodation for ten workers, each with independent working space. Special advanced courses in bacteriology are given in connexion with both the Medical and Veterinary Schools during the winter and summer terms, and special classes are arranged for candidates for the Diplomas in Public Health, Ophthalmology, and Veterinary Hygiene, and for the degree of Master of Hygiene. This department is in charge of Professor J. M. Beattie. Instruction may be obtained at the Johnston Laboratory and also at the farm station of the Incorporated Institute of Comparative Pathology on the methods of manufacture and testing of the various curative and preventive vaccines and sera used in medical and veterinary practice. In the department of Public Health a course of 41 lectures and demonstrations on the diagnosis, treatment, and administrative control of pulmonary tuberculosis will be given. The course has been specially designed to meet the requirements of those seeking appointments as tuberculosis officers. It has also been adapted to meet the needs of those general practitioners who wish to become familiar with recent advances in medicine with regard to tuberculosis. One of the most important post-graduate departments of the University is the Tropical School. Here there are always a large number of students either carrying on research work under the direction of one of its three professors, or studying for the Diploma of Tropical Medicine of the Liverpool University or of some other examining body. Post-graduate courses are also given in surgical and applied anatomy, operative surgery, ophthalmology, surgical diseases of children, skin and throat diseases, by the several lecturers appointed for those special courses of instruction. All post-graduate classes at the University are open to persons of either sex.

Manchester.—The plan adopted a few years ago at the University of Manchester of having special courses of lectures on medicine and surgery for qualified medical men has since that time been considerably modified. Classes are now held and lectures given on various special subjects, as, e.g., diseases of the heart, diseases of the respiratory organs, of the kidney, the pathology of the skin, neurology, and so on, and the same obtains as to surgical matters. These lectures are designed to meet the wants of senior students and practitioners. During the past summer post-graduate clinical demonstrations have been given twice a week at the infirmary by members of the staff, and it is expected that a series of demonstrations will be arranged for next summer. Classes for senior students and post-graduates are also held at the Ancoats Hospital. There are good opportunities also for post-graduate study at the special hospitals for diseases of the eye, throat, ear, and skin, &c., but no special demonstrations are given. The Public Health Department, under the direction of Professor S. Delépine, is largely attended by medical men, as are also the lectures given in the University and the Hygiene course by Dr. E. J. Sidebotham. Facilities are also given for the pursuit of research work in the public health laboratories, and in this department the dates of post-graduate courses in pathology and bacteriology are announced in the laboratory and in the medical journals. There is no difficulty in Manchester in the way of any practitioner who wants to have his recollections revived or his knowledge enlarged and brought up to the present standard in accomplishing his wish. Facilities for research and post-graduate work are offered to women on the same terms as men.

Newcastle-upon-Tyne.—At the University of Durham courses of instruction are given in chemical and physical laboratory work and lectures are delivered on comparative pathology and practical bacteriology for the Diploma in Public Health and the degree of Bachelor in Hygiene. All courses are open to women students and graduates.

Sheffield.—At the University of Sheffield post-graduate courses are held annually during the winter months. These courses are specially arranged for practitioners, and include lectures on special subjects, laboratory courses, and clinical work, both general and special. A separate laboratory is reserved in the pathology department for post-graduate research workers, the use of which and of all apparatus is free. Periods of hospital practice may be taken out by registered practitioners at a small fee.

SCOTLAND.

Aberdeen.—Although there is no special provision at Aberdeen for post-graduate study such as exists in London, still there are some facilities for doing work of this nature at the University. There are fully equipped laboratories in anatomy, anthropometry, bacteriology, botany, chemistry, pharmacology, physics, physiology, public health, and zoology. Graduates or others desiring to engage in special study or research may be admitted by the Senatus to prosecute such study or research in any of the laboratories in accordance with certain provisions. Research students are exempted from payment of laboratory fees, but are required to matriculate each year, paying the ordinary matriculation fee (£1 1*s.* for winter and summer; 10*s.* 6*d.* for summer). Forms of application for admission as research students may be had from the Secretary of the Senatus. The fees are £3 3*s.* for six hours per week in winter or nine hours per week in summer, 10*s.* 6*d.* and 7*s.* being charged for every extra hour per week in winter and summer respectively. The fee for the Public Health Laboratory for six months is £6 6*s.*, and for the Bacteriological Laboratory for three months is £4 4*s.*, £3 3*s.* and £1 11*s.* 6*d.* being respectively charged for a half course or any less time. At the Royal Lunatic Asylum, accommodating above 700 patients (fees £2 2*s.* for three months), arrangements are made for extra teaching in the higher departments of medical psychology and cerebral pathology for graduates who desire it or wish to obtain the certificate of the Medico-Psychological Association of Great Britain and Ireland. Clinical work may be done at the following places:—(General Hospital): Aberdeen Royal Infirmary (accommodating 200 patients; perpetual ticket £10, or first year £5 10*s.* and second year £5, thereafter free); Sick Children's Hospital (75 patients; first year £2 2*s.*, then £1 1*s.*); City (Fever) Hospital (100 beds; £1 1*s.* for three months); General Dispensary and Lying-in and Vaccine Institution (10,000 out-patients per annum; a fee of £3 3*s.* for the general practice of the Institution, a fee of £1 1*s.* for the certificate of Vaccination, and a fee of £3 3*s.* for the Maternity Practice); and Ophthalmic Institution (16,000 patients per annum; fee £2 2*s.*). During the summer session (April to June) special classes, each costing £2 2*s.*, are held at the Royal Infirmary, the subjects being Diseases of the Skin, Medical Electricity, Dental Surgery, Anæsthetics, Ophthalmology, Gynæcology, and Diseases of Ear, Nose, and Throat. Lectures on Diseases of the Ear and Throat are also given at the Dispensary. All these facilities for post-graduate study are open to medical practitioners generally.

Edinburgh.—Post-graduate teaching now occupies a recognised place in the Edinburgh School, the arrangements connected therewith being entrusted to a committee consisting of representatives appointed by the Faculty of Medicine of the University and the Royal Colleges. Exceptional facilities for post-graduate instruction are afforded during the summer vacation. Five courses are held at this time—viz., a course on Diseases and Defects of Children, with additional Demonstrations, during the second fortnight of July; a special course on Obstetrics and Gynæcology during the same time, a course on Internal Medicine during August, and both a Surgical and General Course during September. (*a*) The course on Diseases and Defects of Children will comprise Medical and Surgical Clinics, and Clinics on Out-patients, also Clinics and Demonstrations on special subjects, the needs of Medical Inspectors of School Children being specially kept in view. (*b*) The course on Obstetrics and Gynæcology will comprise obstetric and gynæcological clinics, demonstrations, lectures, and operations. A special feature is the practical class on gynæcological pathology, to be held daily during the course. (*c*) The course on Internal Medicine, which will extend for four weeks, will comprise classes upon medical applied anatomy (10 hours), the methods of X ray diagnosis and electrical treatment (10 hours), the clinical examination of the blood (10 hours), clinical bacteriology (15 hours), the examination of the heart (10 hours), the examination of the nervous system (10 hours), the examination of urine and digestive products (10 hours), the physiology and pathology of the nervous system (5 hours), and a class on food and dietetics (5 hours), in addition to a series of 40 specially arranged clinics dealing with diseases of the heart, lungs, blood and ductless glands, nervous system, stomach and kidneys, abdomen, and general diseases. Once a week there will be a clinic on the medical aspects of morbid pregnancy, &c., the place of meeting being the Royal Maternity Hospital. The entries for this course will be limited to 25, and the fee will be 10 guineas. Graduates may, after the beginning of the course, enter for vacant places, if there are any such, during the second fortnight, at a fee of 6 guineas. Entries cannot be received for isolated subjects. (*d*) The Surgical Course will include classes upon surgical anatomy (20 hours), surgical pathology (20 hours), and operative surgery upon the cadaver (30 hours), in addition to specially arranged daily clinics. The entries for the Surgical Course will be limited to 25, and the fee will be 10 guineas. Entrants for the Surgical Course may also attend any of the classes or clinics included under the General Course. (*e*) The General Course, subdivided into two independent fortnights, will also continue for four weeks. Among the subjects included in this course are medical anatomy, the medical and surgical affections of children, the medical inspection of school children, lectures upon infant feeding, demonstrations upon the pathology of the eye, clinics on medicine, surgery, infectious diseases, neurology, venereal diseases, diseases of the eye, demonstrations on morbid anatomy, &c. The fee for the course will be 5 guineas, or 3 guineas for either fortnight. In addition to the subjects above mentioned the following classes, the attendance upon which is necessarily limited, are open to graduates who have entered for the General and Surgical Course upon payment of an additional fee of 1 guinea in each instance: bacteriology, vaccine therapy, diseases of the blood, diseases of the ear, nose, and throat, ophthalmoscopy, errors of refraction, gynæcology, histological methods employed in medical diagnosis, X ray, electrical, and radium work, clinical gynæcology, and obstetric and gynæcological pathology. There are also special courses on the Ear, Nose, and Throat, and on the Surgical Diseases of the Genito-Urinary Tract. The fee is 6 guineas, and will also permit of attendance on all the classes included in the second fortnight of the General Course. Further special lectures have been arranged for. These lectures are open to local practitioners as well as to graduates attending the September courses. Accommodation may be obtained during September at one of the residences of the University Hall. Information regarding other accommodation may be obtained from the Secretary. The committee of the University Union has decided to open the building during September, and gentlemen attending the course are eligible for temporary membership for one month on payment of a fee of 10*s*. The Union, which adjoins the University buildings, contains a good medical library, reading-rooms, dining-hall, smoking-room, billiard-room, &c. Copies of the syllabus of both the August and September courses may be obtained from the Secretary, Faculty Office, University New Buildings, Edinburgh. The course of instruction is open to graduates of either sex.

Glasgow.—Owing to the organising work of the hospital staffs in connexion with the war, all the post-graduate syllabuses have been cancelled.

IRELAND.

Belfast.—At the Queen's University of Belfast a course in Clinical Pathology, consisting chiefly in practical instruction, has been given hitherto during the summer session, and, should a sufficient number desire to attend, a post-graduate course of practical work in the application of methods of chemical physiology to clinical investigation is also held open to practitioners. A course in Clinical Pathology or Bacteriology is given to medical practitioners, and members of this class have an opportunity of seeing the methods employed in the various investigations carried out in this department for the public health committee of the Belfast corporation in connexion with water-supply, sewage disposal, meat- and milk-supply, and the diagnosis of cases of infectious diseases. Subject to the number of students presenting themselves, arrangements are made for the necessary practical instruction (1) in the chemical laboratories; (2) in the pathological and bacteriological laboratories; and (3) for outdoor sanitary work under the medical officer of health of Belfast. These courses have been approved by the Privy Council in connexion with the degree of M.D. in State Medicine in the University of London. The certificates of these courses are also accepted for the Diploma in Public Health granted by the Queen's University of Belfast, the University of Cambridge, and the various licensing bodies.

Post-Graduate Research Fund.—Grants from this fund may be obtained by graduates in medicine of the University of Belfast of not more than three years' standing. Such research grants are available for graduates who desire to prosecute original research or clinical study in some department of medicine. Applicants must give such evidence of capacity for the work which they desire to prosecute as shall appear satisfactory to the Faculty of Medicine. The holders of such grants must furnish reports of their work either during the prosecution of, or at the close of, their studies. Further information regarding these research grants may be obtained from the Secretary of the University, to whom all applications must be forwarded.

The new Public Health Laboratories at Queen's University, which were completed and furnished last session, are now in full working order and are available for post-graduate research.

Cork.—At University College a post-graduate course is held for the Diploma in Public Health, including Chemistry and Bacteriology. No post-graduate courses have up the present been held at the hospitals. All the College and hospital courses are open to men and women students.

Dublin.—Trinity College and the Royal College of Surgeons each make arrangements for a course of post-graduate instruction in the year. Instruction is usually given in the following 11 subjects: Medicine, Surgery, Gynæcology, Diseases of Eye, Diseases of Throat, Nose, and Ear, Diseases of Skin, Pathology, Anatomy, Physiology, X Ray Work, and Cystoscopy. The courses in pathology, anatomy, and physiology are designed with special bearings on clinical problems. The classes are held in the School of Physic, Trinity College, and in Sir Patrick Dun's, the Adelaide, the Royal City of Dublin, the Rotunda, and the Royal Victoria Eye and Ear Hospitals. Arrangements are made by which a limited number of members of the class can reside in College rooms and dine on commons, at an inclusive cost of £1 1*s*. per week. The composite fee for the entire course is £5 5*s*. The autumn course for 1914 began on Sept. 14th and will end on Oct. 3rd. Full particulars can be obtained from the honorary secretary, Dr. Alfred R. Parsons, 27, Lower Fitzwilliam-street, Dublin.

A post-graduate course is also arranged under the auspices of the President and Council of the Royal College of Surgeons in Ireland. The object of this course is to render available the whole of the clinical material in the city for the post-graduate student, so that he may see as much as possible during the brief time at his disposal. With this object in view the ten general hospitals of the city are included (Richmond, Jervis-street, Adelaide, St. Vincent's, Dr. Steevens', Mater Misericordiæ, Meath, Mercer's, Royal City of Dublin, and Sir Patrick Dun's), and also the various hospitals which are devoted to specialties. In addition to the clinical work, instruction is given in Operations on the Cadaver, Anatomy, and Sanitary Science. The course for 1914 began on Monday. Sept. 21st, and will terminate on Oct. 10th following. Fee for course, inclusive of all, £5 5*s*. For Surgery only £3 3*s*., for Medicine only £3 3*s*., for special course £1 1*s*.

Full details regarding the course can be obtained from, and all applications are to be addressed to, the Secretary of the Post-Graduate Course, Royal College of Surgeons in Ireland.

In addition to the special courses detailed above, arrangements can be made at almost any time at the various laboratories and hospitals for individual post-graduate work. In particular the practice of the maternity hospitals, the Rotunda, the Coombe, and the National Lying-in, is made much use of by graduates from all parts of the world. All courses are open to women practitioners on the same terms as to men.

THE CLAIMS OF BRITISH SPAS.

THE movement on foot to bring the merits and claims of our home health resorts into strong prominence at the present time when so many well-known continental watering-places are inaccessible deserves support. Amongst the first to take steps in this direction is the Cheltenham town council, which is issuing a circular to the medical profession in which attention is drawn to the advantages of this charming town as a watering-place providing natural medicinal waters, baths, and all the appliances which go to complete a well-equipped hydrotherapeutic station. For a good many years we have pointed out that there is not a single natural mineral water on the continent which has not its counterpart in this country. We have radio-active thermal springs at Buxton, Bath, and Matlock; we have aperient waters at Cheltenham; we have sulphur waters at Harrogate, Strathpeffer, and Llanwrtyd; saline springs at Woodhall (iodine), Peebles and Leamington; barium and calcium saline waters at Llangammarch; brine baths at Droitwich and Malvern; and chalybeate, sulphur, and saline baths at Llandrindod and other places. These British spas possess between them the natural inducements offered at Homburg, Wiesbaden, Kreuznach, Baden-Baden, Nauheim, Ems, Carlsbad, and Marienbad. Further, they have in recent years supplemented their natural resources by installing facilities for treatment under various physical methods (including electrical, radiant, and massage treatment) which are recognised to be decidedly beneficial in a large number of cases.

This week we deal with Cheltenham; later we propose to describe the opportunities for sound treatment offered by other watering-places in this country which, provided that a strict régime during treatment is insisted upon, will give results in no degree inferior to those obtained abroad.

THE WATERS OF CHELTENHAM.

Cheltenham is a charming old town surrounded by a most beautiful and attractive undulating country. Its Georgian aspect is due to the popularity which it enjoyed as a spa a century and a half ago. At that time, of course, facilities for travelling abroad did not exist, and it may be said generally that the advent of the railway and transport by steam power militated more than anything else against the popularity enjoyed by our own watering-places. The novelty of going abroad for treatment, so long as there was a minimum of inconvenience in travelling, appealed to the public. The convenience of going abroad has for the moment disappeared, and there must be a *clientèle* for the opportunities offered by a home spa which includes, amongst other things, a course of waters.

At Cheltenham there are four waters chiefly in use, and they are known as the Cheltenham magnesia water, the Cheltenham alkaline water, the Cheltenham sodium sulphate and saline water, and the Cheltenham natural aperient water. The cases likely to receive benefit from a regular course of one or other of these waters cover, of course, a wide therapeutic ground which will be appreciated by medical men. The administration decided upon is entirely at the discretion and under the supervision of the physician. At Montpellier the corporation has provided a complete and attractive set of baths and douche and massage apartments with suitable and comfortable dressing-rooms. Brine baths are available, or any bath which may be prescribed by the medical attendant. The equipment includes the modern development of the Aix douche and massage-room. The treatment by baths, douching, and massage is much appreciated by sufferers from gout and rheumatism, while this line of treatment has been successful, under medical direction, in neurasthenic conditions and in those cases where general tone is poor.

The social attractions at Cheltenham have been raised to a standard which is now recognised by most communities where facilities for collective treatment of disease occur. It is well to bear in mind that the success attending the spas abroad has been due largely to the attention that has been given to social amenities. The requirements of patients are very carefully studied in this direction at Cheltenham, for, however valuable treatment by natural waters and a restraint in diet may be, the very discipline of this becomes irksome, and compensation is needed in the various social arrangements which provide healthy and amusing diversion for the mind. In this direction hitherto the policy of the authorities controlling the administration of our home health resorts has been shortsighted. There are, however, signs that in many places a more lively and liberal administration will prevail, and we are glad to learn that Cheltenham is amongst them. A regular attempt is being made to help the patient's cure by providing him with amusement.

Setting out the qualifications of a health resort, first, there must be natural waters of medicinal value, coupled with a general equipment providing physical treatment; secondly, the spa must have natural beauties of situation; and, thirdly, there must be provided a relaxation of medical routine in the shape of amusements of a first-rate order. Our spa authorities are rapidly applying these lessons to practice and will thus secure a patronage commensurate with that enjoyed abroad. Their efforts should be stimulated by opportunity, as at the present moment many of our countrymen are cut off from exercising their conviction that only on the continent can these things be efficiently done. Cheltenham, having the qualifications, is seizing the opportunity.

DONATIONS AND BEQUESTS.—The late Mr. Charles Lawler, of Dublin, has left among other bequests £15,000 for the construction and equipment of a dispensary to be attached to St. Vincent's Hospital, Stephen's-green, Dublin; £1000 each to the Meath Hospital, the Royal Hospital for Incurables, Donnybrook, Dublin, and the Hospital for the Dying, Harold's Cross, Dublin; and £500 each to St. Vincent's Hospital, Dublin, the Deaf and Dumb Institution, Cabra, and St. Mary's Asylum for Female Blind.

THE LANCET.

LONDON: SATURDAY, SEPTEMBER 26, 1914.

The Government Grants for Maternity and Child Welfare.

IN an article on "The State, the Mother, and the Child" in THE LANCET of April 25th last, we drew attention to the strength of the movement for local authorities undertaking systematic provision for the care of the expectant mother, for midwifery, and for the supervision and medical treatment of the child up to the age when school medical inspection and treatment begin. We there indicated that aid to this movement was likely to be forthcoming in the form of substantial Government grants, and that both the Local Government Board and the Board of Education, as concerned with public health and educational local authorities respectively, might be expected to take part in the necessary central organisation for the purpose. The last Budget, which was voted without discussion, includes a sum to be distributed by the Local Government Board in aid of expenditure of local authorities in respect of "clinics, dispensaries, or other institutions primarily concerned with provision for maternity and child welfare," as well as in respect of the salaries of health visitors and other officers engaged for this work. The Board of Education also has now announced that grants will be made to institutions providing "schools for mothers," a term which is allowed to cover a wide field of activity.

In a circular issued on July 30th the Local Government Board drew attention to the prospective grants, bringing to the notice of the local authorities a scheme, prepared by the Board's medical officer, which set out the principal subjects for which it is desired that the local authorities applying for grants should make provision. Dr. A. NEWSHOLME divides the arrangements required under four heads: the supervision of midwives, and the making of arrangements in connexion with the mother and child in ante-natal, natal, and post-natal periods respectively. The ante-natal arrangements should include clinics for expectant mothers, home visiting, and a maternity hospital or beds at a hospital in which complicated cases of pregnancy can be received. The natal arrangements should provide such assistance as is needed to ensure the mother having skilled and prompt attendance during confinement at home, and hospital accommodation for special cases. The post-natal arrangements should include provision for systematic advice and treatment for infants at "baby clinics" or infant dispensaries, and the continuance of these clinics or dispensaries so as to be available for children up to the age when they are entered on a school register—i.e., the register of a public elementary school, nursery school, crèche, day nursery, school for mothers, or other school. It is apparently intended that while public health authorities, under the direction of the Local Government Board, are to extend their activities in child welfare work upwards in the matter of age, no longer restricting themselves to the infant under one year, the education authorities, under the advice of the Board of Education, will continue to expand their medical work downwards, taking in or establishing educational centres at which mothers may be educated in the care and management of infants and young children by means of classes and home visiting. In connexion with these schools the Board of Education contemplate the establishment of "infant consultations," at which specific medical and surgical advice and treatment may be given, though only incidentally and not as the primary object of the consultation.

The local initiation of such measures as these, or the development on these lines of existing municipal or voluntary arrangements, must fall largely on medical officers of health, and we conclude from the official documents that they will be able to exercise a wide latitude of choice in the methods they pursue, and may even select the Government department by which they will be guided, without forfeiting claims to the national grant. The full realisation of some of the measures in the departmental programmes will give rise to some difficult questions, and from their medical aspect it will be important to define the position which the subsidised municipal service will occupy with regard to general practitioners and to those consultants who specialise in gynæcological work and in diseases of childhood. At the moment new proposals, however ambitious, can hardly be expected to make much progress. Local authorities are too much occupied with emergency matters, and are too depleted in staff to undertake them, while the whole of the voluntary charitable administration of the country is at the present moment affected by the war. The shortage of medical men must also militate against the initiation of new policies dependent upon medical coöperation. At the same time the grants give a substantial encouragement to existing organisations. Institutions which already partly fulfil the purpose of schools for mothers can now obtain State assistance, as also can local authorities in respect of their expenditure on health visitors and inspection of midwives. It may at least be hoped that the grants will result in all urban working-class districts having capable health visitors or organised home instruction for mothers. The public value of such work has been fully established by experience. We are sure that since the war broke out many educated women must have been eagerly seeking to undertake work of real utility among the working classes, but have been deterred by ignorance of the way to do it without suspicion of charity or patronage. Many such women could find the outlet they need by adopting health visiting as a serious profession. It is necessary for those who would work for the welfare of the mothers and children of the country systematically to be properly trained for the purpose. However the plans of Government departments and local authorities develop, good service in this direction is sure to be in demand and its value to increase in the public estimation.

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Dysentery.

IN the Lettsomian Lectures for 1914, delivered before the Medical Society of London, the publication of which we conclude to-day, Dr. F. M. SANDWITH has called attention to a disease which has not only a world-wide interest but at the present time a special significance, since it is a malady which is an inseparable attendant of war in all climates and at all seasons of the year. In his first lecture Dr. SANDWITH gave an interesting historical sketch of the disease, and pointed out that since the Peloponnesian war there has hardly been a protracted campaign in which dysentery has not scourged the hostile armies. He instanced the American Civil War, in which the Federal troops lost 37,794 men from dysentery and diarrhœa; and the Franco-German war (1870–71), in which there were 38,652 admissions and 2380 deaths from dysentery in the German army. In the Japanese war with the Chinese in 1894 amongst the former there were 155,140 cases of dysentery, of which 38,094 died. Knowledge of the causes of disease is constantly advancing, and it is instructive to compare these figures with those of the Russo-Japanese war in 1904. Here also instead of a proportion of four deaths from disease to one death from wounds, which LONGMORE has stated to be the average of the wars of the last 200 years, the Japanese reversed those figures, having a mortality of one dead from disease to four dead from wounds. This result is instructive. The British officers, who accompanied the Japanese troops, reported that sickness was kept down by reliance upon every soldier carrying out the regulations taught to him in peace time rather than upon any expert sanitary corps. Every Japanese soldier is taught that the most disgraceful illness to which he can succumb is one induced by disobedience to orders, such as drinking dirty water or eating unwholesome food. Experience has unfortunately shown, however, that on a long and hot march, or during a long drawn-out battle, it is practically impossible to prevent men from drinking foul water. During the present campaign every possible precaution has been taken by instruction and by all possible scientific means to protect our troops from the occurrence of such carelessness, with all its terrible risks.

It is, of course, necessary to distinguish between the two varieties of dysentery—the amœbic and bacillary—for only in this way can prognosis be given and treatment systematically planned. Dr. SANDWITH gave an excellent account of the entamœbæ of the human intestine, describing the developmental cycles of the organisms and the distinguishing characteristics of the entamœba coli and entamœba dysenteriæ, the latter being the causal organism of amœbic dysentery in man; it is also known as the entamœba histolytica. This form of the disease is of wide geographical distribution, but is especially prevalent in the tropics. At one time Egypt was considered to be its home, and some even recent observers maintained that it was not common in India. Dr. SANDWITH stated, however, that as regards Egypt dysentery is now decidedly less common, whilst sceptics who maintained that amœbic dysentery was unknown in India and some other warm climates have been converted, and the broad fact is well established that most of the dysentery of the tropics is amœbic, while much of the dysentery of temperate climates is bacillary. It must not be forgotten, however, that bacilli are not always absent from amœbic cases. The treatment of amœbic dysentery in the Lettsomian Lectures will be seen to revolve largely round the employment of ipecacuanha and its alkaloids, although the general features suggested by environment have not been lost sight of. The employment of hydrochloride of emetine in sterile water has been attended with considerable success, and Dr. SANDWITH urged that bismuth subnitrate should also be given in large doses. Bacillary dysentery is met with in all parts of the world, particularly in times of war and famine and in crowded institutions, such as lunatic asylums and prisons. After discussing the bacteriology and pathological anatomy of the disease Dr. SANDWITH drew attention to the extraordinary and unexplained prevalence of bacillary dysentery among lunatics. He remarked that it seemed to be generally accepted by bacteriologists that asylum dysentery is always of the bacillary type, and emphasised the importance of seeking for possible carriers. Lunatics, he remarked, are more difficult to deal with than sane patients, for they may never complain of diarrhœa nor any other intestinal symptoms, and yet when they die they are found to have had, perhaps for years, chronic disease of the colon. Thus it is possible by careful searching, as in cholera and in enteric fever, to detect a carrier who has never been suspected of dysentery, but who has nevertheless been responsible for a localised ward epidemic.

As an epidemic may unfortunately occur amongst the combatants in the present war, counsel upon the treatment of bacillary dysentery will naturally attract much attention. The prophylactic measures must not be directed only to the prevention of the contamination of drinking water, for the use of raw vegetables may carry infection, and there is reason to believe that flies may act as carriers of bacilli from fæces to food. In regard to drugs, Dr. Sandwith suggested calomel in small doses on the first day, to be followed by doses of bismuth, not more than 15 grains, and he still has confidence in large enemata of nitrate of silver or sulphate of copper. He also considered cyllin by the mouth to be a useful disinfectant. The treatment by serum therapy has been carefully investigated during recent years—Shiga produced antidysenteric serum in the horse by inoculating cultures of the dysentery bacillus. This serum was used successfully in the treatment of the endemic dysentery in Japan. Dr. Sandwith quoted the experiences of Dr. J. G. Willmore and Dr. A. H. Savage who obtained encouraging results by the employment of serums, but further trials will be required before definite opinions can be formed. Most observers have laid stress on the value of large doses of ipecacuanha in the treatment of tropical dysentery, and Dr. Andrew Davidson considers that it has proved so successful that it should not on light grounds be set aside in favour of any other. Dr. Sandwith concluded by saying that in any case of dysentery of doubtful origin the combined treatment of the patient by emetine and by polyvalent antidysenteric serum is both rational and humane.

Dr. Sandwith's lectures have given an interesting résumé of existing knowledge on dysentery combined with useful information derived from personal experience. A large field still lies open for investigation both on clinical and pathological (including, of course, bacteriological) lines. Recent experiences tend to show that considerable advance has been made, especially as regards treatment, and it is sincerely to be hoped that during the present campaign the losses caused by the disease may prove far less than in previous wars.

Annotations.

"Ne quid nimis."

FORTITUDE.

It is useless to attempt to minimise the seriousness of the disaster that befell the British Fleet in the North Sea on Tuesday morning last. The destruction of three cruisers which, though valuable in a fighting line, were not of the newest pattern does not affect our position of preponderating strength at sea one whit, but the loss of a large proportion of their splendid crews, both officers and men, is a veritable tragedy. But even here we must not lose our sense of proportion while mourning the solemn and splendid fate of those who have died to maintain the honour of their country. The national self-control during the past two months of poignant anxiety has been remarkable, and as far as can be judged the frank admission by the Admiralty of a naval reverse has not shaken the popular nerve. This cannot be because the menace of the occurrence is not realised. It must be because the country as a whole has braced itself to bear ill-fortune with a stiff lip and good-fortune with self-restraint throughout a struggle which must be very prolonged and will leave behind it deep scars. To our psychologists the almost universal attitude must have been somewhat of a surprise. Not a few of them have been prepared to find our populations, rich and poor alike, more softened by prosperity than the event has proved. There may, alas! be many opportunities before the war is over for further display of fortitude, but we are glad to think that the testimony of the medical profession goes to prove that the fortitude will be generally forthcoming.

RECENT BIOLOGICAL INVESTIGATIONS ON THE DIAGNOSIS OF MALIGNANT GROWTHS.

Some important researches by Dr. G. Mioni in cases of carcinoma and sarcoma have recently been published in the May–June number of *Tumori*.[1] The hæmolytic reaction, carried out by Crile's methods was positive in 62 per cent. of individuals suffering from neoplasms; negative in 32 per cent. While, however, the former consisted for the most part of operable visceral tumours, many in an early stage, the latter were either cutaneous cancers or those in an advanced condition where the diagnosis was clinically evident. These results were, therefore, all the more appreciable in that they furnished an element of diagnosis in cases clinically doubtful. Considering the fact that the reaction was often positive in suppurative conditions, in acute febrile diseases, and cases of surgical tuberculosis which were also investigated in the same manner, it must be admitted that this detracts in some degree from the practical value which might be attributed to the reaction. Elsberg's reaction gave 11·2 per cent. of positive results, as many in the cases investigated as in controls. This cannot be looked upon as satisfactory from a practical point of view. Estimation of the antitryptic index gave high values in 91·4 per cent. of the cases. This fact is important since the presence of a high index in a patient in whom the question of an acute infective or suppurative focus could be eliminated would lend support to the diagnosis of malignant disease, especially where the symptoms pointed to such a possibility. This reaction is simple, and extremely easy and practicable. Methods of biological investigation based on immunity reactions furnished uncertain results. The specificity of the antigen is far from being demonstrated, as our knowledge of the etiology of malignant growths is uncertain. It cannot be denied that in the serum of patients suffering from neoplasms there are substances capable of provoking specific reactions (deviation of complement) when in contact with extracts of tumours, substances that are not to be found in the serum of healthy persons or those suffering from other diseases; but at the same time it must be recognised that nearly similar reactions take place also with non-specific antigens, and this largely detracts from their significance. The method of passive anaphylaxis gave the author absolutely negative results when the second injection was endoperitoneal; positive in 33·3 per cent. of the cases when the second injection was subdural; but also the controls showed phenomena of irritation and lowering of temperature in an almost equal percentage. It seems doubtful, therefore, whether the anaphylactic picture can be attributed to a true reaction between antigen and antibody, but it is more probably due to a mechanical or toxic action caused by the solution of antigen coming in contact with the nervous centres. The deviation of the complement was complete in 23·2 per cent. of individuals who had growths, incomplete in 14·7 per cent., negative in 14·1 per cent., and doubtful in 17·6 per cent. In the controls it was negative in 62·5 per cent., incomplete in 28·3 per cent., and doubtful in 16·6 per cent. The reaction was inconstant according to the antigen employed; it might confirm other reactions, but taken alone the results were unsatisfactory. The meiostagmic reaction was considered positive when the difference was 1 to 5; thus, with non-specific antigen it was positive in 57·1 per cent. of the cases. Considering, however, the difficulty of producing active antigens and the ease with which these lose their efficacy, it will be difficult for such investigations to take a prominent position in clinical practice. After the total extirpation of the neoplasms a progressive diminution ending in complete disappearance of isohæmolysins contained in the serum of the patients was observed and at the same time a diminution of the antitryptic index until it reached normal values. This fact demonstrates that the isohæmolysins as well as the antitryptic ferments are in direct relation to the presence of the neoplastic mass and are the indication of the altered metabolism of the organism when a prey to malignant disease.

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[1] Archivio bimestrale fondato da G. Fichera. Anno III. Fasc. vi., May–June, 1914. Via Antonio Musa, Rome.

AN UNATTACHED MASS FOUND IN THE ABDOMINAL CAVITY OF A MALE.

IN the *American Journal of the Medical Sciences* for September there appears a description of a case which its reporters, Dr. R. P. Campbell and Dr. J. J. Ower of Montreal, claim to be unique. The patient, a man of 69, had for 40 years complained of variable dyspeptic symptoms. For 25 years he had been aware of a freely moveable mass in the right side of the abdomen, at first not so large as a hen's egg, but increasing slightly with the passage of time. This had been regarded as a moveable kidney, but the symptoms failed to give full support to this diagnosis. He was admitted to hospital for cystitis consequent on prostatic enlargement with retention. In the course of the routine examination a hard mass of the size of a large orange was found in the right hypochondrium. It was remarkably mobile, but could not be pressed down into the pelvis. The diagnosis made was that of an omental tumour. At the man's own earnest request laparotomy was performed and the mass was removed. The patient died 48 days later, apparently as the result of broncho-pneumonia and renal insufficiency due to an ascending destructive infection secondary to the cystitis. Neither at the operation nor at the necropsy was any trace of a pedicle found, so that the tumour must have been floating freely within the abdominal cavity. Two spherical calcareous masses were discovered post mortem, the one beneath the subdiaphragmatic peritoneum on the left side and the other beneath the peritoneal investment of the ileum. An examination of the tumour itself showed that it was roughly spherical in shape, measuring something over 3 inches in diameter. Its surface was smooth, white, and glistening, its consistence firm, and its centre calcareous. The substance surrounding the latter showed distinct evidences of a laminated composition. Microscopical examination showed that this outer substance was homogeneous; it gave the staining reactions that are appropriate to collagen, but the possibility of its being fibrinous could not be definitely excluded. After a consideration of various hypotheses the writers incline to the view that what was originally a small fibroma of the peritoneum became detached and calcified, growing eccentrically by the deposition of layers of fibrin by the irritated peritoneum. Whatever its origin, the tumour affords an admirable illustration of the surprises that may be revealed at an exploratory laparotomy.

THE NOTIFICATION AND ISOLATION OF MEASLES.

IN a report on the nursing of sick children in Dublin issued by the public health committee of the city the committee express the opinion that if there were any advantage to be gained by the notification of measles it would have been adopted by at least the majority of the urban sanitary authorities, and they therefore do not recommend its adoption in Dublin. The argument is an obvious *non sequitur*. An interesting report bearing on this point is quoted by the United States Public Health Reports.[1] A farmer and stockman from a little village described as A went to Kansas City with his stock. Nine days later he had a bad cold and spent two days wandering from store to store gossiping in A. The occurrence of an eruption on the third day caused him to be interned in his own house. But two weeks later 28 of his gossips found they had measles. In another two weeks 28 further cases occurred, and still two weeks later 30 more, making 86 cases in all. As this constituted almost the entire population of the village the epidemic there subsided. But in the meantime, one of the first group in A visited his medical man in another place, the town B, and the medical man's child contracted measles unsuspectingly, and the rash was noted in school. From this case developed 90 other cases in 43 families in B. A visitor from another town C came home from A, carrying infection to C, where 100 cases occurred. The county examinations were held in C, and a pupil from D attending them took the disease back there, with a result of 30 cases in D. Over 300 cases were indisputably traced to a single case and disseminated largely through schools. Notification, with effective isolation and quarantine at home, or failing that the isolation hospital, would certainly do much to prevent such wanton risk to life and future health as we have revealed here.

DRUG EFFECTS, SINGLE AND COMBINED.

THERE has been a tendency in the latter years for physicians to simplify their prescriptions. There are nowadays fewer of those shot-gun prescriptions whose spread of pellets compensates for a less careful accuracy of aim on the part of the man behind it. When such types of prescriptions persist they are mainly to be found in our hospital cough nostrums and also, perhaps, in the bromide mixtures for epilepsy, and we must suppose that experience has justified their preservation. It is to be noted, however, that even here the drugs used represent a combination all acting ostensibly in a similar physiological manner. There are many causes, we believe, for this tendency to simplification —the advent of organotherapy, the wide market of synthetic preparations, a dimmed faith in many older medicines, and the individual doctor's wider range of activities beyond his dispensary shelves. The

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[1] United States Public Health Reports, August 14th, 1914, p. 2126, quoting Bulletin of the Kansas State Board of Health, July, 1914.

National Insurance Act, too, discourages complicated prescribing. But of greater practical and scientific importance than such causes, some of which flavour of commercialism, is the fact that careful experimental observation shows that in some instances one drug given in conjunction with a second may neutralise or even militate against its fellow's action. To give, for instance, a gland extract with an organic or inorganic drug is not the way necessarily to ensure that each will exert its full effect. An example of this has been strikingly demonstrated in some experiments by Gledini and Ollino, published in the *Comptes Rendus de la Société de Biologie* (1914, vol. lxxvi., p. 659). The effect of cascara sagrada and also of sodium citrate was noted upon the intestine of the rabbit perfused with Ringer's solution. With both of these drugs the tonicity of the strip was increased, and the size of the contractions, as registered on an enterogram, was increased three- and four-fold. With adrenalin the amplitude was also increased double, and this effect lasted much longer; similarly pituitrin with even stronger effect, the contractions being quadrupled and the effect being much prolonged. When, however, to an intestine under this adrenalin or pituitrin influence was added either cascara or sodium citrate, the range of the movements was distinctly lessened. Thus, in so far as these observations go, they suggest that reinforcement of effect does not necessarily follow the prescribing of drugs exerting a supposed similar action. Few experiments of this kind have been hitherto recorded, but their value is considerable and may lead to a timely reconsideration of many prescribing methods in vogue at the present time.

CROSSED PARALYSIS AFTER THE INJECTION OF ALCOHOL INTO THE GASSERIAN GANGLION.

THE treatment of severe facial neuralgia by the injection of alcohol into the Gasserian ganglion was described by Schlösser in 1903, and in 1907 he recorded a number of cases in which it had proved successful. Since that time the method has been employed by a large number of surgeons who have in general been satisfied with its results. The operation presents few dangers; hæmorrhage due to wounding of the inferior orbital artery has been twice recorded, transient miosis and paralysis of the abducens muscle have been noted, and Kiliani has seen a mild case of facial paralysis and a complete paralysis of the third nerve result from the injection. G. C. Bolten[1] records the case of a neurotic woman aged 58 who suffered from severe neuralgia in the area supplied by all three branches of the fifth nerve on the right side. Many forms of treatment had been tried, including the injection of alcohol into the branches of the fifth nerve, without giving any permanent relief. Accordingly alcohol was injected into the Gasserian ganglion, apparently with success, for the patient suddenly had a severe attack of the customary pain, which quickly passed off. She went to bed complaining of severe occipital headache, and was given an injection of a third of a grain of morphia. She went to sleep, but did not wake, and was found to be deeply unconscious, with small and equal pupils that did not react to light. She remained unconscious for 48 hours, with a temperature of about 104° F., and then slowly recovered herself. She then showed a complete flaccid paralysis of the left arm and leg, a slight transient paralysis of the right side of the face, and a nearly complete paralysis of the muscles of the right eye, which looked widely outwards and could be moved only a little outwards, while the pupil was widely dilated and did not react to light. Hearing, speech, and swallowing were all unimpaired. The patient complained of headache, which slowly went away in the course of a week, and during this time the temperature returned to the normal. The left limbs were paralysed without loss of sensation; the left foot showed a Babinski reflex. The patient remained four months in hospital, and had practically recovered when she left; the ocular muscles had almost entirely regained their functions, the levator palpebræ superioris being the slowest to do so. The left hand also was slow to recover. The neuralgia did not return. Bolten concludes that the alcohol injection in this case was made partly into Meckel's cavern, in which the Gasserian ganglion lies, and partly through the dura mater covering it into the cranial cavity itself. Here the alcohol spread mainly backwards, coming into contact with the right cerebral peduncle, the motor nerves of the right eye, and to a less extent the right facial nerve. The exact nature of the nervous lesion produced by this contact with alcohol Bolten leaves uncertain.

THE Bolingbroke lecture for 1915 will be delivered before the South-West London Medical Society on June 9th by Sir William Arbuthnot Lane.

MR. G. H. Makins, C.B., surgeon to St. Thomas's Hospital, left last week for France to join the staff of the Principal Medical Officer of the Expeditionary Force as consulting surgeon.

THE King has appointed Major William Henry Gerard Herbert Best, R.A.M.C., Special Reserve (P.M.O., Southern Provinces of Nigeria), an official member of the Legislative Council of the Colony of Nigeria.

THE STERILISATION OF POTABLE WATERS BY MEANS OF CALCIUM HYPOCHLORITE.

BY JOHN C. THRESH, M.D. VICT., D.SC. LOND.,
MEDICAL OFFICER OF HEALTH, ESSEX COUNTY COUNCIL.

Professor G. Sims Woodhead's paper on this subject, published in THE LANCET of Sept. 19th, 1914, is an interesting attempt to utilise the well-known bactericidal properties of chlorine for sterilising water for the use of troops. I am afraid, however, that it is too troublesome for use in the field, and there is a risk that the slight excess of chlorine would render the water so unpalatable as to make it objectionable. Moreover, safety does not lie in using a minimum amount of chlorine. The amount of chlorine required to sterilise a filtered water varies exceedingly, not only with waters from different sources, but with water from the same source at different times. Having had to sterilise some millions of gallons daily for nearly two years I have found it necessary to make daily examinations of the raw water to determine the amount of chlorine to be added, and I am convinced that the only safe course in sterilising water for troops is to add an excessive amount of chlorine and at the end of 15 minutes remove the excess. In no case should less than 1 part of chlorine be added to 1,000,000 parts of water, and if the water is known to be foul, as when derived from a polluted river, 2, 3, or more parts should be added.

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[1] Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam, 1914, 2361.

To the various military officers who have recently consulted me on the subject I have made the following recommendations.

1. Obtain a supply of high quality chlorinated lime in ¼ lb. hermetically sealed tins.[1]

2. A corresponding number of half-pound packets of sodium thiosulphate. This salt (usually called hyposulphate of soda and largely used in photography) is nearly tasteless and combines with all the available chlorine in about half its weight of chlorinated lime. From these the following stock can be quickly prepared.

3. Add the contents of a tin of No. 1 to one gallon of water and shake until uniformly mixed.

4. Add one packet of thiosulphate to one gallon of water and shake until dissolved.

A gallon of solution No. 3 will sterilise 8000 gallons of any ordinary clear well or river water in 15 minutes, and if at the expiration of that time the one gallon of thiosulphate solution No. 4 be added to the water any excess of chlorine will be eliminated.

In encampments the water would require to be sterilised in the water-carts, and these apparently vary in size from 100 to 150 gallons. As one gallon of the chlorine solution is sufficient under ordinary circumstances for purifying 8000 gallons, one fluid ounce would suffice for 50 gallons. This being remembered, the quantity to be added to the contents of a water-cart could be calculated instantly by any man in charge who knew the capacity of the tank. The procedure would be as follows: Fill the tank with the water, filtered if necessary and possible, and add 1 oz. of the chlorine solution for every 50 gallons; mix well and allow to stand for 15 minutes, then add a corresponding quantity of the soda solution and again mix. The water is then ready for use. With a very foul or turbid water I should prefer to use a reagent for ascertaining whether there was an excess of chlorine present or not, and for this purpose the soloids of Messrs. Burroughs Wellcome and Co. are indispensable. I have just tried some of these which have been in my possession for years and find them as delicate as when first prepared. They would be used in the following manner :—

After adding the chlorine solution and mixing with the water, pour a little into a cup at the bottom of which is one of the soloids.[2] If there is an excess of chlorine present the water will become instantly distinctly blue. Repeat the test later, and if the chlorine has disappeared add a second dose of the chlorine solution and so on until free chlorine can be detected in the water at the end of 15 minutes. At the expiration of this period add to each 50 gallons of the water 1 oz. of the soda solution, and after mixing the water will be ready for use.

It will be observed that my suggestion differs from that of my friend Professor Woodhead, inasmuch as he uses the minimum amount of chlorine and takes no steps to remove any possible excess, whilst I strongly advocate the use of an excess of chlorine and the removal of this excess after it has exerted its purifying action. My process is the safer and almost certainly more simple for carrying out in the field.

Possibly the word "sterilisation" should not be used in connexion with chlorine treatment, as many bacteria, especially in dirty waters, are not destroyed, but the process can be depended upon to remove any typhoid or cholera organisms which may be present in a water, and the same applies to the species of bacilli which are the probable cause of dysentery.

THE NORTH MANCHURIAN PLAGUE PREVENTION SERVICE.

There are indications of late that the sanitary awakening of the great Chinese Empire is beginning, and that the modern methods of preventing disease adopted by Western nations are likely before long to come into use in this backward country with its teeming population of 400 millions or more. This awakening of China's sanitary conscience has not been accomplished without an appalling sacrifice of human life; but it was the disastrous epidemic of pneumonic plague which raged in Northern Manchuria in the winter of 1910–11 that finally induced the Chinese authorities to seek the counsel and assistance of the great Powers in the prevention of that disease, and incidentally of others. An international conference was held at Mukden in April, 1911, and the delegates there assembled unanimously advised the institution of a North Manchurian Plague Prevention Service. They also recommended that systematic investigations should be made in order to discover whether epizootic plague occurs among the tarbagans and other rodents, and if so, what is the precise nature of the infection. Efforts were also to be made to effect a general improvement in the sanitary condition of the towns and villages of Manchuria, and with this object the public were to be educated by public lectures and the issue of pamphlets and handbills explaining in simple language how certain diseases might be prevented and health maintained. Isolation hospitals of a permanent kind were to be erected for plague cases at various centres and accommodation for contacts provided. It was intended that the formation of the North Manchurian Plague Prevention Service should be carried out with the primary object of having a medical organisation equipped and ready to act for the control of any situation that might arise through the reappearance of epidemic plague, and it is important to note that the medical staff of this new service was to be available when possible for the advising of the poor and destitute on other medical matters. Also the permanent plague hospitals, when not required for actual plague cases, were to be used for the accommodation and treatment of other infectious diseases, as well as of ordinary medical and surgical cases. It was hoped that the service thus established would develop ultimately into a public health service for the whole of China. The first series of reports of the North Manchurian Plague Prevention Service has just been published,[1] edited by Dr. Wu Lien Teh (G. L. Tuck), the director and chief medical officer, containing no fewer than 23 separate contributions. Dr. Wu in a memorandum outlines the work which has been done by his staff and the objects held in view since it was established.

Objects of the North Manchurian Medical Service.

It appears that although the establishment of this service was approved in 1911 by the Central Government of China and by the Viceroy of Manchuria, and although the staff was then organised, its work for a time was delayed by the revolution that broke out in China, so that it was not until September, 1912, that its operations were really begun on a firm basis. Dr. Tuck sets out the objects aimed at by his service; these were mainly to devise means for preventing the recurrence of plague in North Manchuria and to deal with it effectually should it appear; to make researches into the origin and cause of pneumonic plague and its relation to marmots and other animals; to introduce general sanitary measures into the province, and whenever possible to treat and study local diseases. The staff, we learn, at present comprises eight medical men, two of whom are graduates of Cambridge and one of Edinburgh

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[1] These can be obtained from the United Alkali Company, Liverpool.

[2] One soloid will do for half a dozen tests, the water in the cup being poured off and the soloid left at the bottom.

[1] North Manchurian Plague Prevention Service Reports from 1911 to 1913. Edited by Wu Lien Teh (G. L. Tuck), M.A., M.D., B.C. Cantab. Cambridge University Press. 1914. Pp. 186, with many illustrations.

University, the others being graduates either of the Peiyang Medical College or of the Union Medical College, Peking. The only European member of the staff, Dr. F. E. Reynolds, acts as bacteriologist to the department. One of the most important objects of the service is to utilise every means at its disposal for giving an efficient training in preventive medicine to medical men, who it is expected will carry their knowledge thus acquired to other parts of the country. The members of the medical staff from the beginning have thoroughly understood that their duties were partly educational, and that they were expected to spread as widely as they could the modern doctrines of public health and the prevention of disease among the masses. Already public lectures have been given by them with lantern slide illustrations, and pamphlets have been issued in simple language. Attempts are being made to gain the confidence of the people, so that accurate statistics of births and deaths and other information may be recorded. Already by these efforts a marked change has taken place in the attitude of the native population as regards public health and the prevention of disease. The annual sum voted for carrying on the service is 78,000 roubles—that is, a little over £8000 in English money. The headquarters are at Harbin, where a large hospital has been built in which 50 plague cases can be isolated as well as 250 contacts. Since its opening in December, 1912, this hospital has not been needed for plague, and no fewer than 10,169 patients suffering from diseases of a general character have been treated in it. This hospital is equipped with a large Thresh's disinfector, and has a bacteriological laboratory for research work, a museum, reference library, and an operating theatre. Other hospitals have been built, or are being erected, at Lahasusu, Taheiho, and Sansing. Dr. Tuck expresses the hope that eventually the medical officers will obtain a voice in the direction of local sanitary affairs, the control of which in Manchuria is at present entirely in the hands of laymen. We give below brief references to two of the principal reports included in the series now published.

Investigations into the Relationship of the Tarbagan to Human Plague.

This subject is one of some considerable importance to Manchuria, as the late virulent plague epidemic was alleged to have had its origin in tarbagan plague communicated to the hunters and trappers on the western borders of the province. As so little was known of this animal, and as the grounds on which the blame for originating the late outbreak in Manchuria were found upon examination to be very slight, Dr. Tuck thought it desirable to investigate personally the habits and conditions of life of this animal in the region where it abounds and which is situated in the region where the borders of Mongolia, Manchuria, and the Russian province of Transbaikalia meet. During part of the inquiry he was accompanied by some Russian experts under Professor Zabolotny, a well-known authority on plague. It appears that although the tarbagan occasionally suffers from plague the epizootic seems never to be extensive, so that it is natural to assume that this animal does not play so important a part as the rat in the spread of the disease. Dr. Tuck regards its direct relationship with human plague as almost a negligible quantity. He draws attention to the occurrence, especially in recent years, of outbreaks of plague, frequently of the pneumonic form, in various parts of Siberia, which are now regarded as endemic centres of the infection. It is thought very probable that the great Manchurian epidemic of 1910–11 had its source in infection brought from one of these areas, and not from the tarbagan, as was formerly believed. No case of plague in man or animal has actually occurred in Manchuria since the end of the recent outbreak—that is, since April, 1911. Much information of an interesting kind is given as to the habits of the tarbagan and the methods employed to kill it for the sake of its fur. Dr. Tuck gives some sensible advice as to regulating the trade in tarbagan skins, for which there is a great demand in Europe, so that the local commerce may not be ruined, while all danger caused by hunting or trapping the animal will be avoided.

The Histology of the Lesions met with in Pneumonic Plague.

Some material taken from fatal cases of pneumonic plague in 1911 were forwarded with due precautions from Manchuria to Cambridge University for examination, the results of which are embodied in a joint report by Dr. Tuck and Professor Sims Woodhead entitled "Notes on the Histology of some of the Lesions found in Pneumonic Plague." The material included portions of the heart muscle, lung, bronchial glands, liver, spleen, and kidney. After describing the lesions, it is stated that the histology of the specimens afforded evidence of the presence of an extremely acute septicæmic condition. The authors then go on to observe that their investigations point to the suggestion that in the Manchurian outbreak the amount of the infective material gaining access to the upper respiratory passages was of importance in determining the character of the septicæmia. They are satisfied that this was an instance of a septicæmia or bacteræmia resulting from a pulmonary infection. In warm countries the people live in the open, and the facilities and channels by which plague infection is communicated appear to be those provided by rats and fleas; the plague material is carried more or less directly from one patient to another or from the rat by the flea. In the human subject the local reaction of the tissues and the bubo may prevent the extension of the bacteria, especially if the dose be small and the septicæmic condition occurs at a comparatively late stage, whilst if there is good reaction of resisting tissues the disease may never become septicæmic. If, however, the septicæmia once develops it is evident that the internal organs will be affected in much the same way as they are in pneumonic plague. In Manchuria, where plague was at its height in the depth of winter, the facilities for the inhalation or ingestion of large numbers of plague bacilli were far greater than they could ever possibly be in warm countries where people live more or less in the open. The Manchurian patients lived in overcrowded and badly ventilated houses, with doors and windows tightly closed because of the intense cold, and, moreover, artificially heated—conditions which made the houses into highly infected incubators of the most approved kind.[2] The intensely fatal character of the Manchurian outbreak was due to the massive doses of the infection received by the patients.

INSANITY IN IRELAND.

THE sixty-third annual report of the Inspectors of Lunatics in Ireland, recently issued, shows that there was an increase in 1913 of the number of insane from 24,839 to 25,009. These figures do not include insane wandering at large or residing in private dwellings, with a few specified exceptions. The increase in number, 170, is less by 100 than the average annual increase for the preceding ten years. It is unsatisfactory to note that the number of insane in workhouses has not decreased during the year, although 641 patients were transferred from workhouses to district asylums. The inspectors have undertaken an elaborate analysis of the age-distribution of the insane during the past 50 years, and they conclude that mental abnormality is becoming less among the young, while the number of mentally afflicted among the aged has more than doubled in the period under review. These facts support the suggestion of the influence of the former larger population, and, it may be, of a legacy of mental weakness dating from the sufferings of the famine years. A hope is held out that, as time goes on and these influences exhaust themselves, there may be seen, if not a diminution in the numbers of the insane, an arrest, or at least a greatly lessened velocity, of increase. The proportion of insane under care to the total population has increased from 250 per 100,000 in 1880, to 571 per 100,000 in 1913. The percentage of recoveries to admissions in 1913 was 39·2, being 1·1 lower than in the previous year. The general death-rate on the daily average number resident was 7·2 per cent. Deaths from phthisis were frequent; only 70 deaths occurred from general paralysis of the insane, of which 45 were in the Dublin and Belfast asylums. Two patients were killed by fellow-patients. Careful reports are appended dealing with the various asylums throughout the country. On the whole, those responsible show a praiseworthy endeavour toward continuous improvement. There are, however, noteworthy exceptions, and in some cases stronger pressure is required than the inspectors seem to have brought to bear.

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[2] THE LANCET, August 23rd, 1913, p. 529.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

IN accordance with the provisions of Order in Council of April 1st, 1881, Fleet-Surgeon Charles Strickland has been placed on the Retired List (dated Sept. 14th, 1914).

The following appointments have been notified:—Fleet-Surgeons (retired): E. B. Pickthorn to the *Victory*, additional, for the *Kent*, and on commissioning; G. R. MacMahon to the *Vivid*, additional, for the *Donegal*, and on commissioning; and C. Strickland to the Royal Marine Infirmary, Portsmouth, temporary. Staff-Surgeons: E. Cox to the *Pembroke*, additional, for disposal; and L. Warren to the *Pomone*, additional, for Dartmouth Sick Quarters. Surgeons: C. D. Bell to the *Victory*, additional, for the *Broke*, and on commissioning; and V. L. Matthews to the Royal Marine Artillery Division, Portsmouth. Temporary Surgeons: H. V. Deakin to the *Attentive*; A. H. Moore to the *Halcyon*; R. F. R. Burn to the *Victory*, additional, for the *Kent*, and on commissioning; H. W. Scott to the *Victory*, additional, for Portsmouth Yard; L. Mandel and R. K. Shaw to the *Vivid*, additional, for the *Donegal*, and on commissioning; W. P. Cowper to the *Vivid*, additional, for Devonport Yard; and G. Hamilton, B. A. Playne, and G. Sparrow, all to the *Victory*, for Royal Naval Division, Walmer.

ROYAL NAVAL VOLUNTEER RESERVE.

Temporary commissions in the Royal Naval Volunteer Reserve have been issued as follows:—Surgeons: William Alexander Sewell and Arthur Henry Crook.

The following appointment has been made:—Surgeon: T. B. Dixon to the *Victory*, additional, for the *Kent*, and on commissioning.

Surgeon Hildred B. Carlill, R.N., has been appointed to H.M.S. *New Zealand*, 1st Battle Cruiser Squadron.

ROYAL ARMY MEDICAL CORPS.

The undermentioned have been granted the temporary rank of Lieutenant:—P. Northcote (dated Sept. 2nd, 1914), A. W. Addinsell (dated Sept. 9th, 1914), W. W. Deane (dated Sept. 10th, 1914), W. B. Bannerman, W. E. M. Armstrong, and L. E. Owen (dated Sept. 11th. 1914), D. J. Thomas and W. Kennedy-Taylor (dated Sept. 12th, 1914), H. R. Knowles, T. L. Ingram, C. E. Reckitt, J. L. Lawry, W. H. Swaffield, J. E. L. Keyes, M. Nicoll, and V. Glendinning (dated Sept. 14th, 1914), and J. J. A. Sherry, E. C. Lindsay, G. E. Neligan, and H. A. Lake (dated Sept. 15th, 1914).

INDIAN MEDICAL SERVICE.

The King has approved the promotion of the following officers of the Indian Medical Service:—Majors to be Lieutenant-Colonels: Brevet Lieutenant-Colonel Thomas Arthur Granger, Harold John Kinahan Bamfield, John Wemyss Grant, Arthur Henry Moorhead, William Davey Hayward, and William Elmsley Scott-Moncrieff (dated July 28th, 1914), Samuel Evans, Arthur Gwyther, John Archibald Hamilton, and James Haldane McDonald (dated July 29th, 1912).

Captains to be Majors: Frederick Ernest Wilson (dated Jan. 26th, 1914), Henry Martyn Brown (dated March 1st, 1914), William Charles Ross, Herbert Hallilay, Alfred John Vernon Betts, Behramji Barjorji Paymaster, Henry Ross, John Forrest, Leonard Hirsch, and Daniel Stanislaus Aloysius O'Keeffe (dated July 26th, 1914), Harold Holkar Broome, Frederick Norman White, Davis Heron, Henry Crewe Keates, Leethem Reynolds, Richard Arthur Needham, and James Kirkwood (dated July 31st, 1914).

The King has approved the transfer of Captain Robert Long Gamlen to the Retired List in consequence of ill-health (dated August 28th, 1914).

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

Reserve Units.—The following Cadets and ex-Cadets of the O.T.C. to be Lieutenants (on probation): N. A. Martin, R. G. Bannerman, E. Robinson, and F. G. Lescher.

The following to be Lieutenants (on probation): E. K. Ryan, W. V. Tothill, H. Nield, R. D. D. D. Brownson, C. A. McGuire, H. M. Pope, W. T. Quinlan, H. W. Evans, L. J. Sheil, V. Wiley, C. Armstrong, A. B. Foott, N. L. Joynt, H. S. Pemberton, H. B. Sherlock, and J. Le M. Kneebone.

Supplementary to Regular Units or Corps:—The following Cadets and ex-Cadets of the O.T.C. to be Lieutenants (on probation): J. W. Cannon, C. L. Gaussen, T. F. Corkill, A. McM. Paterson, and T. H. S. Bell.

The following to be Lieutenants (on probation): H. E. Andrews, E. B. Marsh, and J. McCusker.

TERRITORIAL FORCE.

Bedfordshire: Surgeon-Captain Henry Skelding to be Surgeon-Major (dated August 10th, 1914).

Oxfordshire (Queen's Own Oxfordshire Hussars): Surgeon-Lieutenant Archibald H. Hogarth to be Surgeon-Captain (dated August 12th, 1914).

1st Welsh Howitzer Brigade: Surgeon-Major David A. Davies resigns his commission on account of ill-health, and is granted permission to retain his rank and wear the prescribed uniform (dated Sept. 19th, 1914).

Royal Army Medical Corps.

London Mounted Brigade Field Ambulance: Herbert Eldon Roaf to be Lieutenant (dated Sept. 19th, 1914).

1st South Midland Mounted Brigade Field Ambulance: Captain Thomas Henderson Forrest to be Major (dated Sept. 19th, 1914).

3rd Home Counties Field Ambulance: Captain Stanley A. Coad to be Major (dated Sept. 19th, 1914).

1st East Lancashire Field Ambulance: Captain Gordon William Fitzgerald to be Major (dated Sept. 19th, 1914). Lieutenant William Robert Douglas to be Captain (dated Sept. 19th, 1914).

2nd East Lancashire Field Ambulance: The undermentioned Captains to be Majors: George Ashton and Harry Washington Pritchard (dated Sept. 19th, 1914).

3rd East Lancashire Field Ambulance: Captain Edward Harvie Cox to be Major (dated Sept. 19th, 1914). Lieutenant John Knowles Lund to be Captain (dated Sept. 19th, 1914). Oliver Henry Blacklay to be Lieutenant (dated Sept. 1st, 1914).

3rd North Midland Field Ambulance: The undermentioned Captains to be Majors: Andrew Edward Hodder and Charles Algernon Stidston (dated Sept. 19th, 1914).

3rd South Midland Field Ambulance: Captain James S. Mather to be Major (dated Sept. 19th, 1914). Lieutenant George S. Williamson to be Captain (dated Sept. 23rd, 1914).

1st West Riding Field Ambulance: Major Alexander D. Sharp to be Lieutenant-Colonel (dated August 31st, 1914).

3rd West Riding Field Ambulance: Major John W. Stokes to be Lieutenant-Colonel (dated August 31st, 1914). William Barnsley Allen and Robert Alexander Stark to be Lieutenants (dated August 8th, 1914).

1st Welsh Field Ambulance: Major J. Howard-Jones, from Attached to Units other than Medical Units, to be Major (dated August 5th, 1914).

2nd London (City of London) General Hospital: Robert James Probyn-Williams to be Captain (dated Sept. 19th, 1914).

3rd London General Hospital: Dennis Embleton to be Captain (dated Sept. 23rd, 1914).

4th London General Hospital: The date of appointment of Captain Reginald Oliver Sibley is August 5th, 1914, and not as stated in the *London Gazette* of Sept. 1st, 1914. The undermentioned to be Captains: David Henriques de Souza (dated August 26th, 1914), Arthur John Jex-Blake (dated August 27th, 1914), Ivor Gordon Back (dated August 27th, 1914), and Claude Howard Stanley Frankau (dated August 28th, 1914).

1st Northern General Hospital: Major Thomas Gowans to be Lieutenant-Colonel (dated August 6th, 1914).

5th Northern General Hospital: Major Louis K. Harrison to be Lieutenant-Colonel (dated August 6th, 1914).

2nd Southern General Hospital: Archibald Leonard Taylor to be Quartermaster with the honorary rank of Lieutenant (dated Sept. 23rd, 1914). Frederick Cecil Nichols to be Captain (dated Sept. 23rd, 1914).

3rd Southern General Hospital: Captain Robert E. Humphry is seconded (dated Sept. 19th, 1914).

Eastern Mounted Brigade Field Ambulance: Harold Martin McCulloch Coombs to be Lieutenant (dated August 6th, 1914).

1st Northumbrian Field Ambulance: Captain John M. Gover to be Major (dated August 22nd, 1914).

Sanitary Services: Rupert Briercliffe to be Captain, and is appointed Sanitary Officer, East Lancashire Territorial Division (dated Sept. 1st, 1914).

Sanitary Officers: Captain John M. Hamill, from Attached to Units other than Medical Units, to be Sanitary Officer to the 2nd London Territorial Division (dated Sept. 23rd, 1914).

Attached to Units other than Medical Units.—Captain F. G. Proudfoot to be Major (dated August 12th, 1914). Surgeon-Lieutenant William Marley-Cass, from the 5th (Cumberland) Battalion, The Border Regiment, to be Lieutenant (dated August 23rd, 1914). Lewis Campbell Bruce to be Lieutenant (dated Sept. 19th, 1914). Major Robert W. Forrest is seconded (dated August 30th, 1914). Captain William H. Galloway to be Major (dated July 26th, 1914). Captain William G. Sutcliffe is restored to the establishment (dated Sept. 23rd, 1914). Lieutenant John M. Hamill to be Captain (dated Sept. 23rd, 1914). The resignation of Captain George B. Gill is cancelled. Arthur Cecil Hincks to be Lieutenant (dated August 31st, 1914). Edward Bromet to be Lieutenant (dated Sept. 23rd, 1914).

NEOSALVARSAN IN THE FRENCH NAVY.

Dr. Plazy, médecin de 1re classe (Staff Surgeon) in the French navy, has published[1] his experience of neosalvarsan gained by treating 80 cases of syphilis in the hospital of Port Louis. He treats his cases, as he says, intensively, giving to each $5\frac{1}{4}$ grm. of neosalvarsan divided into eight intravenous injections, the doses beginning at 0·3 grm. and increasing to 0·9 grm. Each dose is dissolved in some 10 c.c. of recently distilled water, and to avoid oxidation the water is sterilised by boiling, which gets rid of dissolved oxygen, and the solution is further effected as rapidly as possible. Injections of neosalvarsan can be and are given every three or four days, as the elimination of the arsenic is so rapid, occurring mainly in the first eight hours and being completed in 48, while after salvarsan injections it continues for four days. The spirochætæ rapidly disappear from primary and secondary lesions—in only three such could they be demonstrated 24 hours after the injection—and the chancre had generally disappeared after the third dose. The immediate result of the intravenous injection is apt to be some form of the Jarisch-Herxheimer reaction (due to the sudden setting free in the blood of the endotoxins of the destroyed spirochætæ)—that is, the signs and symptoms of the disease intensify themselves for a day or two; the chancre may swell up, the roseola become a little more marked and more diffused, headache and sore throat may increase, there may be increased lymphocytosis and the Wassermann reaction become anew positive. There may be a rise in temperature, and this either (*a*) toxic, from oxidation of part of the neosalvarsan; (*b*) mechanical, from the administration of too large a volume of fluid; or (*c*) specific, a Herxheimer reaction, and this may develop after any one of a series of injections arising only when some secret depôt of spirochætæ is at last penetrated and destroyed. Dr. Plazy has never seen any sign of anaphylaxis in his 700 injections, nor does he believe that neosalvarsan is unable to penetrate to the meninges, as he has found a positive Wassermann reaction of the cerebro-spinal fluid change after intravenous injection. He considers that all nervous troubles reported so far after these injections are due to syphilis, not to the drug. He reports cases of iritis thus cured, and notes that patients with ulcer of the stomach require small doses. Cases have been treated in spite of coexistent albuminuria; in these the arsenic excretion occurred at the usual rate, so there was no ill-effect on the kidneys. Syphilitic nephritis, if present, cleared up, the albumin excretion diminishing while the œdema disappeared. For 15 days after the appearance of the chancre the Wassermann reaction is negative, the disease is not yet generalised, and has got no further than the glands. Intensive treatment swiftly commenced will now achieve the sterilisatio magna (if $5\frac{1}{4}$ grm. are given in all), and the Wassermann reaction will never become positive. Should a primary case when first seen have already a positive Wassermann reaction, that will by intensive treatment be made negative; this result too will probably be permanent; but all these primary cases require to be tested monthly for a year, and if a positive Wassermann reaction develops they require at once another and a complete course of neosalvarsan. If cases appear with doubtful symptoms but a negative Wassermann reaction they require a provocative injection (Milian-Gennerich) of 0·3 grm.; this may elicit a positive Wassermann reaction in from 3 to 15 days, and then the need for a course is clear. In all stages the principle is to get the Wassermann reaction negative, if possible, by a course of 5·25 grm. neosalvarsan. The older the syphilis or the less completely it was originally treated the more numerous the courses that will be required to produce this desired result. It will be observed that Dr. Plazy does not advise any mercurial course as adjuvant, but treats cases entirely with neosalvarsan.

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[1] Archives de Médecine et Pharmacie Navales, March, April, and May, 1914.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN the 97 English and Welsh towns with populations exceeding 50,000 persons at the last Census, 8515 births and 5259 deaths were registered during the week ended Saturday, Sept. 19th. The annual rate of mortality in these towns, which had increased from 12·3 to 15·2 per 1000 in the four preceding weeks, declined to 15·1 per 1000 in the week under notice. During the first 11 weeks of the current quarter the mean annual death-rate in these towns averaged 12·9, against 13·0 per 1000 in the metropolis during the same period. Among the several towns the death-rate last week ranged from 3·1 in Southend-on-Sea, 5·5 in Bournemouth, 6·2 in Leyton, 6·3 in Ilford, 6·7 in Oxford, and 7·0 in Hornsey and in Hastings, to 24·5 in Great Yarmouth and in Sunderland, 25·2 in Middlesbrough, 26·6 in Gateshead, and 27·9 in Stoke-on-Trent.

The 5259 deaths from all causes were 32 fewer than the numbers in the previous week, and included 1437 which were referred to the principal epidemic diseases, against numbers steadily increasing from 394 to 1398 in the ten preceding weeks. Of these 1437 deaths, 1223 resulted from infantile diarrhœal diseases, 64 from measles, 53 from diphtheria, 50 from whooping-cough, 27 from scarlet fever, and 20 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 4·1, or 0·1 per 1000 above the rate in the previous week. The deaths of infants (under 2 years) from diarrhœa and enteritis, which had steadily increased from 112 to 1172 in the ten preceding weeks, further rose to 1223 last week, of which 325 were registered in London, 94 in Liverpool, 57 in Birmingham, 54 in Stoke-on-Trent, 51 in Manchester, 30 in Sunderland, 29 in Sheffield, and 26 in Hull. The deaths referred to measles, which had declined from 111 to 71 in the five preceding weeks, further fell to 64 last week, and included 20 in London, 10 in Oldham, 9 in Liverpool, 5 in Leeds, 4 in Birmingham, and 4 in Sheffield. The fatal cases of diphtheria, which had increased from 31 to 49 in the five preceding weeks, further rose to 53 last week; 13 deaths were recorded in London, 4 each in Birmingham, Leeds, and Hull, and 3 each in West Ham, Liverpool, Sheffield, and Middlesbrough. The deaths attributed to whooping-cough, which had been 52, 69, and 51 in the three preceding weeks, were 50 last week, and included 15 in London, 4 in Liverpool, and 3 in Bradford. The deaths referred to scarlet fever, which had been 20, 25, and 39 in the three preceding weeks, declined to 27 last week, of which 6 were registered in London, 3 in Birmingham, and 2 each in Liverpool, Manchester, Sheffield, Gateshead, and Newcastle-on-Tyne. The fatal cases of enteric fever, which had been 14, 17, and 16 in the three preceding weeks, rose to 20 last week, of which 4 occurred in London, 3 in Liverpool, 3 in Hull, and 2 in Manchester.

The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had increased from 3071 to 3500 in the four preceding weeks, had further risen to 3669 on Saturday last; 551 new cases were admitted during the week, against 536, 548, and 619 in the three preceding weeks. These hospitals also contained on Saturday last 1189 cases of diphtheria, 54 of enteric fever, 30 of whooping-cough, and 10 of measles, but not one of small-pox. The 1348 deaths from all causes in London were 42 fewer than the number in the previous week, and corresponded to an annual death-rate of 15·6 per 1000. The deaths referred to diseases of the respiratory system, which had been 132, 128, and 132 in the three preceding weeks, fell to 110 in the week under notice, and were 22 below the number in the corresponding week of last year.

Of the 5259 deaths from all causes in the 97 towns, 176 resulted from various forms of violence, and 375 were the subject of coroners' inquests, while 1451 occurred in public institutions. The causes of 43, or 0·8 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in London and in its 14 suburban districts, in Manchester, Leeds, Bristol, Bradford, Hull, Newcastle-on-Tyne, and in 60 other smaller towns. Of the 43 uncertified causes of death, 12 were registered in Birmingham, 7 in Liverpool, 6 in Gateshead, 3 in Bury, and 2 each in West Bromwich, St. Helens, and Sheffield.

HEALTH OF IRISH TOWNS.

In the 27 town districts of Ireland with an aggregate population estimated at 1,205,280 persons at the middle of this year, 556 births and 459 deaths were registered during the week ended Saturday, Sept. 19th. The annual rate of mortality in these towns, which had been 17·6, 18·1, and 17·0 per 1000 in the three preceding weeks, rose to 19·9 per 1000 in the week under notice. During the first 11 weeks of the current quarter the mean annual death-rate in these towns averaged 16·6, against corresponding rates of 12·9 and 14·2 per 1000 in the English and Scotch towns respectively. The annual death-rate last week was equal to 19·4 in Dublin (against 15·6 in London and 16·7 in Glasgow), 19·7 in Belfast, 19·7 in Cork, 14·0 in Londonderry, 17·6 in Limerick, and 13·3 in Waterford, while in the 21 smaller towns the mean death-rate reached 23·4 per 1000.

The 459 deaths from all causes were 65 in excess of the number in the previous week, and included 97 which were referred to the principal epidemic diseases, against 84 and 89 in the two preceding weeks. Of these 97 deaths, 74 resulted from infantile diarrhœal diseases, 9 from measles, 6 from enteric fever, 4 from whooping-cough, 3 from diphtheria, and 1 from scarlet fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 4·2, against a corresponding rate of 4·1 per 1000 in the 97 English towns. The deaths of infants (under 2 years) from diarrhœa and enteritis, which had been 67, 74, and 71 in the three preceding weeks, rose to 74, and included 30 in Belfast, 25 in Dublin, 6 in Cork, 3 in Londonderry, and 3 in Tralee. The deaths referred to measles, which had declined from 11 to 1 in the four preceding weeks, rose to 9 last week, of which 7 occurred in

Belfast. The fatal cases of enteric fever, which had been 3, 1, and 7 in the three preceding weeks, were 6 last week, and comprised 3 in Dublin, 2 in Ballymena, and 1 in Belfast. The deaths attributed to whooping-cough, which had been 7, 3, and 7 in the three preceding weeks, fell to 4 last week, of which 3 were recorded in Belfast and 1 in Cork. The 3 deaths referred to diphtheria were slightly in excess of the average in the earlier weeks of the quarter, and were registered in Dublin, Belfast, and Kilkenny. The fatal case of scarlet fever occurred in Belfast.

The deaths referred to diseases of the respiratory system, which had been 43, 49, and 35 in the three preceding weeks, rose to 50 in the week under notice. Of the 459 deaths from all causes, 138, or 30 per cent., occurred in public institutions, and 13 resulted from different forms of violence. The causes of 25, or 5·4 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the 97 English towns the proportion of uncertified causes of death last week did not exceed 0·8 per cent.

Home and Foreign Notes.

(FROM OUR OWN CORRESPONDENTS.)

UNITED STATES OF AMERICA.

Some Aspects of Hygiene from the Military Point of View.

THE practical success of military hygiene at Vera Cruz will be of interest to your readers to-day. Americans have a veritable passion for the sanitary question. The perplexities of prophylaxis, discussed in the newspapers and magazines, are so many illustrations of the public interest in these problems. Of course, nothing can compete for a moment in interest with the manœuvres and battles of men in the field. But the military occupation of Vera Cruz has a great importance from the hygienic aspect. The presence of the combination of qualities which produce sanitary experts of the best order is shown by the wonderful health of the rank and file at Vera Cruz. There has been one death from dysentery among them, and the numbers of sick are less than at the different forts and barracks in the States. It would be difficult to suggest any mode of explaining these statistics which would exclude personal and medical factors. As a record of organisation and administration the figures are remarkable. A very common disease, called colitis hæmorrhagica by Mexican physicians, is certainly dysentery, and within the limits of this practical distinction between two races, dysentery, whatever may be its cause, is associated with the unhygienic Mexican *laissez faire.* When active exponents of prophylactic healing, like the army officers, apply the rules of hygiene, disease is diminished in the military and civil population, and the campaign is reduced to a scientific system, carried out with military precision; flies and mosquitoes are banished, streets are swept, drains made, and water and food subjected to bacteriological examination. All these methods have had a great efficacy, but the public hardly realise the difficulties which had to be overcome. A great deal of work has been put into the prophylaxis of malaria, but necessarily the test of its value must come later. So far there have been 40 cases among the soldiers and marines. The symptoms are mainly tertian and quartan, but cases of æstivo-autumnal fever have also occurred. The prevention of malaria has been undertaken with characteristic energy. Hard as the task is, it is fairly likely that the machinery of the new Health Department, created and engineered by officers of the Medical Corps, will succeed in rendering salubrious districts laid waste, as it were, by the mosquito. Twenty-five miles of canals for irrigation have been made, and an elaborate system of drains constructed. Putrid marshes and pools of stagnant water have been covered with earth or oil. In the common phrase, the mosquito is being eliminated.

The Opium Bill.

The Bill in Congress to govern the sale of opium, coca, and their derivatives is not very satisfactory to any party concerned. The debate on the abstract evils of opium and cocaine leaves no one nearer a solution of the problem. The Bill went through, and illustrates aptly a principle of law which at the moment is almost unnoticed. The rights of the minority are supposed to be safeguarded, but if the Bill is brought to the test which some propose, its very moral supporters will be found unworthy of their station. They are interested, of course, in the oppression taking place in the opium traffic of China and other countries, but they have no time to spare for the physicians whom they are busily engaged in oppressing at home. The Bill may be described as a sanction with more than a technical meaning. The essence is in Clause 1. In that clause the physician is obliged to pay a tax to the Government. When the compulsory levy is exacted he is to send in to the Collector of Internal Revenue a written statement provided in the schedule of the Bill that he is engaged in "selling, dispensing, distributing opium or coca leaves or any compound, manufacture, salt." In Clause 2 the schedule runs as follows: Registration: "At the time of such registry and on or before the first day of July, annually thereafter, every person who compounds, deals in, dispenses, sells, distributes, or gives away any of the aforesaid drugs shall pay to the said collector a special tax at the rate of 1 per cent. per annum." One can imagine with what enthusiasm the respectable physician would sign the register and pay such a tax. What an outcry there would be if the Legislature decreed that every man who smoked a cigar must register and pay an annual tax. But all that would happen in this case would be a reversal of the law by the majority; in the matter of opium and cocaine the minority must go on paying for laws they disapproved. The physician is out of court. He alone must find a way out of this grave professional and industrial difficulty. The best thing that could happen to the two committees who are wrangling over the Bill before it goes to the President would be that its titular head, the Internal Revenue Bureau, should abandon it or coalesce with the State Bureaus who are the real affinity. All parties seem to be out for coercion of the physician; he is at once the object of social reformers in State and Federal Government, like a shuttlecock between two battledores. It is a serious political situation, for good laws in social affairs are such rare productions that, notwithstanding the wealth of American law in the moral element, it would not take us long to run over the list of really elevating edicts.

Sept. 7th.

INDIA.

The Calcutta School of Tropical Medicine.

Lieutenant-Colonel Sir Leonard Rogers has addressed a letter to the Indian Tea Association in reply to their inquiry as to the present position of the School of Tropical Medicine, to which I referred in a recent letter. He writes: "I am very glad to inform you that the hitch regarding the staff has now been overcome. The Bengal Government have fully supported all my suggestions, including the hospital for tropical diseases, for which they have already acquired a site, while I have raised much of the money for building it. The Government of India have been requested to sanction the staff I asked for and I anticipate no great delay in their doing so, as they have recently sent a letter to all local governments in India detailing the courses of study in the school and definitely stating that they will be commenced as soon as possible after the buildings are completed. Only the top storey of the new laboratories remains to be constructed. The delay caused by new plans being necessitated through a portion of the original sites having been required by the Improvement Trust last October and foundation troubles have made the opening of the school next November impossible. It is now expected to open next June after the hot weather vacation." Sir Leonard Rogers concludes by stating that he has no intention of retiring for some years to come.

The Health of Bombay.

Notwithstanding the prevalence of a good deal of minor sickness, such as remittent fevers which the long spell of rain such as we are now experiencing usually brings with it, the health of the city of Bombay is exceptionally good. Plague only exists in a mild sporadic form, and whilst the returns contain an unpleasant reminder of the presence of the dreaded scourge cholera, which is an ever-present menace during the rainy season, the city is in other respects free from serious epidemic disease. There were 6 deaths from cholera, as against 9 in the preceding weeks, and 2 of the former were amongst recent arrivals from up-country. Altogether the mortality declined from 539 to 524, the present death-rate being 27·81, which compares very favourably with the corresponding period of last year, and is greatly below the average of the past five years.

The Women's Medical Service in India.

Dr. Kate Platt, of the Women's Medical Service of India, on return from England has been posted to Simla in order that she may supervise the preparation of all plans and drawings for the new Lady Hardinge Medical College for Women at Delhi, for which she has been selected to be the first lady principal.

Infant Mortality in Burma.

In view of the alarmingly high infant mortality in Burma a memorial bearing the signatures of the wife of Mr. H. M. S. Mathews, I.C.S., Commissioner, and of a large number of other European and Burmese ladies has been forwarded to the Lieutenant-Governor praying that (1) the cadre of the Government Medical Department be amended by opening 21 of the appointments of assistant surgeons (25 being vacant on April 1st) to lady doctors; such women of this province as are already qualified and suitable it is suggested should be employed in some of the 21 towns now without female medical aid, the remaining vacancies to be filled in the same way as speedily as possible; (2) separate wards for maternity cases be provided in all Government hospitals where such wards do not now exist; and (3) all town authorities in large towns be urged to entertain visiting midwives. The death-rate for the whole of Burma last year was 107,967 children under 5 years out of 316,654 born that year, which indicates the serious loss in the population of its indigenous race in the province of 1 in every 3 children.

An Investigation into Diabetes at Madras.

In connexion with the investigation into diabetes by the Madras Government there was considerable speculation as to the identity of the anonymous donor who contributed Rs. 50,000 for the purpose, but it was known to many that the public benefactor was the Raja of Pithapuram, and this was confirmed by the publication of a Government Order on the subject. The Surgeon-General with the Government of Madras is requested to submit to the Government at an early date proposals for providing Dr. S. W. Patterson with the requisite subordinate staff, laboratory accommodation, and facilities for clinical observation, which are referred to in the letter from Sir James Kingston Fowler, trustee of the Beit Memorial Fellowships for Medical Research.

The Price of Quinine.

The fifty-second annual report on the Government cinchona plantations and factory in Bengal for the year 1913–14 mentions the conference between the Java planters and the European quinine manufacturers and bark importers, which was referred to in the previous report. At that time negotiations were still being carried on with a view to a settlement of the long-outstanding differences between these bodies, but these differences have now been settled and combination is an established fact. The effect of the agreement may be far-reaching. Already, after less than a year's working, the price for bark has risen from the minimum 5 cents imposed to 6·20 Dutch cents per unit, and there is every likelihood, according to the latest advices, of a further rise. This has had the effect of nearly doubling the price of quinine within the last three years, and has at once made the production of the alkaloid a profitable concern. The agreement would appear to be working smoothly, and already there are hints that it will be ratified at the end of the contract period; nor is the world's production any in excess of the growing market's demand. Unless unforeseen circumstances, such as the displacement of quinine by other drugs or increased acreages pointing to greatly increased production ensue, we may take it that quinine will remain at its present high level for some time to come.

Sept. 4th.

AUSTRALIA.

Medico-Social Legislation.

OUR legislators are quite active in medical directions just now. In New South Wales legislation is to be formulated dealing with the control of infectious diseases. Registration of dentists and veterinary surgeons will be required by law in the near future. In West Australia provision is to be made for the training of midwives—a maternity hospital will be erected in connexion with the scheme. A fund is to be provided in the same State to give aid to victims of miners' phthisis and their dependents, and homes for male and female inebriates are to be equipped. In this enterprising list of social schemes room has not been found for mention of vaccination, but in New South Wales cases of small-pox are of frequent occurrence.

Insanity in South Australia.

The annual report of the department for 1913 shows that the total number of insane under treatment was 1354, being a slight increase on the previous year. Of this number 779 were males and 575 females. The ratio of admissions to every 10,000 of population was 6·18 for 1913, as against 5·42 for 1912. The number of admissions was the largest yet recorded and about half the patients admitted were Australian born. "The percentage of recoveries on admissions was good and above the average, and applied to both sexes." There were 110 deaths. The daily average cost per patient was 1*s.* 10*d.* The director of the Parkside Asylum says: "There is still plenty of accommodation for additional cases. Practically the hospital (which is in the city) is as much isolated as though it were some hundred miles in the country. When its accommodation is exhausted no other mental hospitals should be erected and scattered over the country, but mental asylums might be erected in the suburbs; these would contain the chronic insane past mental hope, and the medical attendance could be given by some local medical practitioner."

Prevalence of Diphtheria.

Diphtheria continues to show an increase in epidemicity over Victoria and Tasmania. In the past five years the returns for Victoria have shown an increase, and last year there were 5329 cases with 245 deaths. This year reports from all over the State indicate an increased prevalence, and there are over 200 cases in the Fairfield Hospital, Melbourne. The figures for Hobart show marked progression in incidence.

Medical Journalism.

At the end of June the *Australian Medical Journal* and the *Australasian Medical Gazette*, which were published respectively in Melbourne and Sydney, were discontinued and a new organ, the *Medical Journal of Australia*, has been established in Sydney as the organ of the British Medical Association in Australia. The Council of the Victorian branch passed the following resolution and forwarded it to Dr. Alex. Lewers, who had acted as editor for 11 years:—

> The Council desires to acknowledge the great services rendered to the Victorian branch of the British Medical Association by Dr. Alex. Lewers, and to express its gratitude to him for his work as editor of the *Australian Medical Journal*, the official organ of the branch.

Resignation of Dr. T. B. Binnie.

Dr. T. B. Binnie has resigned his appointment as medical officer to the Children's Hospital, Melbourne. Dr. Binnie has been connected with the institution for more than 30 years and is one of the oldest specialists in children's ailments now practising in Victoria. Dr. Binnie has paid much attention to the question of congenital syphilis and some years ago published a small work dealing with the treatment of hip-joint disease.

August 15th.

ROYAL INSTITUTE OF PUBLIC HEALTH.—This institute has been authorised by the War Office to enrol recruits for the Royal Army Medical Corps. Men possessing special experience, or who hold sanitary or first-aid certificates, are invited to offer themselves for service. Applications, stating age, qualifications, &c., should be addressed to the Secretary, Russell-square, W.C.

LITERARY INTELLIGENCE.—Messrs. Longmans and Co. announce for immediate publication "The Essentials of Physiology," by Professor F. A. Bainbridge and Dr. J. Acworth Menzies, both of the University of Durham. The book is intended to present the fundamental facts and principles of physiology in a concise form, in order to meet the requirements of medical students preparing for a pass examination in physiology. The same publishers also announce a new part of "Quain's Elements of Anatomy," eleventh edition. This will be Vol. II., Part II., and will deal with splanchnology by Professor Johnson Symington, of Queen's University, Belfast.

THE LANDING OF THE REFUGEES.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

Tilbury, Sept. 19th.

TILBURY is just now a place of absorbing daily interest, for here one of the most affecting sides of the war, from which we fortunate islanders are segregated by the seas, is exposed to our view. The landing of the refugees from Belgium has been taking place at Tilbury for the last ten days regularly under the ægis of the Local Government Board, who are accomplishing a national duty for us and trying to discharge some of our immense debt to Belgium, amid the cheers of the general public that gathers to express sympathy with the sufferers and hearty approbation of the official action. Every day a ship arrives bearing the luckless ones from the seat of war. For the most part their homes have been destroyed and their livelihood gone, and many have to mourn the death and sometimes the murder of their nearest kin. Some are ill, some are wounded, many are hungry and insufficiently clothed. The task before their British hosts is a heavy one—such an episode as this shows how heavy. On one boat there was a child 4 years old who had strayed from some scene of horror, and instinctively following other fugitives had reached the protecting shelter of the Antwerp forts alone! No one knows who the child may be, or if its parents survive the recent torment. In another boat there were eight children, none of them older than 12 years, and each child was alone, absolutely friendless. They had been separated from their families in the destruction of their dwelling-places, and did not know if their parents had survived the ruthless invasion. Dumbfounded and miserable beyond description the crowd has pressed on to receive at British hands all the succour that can be improvised to meet their plight.

The Government, acting through the Local Government Board, began last week to take in hand the reception of the refugees, who, instead of landing at Folkestone in a haphazard way, are now for the most part conveyed to Tilbury daily in relays. If one day the boat does not run, two boats run the following day. This arrangement came into force at the end of the second week of September, and the well-known fleet of the Great Eastern Railway Company is employed for transport purposes. The popular passenger ships that at this season of the year are usually so crowded with happy tourists going to and from Harwich, Rotterdam, and Antwerp are now bearing over to our coast crowds of maimed or ruined war victims. From the devastated towns and villages of Belgium those who escaped with their lives very generally made their way to Antwerp as the one place too well fortified for the Germans to capture, except after a very long and arduous siege. And it is from Antwerp that the refugee ships start, the British Government wisely employing the passenger ships of the Great Eastern Railway Company which are in the habit of frequenting that port.

It was from the very circumstances of the case impossible to establish a regularity of numbers on each voyage, much as this would have simplified proceedings on this side. On Monday, Sept. 14th, no less than 925 nuns and refugees arrived; on the following Tuesday there were 784 refugees. The uncertainty as to the number coming is accompanied by an equal uncertainty as to the hour of their arrival, and this too adds greatly to the complications which the Local Government Board have to meet. Thus, at first a thousand per day were expected, and now not half that number are likely to arrive. This has called for energetic service on the part of Sir Arthur Downes, chief Poor-law medical inspector, and Mr. J. S. Oxley, one of the Board's general inspectors. When, on Sept. 19th, I went to Tilbury with official sanction the *Brussels* was expected at 4 or 5 A.M. It had been arranged that she should anchor off the pier and that the passengers should be landed at 8 A.M. Consequently the medical officers, the agents, the interpreters and all others concerned had to be ready by 8 in the morning. But though they were all on the spot in good time the ship did not arrive. It had been held up by a Dutch cruiser and overhauled for contraband of war. From 8 in the morning till 5 in the afternoon the whole staff watched in vain, and this is one of the difficulties and inconveniences that must be faced. When I say that, I know that this particular difficulty would have been avoided if the wireless apparatus had not been removed from the ships; but in times of stress it is inevitable that now and again the unforeseen should happen.

Medical Inspection or Control.

On this occasion I was able to watch the entire process by which the danger of importing disease through the medium of the refugees is guarded against. The medical staff, some agents and interpreters, a few ladies who spoke Flemish, among them Mrs. Bateman, together with a trained nurse and myself, embarked on a tender and came up to the *Brussels* as soon as she had anchored in mid-stream. The medical inspection then took place on board the *Brussels.* We had with us on the tender a company of boy scouts—agile, intelligent, and most willing helpers. They were the first to leap on board the *Brussels*, and quickly found their way among the refugees. With smiles and expressions of kindness they assisted them to the gangway, carrying their bundles, and at the same time marshalling them so that they should pass out in Indian file. On each side at the gangway leading from the *Brussels* to the tender stood two medical officers; one represented the Port Sanitary Authority and the other the Metropolitan Asylums Board. This of necessity is only a rapid examination made as the passengers slowly pass by; but they had already been medically inspected before they embarked at Antwerp and are more carefully questioned on arriving at their destinations. If a case of infectious disease had been detected the patient would have been dealt with by the Port Medical Officer and a case of sickness by his colleague. Nothing of the sort occurred while I was there, and indeed there had not at that date been any case of infectious disease among our guests, although some of them were obviously very ill. Indeed, such a sight brings home to all of us present some of the horrors attendant upon war. There was one wretched man who had partially lost his reason. Nothing could persuade him while he was gently conducted to the train that he was not being led away solely for the purpose of being shot. On another occasion there was a woman just on the point of giving birth to a child. With the aid of an invalid's chair and with extensive and skilled precautions she was landed and conveyed to a hospital. Her case had been aggravated by a bad passage and sea-sickness, but she got within the building just in time. What that woman's mental and physical strain had been no words could begin to hint; one can only hope that she was for the time stunned into inability to realise her plight.

The Victims Pass First.

Women and children have constituted the vast majority of the refugees, and this was well illustrated on the *Brussels* when I met her. The vessel happened to be conveying an unusually small number of passengers, having on her only 32 men, 32 women, and 85 children, a total of 149. This was accounted for by the fact that the *Dresden* was expected the same evening with many more. It was a pathetic, a painful, and yet at times an inspiring sight to watch these poor people disembark. Some had thrown what worldly possessions they could save into a blanket, and were carrying this bundle slung over their bent shoulders. Others had so little they could easily lift it with one hand, and some had nothing at all, no hats to cover their heads, and barely clothes enough on their bodies. The ladies who spoke Flemish, taught by experience, had brought some clothes with them—wraps, skirts, or shawls—and gave these to the most needy. Prominent among these ladies I noted the tender attention bestowed on the women and children by Mrs. Bateman and Mrs. E. A. Footman. Their indefatigable zeal and familiarity with the Flemish language has been most useful. Then, also, it is a great advantage to have secured the services of persons who are accustomed to continental manners. Mr. E. A. Footman and Mr. Charles Heyermans, as Flemish interpreters and agents, are likewise giving valuable and gratuitous aid to the refugees and to the Local Government Board.

On board there were also a few paying passengers, but these ships are not run for profit. They are employed by Government in the performance of a national duty. Therefore not those who pay, but those whose need is greatest, pass first. The well-to-do traveller who can afford to meet his travelling expenses can also afford to wait a little, while those whose want is most urgent receive the first care. Only one or two passengers travelling first class showed by ill-timed resentment that they did not understand the great meaning underlying the slight delay to which they were subjected. Nearly all the paying passengers have throughout generously entered into the spirit of the occasion, and have been glad to stand aside from the gangway to let those who had suffered most land before those who had paid most.

Safety and Comfort.

When a boat with refugees arrives, and while the tender goes out to meet her, the station on the Tilbury Pier is railed off into two halves. The right side on landing is devoted exclusively to the refugees. The other side remains accessible to the ordinary railway travellers and to a crowd of people who come to see and welcome the refugees with well-meant if rather incongruous cheering. Lavatories, with inscriptions in Flemish, and attendants, especially women attendants for the mothers and children, have been arranged for the convenience of the refugees. On the reserve platform, where, needless to say, the Belgian and British flags wave greeting, steaming urns give promise of warm refreshment—tea, coffee, bovril. The busy scouts assist the women and children into the carriages and then bring them cakes and milk, and specially prepared milk-and-water for infants and very young children. The luggage van, alas, contained so little luggage that it could be partially used for passengers. Here some particularly sick were put and kept apart. These are landed last of all and a doctor or a nurse, if necessary, can be provided to travel with them. In such cases full details are telegraphed on ahead, so that on arriving everything needed shall be ready waiting for the train. These trains go straight from Tilbury to the Alexandra Palace. To do this they have to travel over three different railway systems, and consequently change engine-drivers three times. In the course of the first week they conveyed 1500 refugees from the landing-stage at Tilbury right into the Alexandra Palace grounds. From Tilbury I travelled in this Government train, as it is called, as far as Plaistow; and here it stopped long enough for me to visit almost every carriage. After further refreshments at Plaistow half an hour's rest in the stopping train was enjoyed by the refugees and a great transformation could be seen to have taken place in their physical condition and *moral.* The dazed look and the haggard expression on many faces had disappeared, being replaced by bright and grateful smiles. The mothers held their little children out to me, and small hands folded round my finger with baby trustfulness, while the deep voices of men in faltering language strove to say that now they felt they were among friends and were safe. These Flemish folks knew enough French to convey that much in tones of heartfelt thankfulness.

Correspondence.

"Audi alteram partem."

ANTITYPHOID INOCULATION IN WAR-TIME.

To the Editor of THE LANCET.

SIR,—In my letter in THE LANCET of August 22nd I appealed for the support of the profession in the matter of antityphoid inoculation of the troops, and I have abundant evidence of the response, which has been of the greatest assistance to the Army Medical Service. In some of the letters which have since been published on the subject, both in the medical and in the lay press, and also in private communications to myself, there appear, however, some misconceptions which I may take this opportunity of removing.

A considerable number of medical men have offered, in a most generous fashion, to prepare the vaccine, to address the soldiers, or to carry out the inoculations in various areas. As far as possible I have replied personally to those who have made such offers, but it may be well to make the actual position more generally known.

1. *Compulsory inoculation.*—The military authorities have once more definitely pronounced against the inoculation being made compulsory, while renewing their instructions that no effort should be spared to induce the men to come forward.

2. *Preparation of the vaccine.*—Numerous and most generous offers to prepare vaccine have been received from laboratories and pathologists throughout the kingdom. As mentioned in my earlier letter, the arrangements made by the Vaccine Department of the Royal Army Medical College, with the assistance of the Lister Institute and of Sir Almroth Wright, have assured a supply of vaccine ample for all requirements. If it can be avoided it is undesirable that vaccine should be used differing, possibly, in constitution and in the method of standardisation from that which has proved of such value in the army in recent years. At the same time, all such offers have been carefully recorded, and we should not hesitate to avail ourselves of them should the need arise.

3. *Distribution of the vaccine.*—It will be obvious that it is essential from an administrative point of view, and to avoid confusion and overlapping, that all vaccine should be issued from one central place. This has been arranged for, and all vaccine is stored at and issued from the Vaccine Department, Royal Army Medical College, London.

4. *Influencing the officers and men.*—All medical officers of the Regular and Territorial Forces were instructed in their duties in this direction within the first few days of mobilisation and were furnished with full information as to the procuring of vaccine and the carrying out of the inoculations. Steps have also been taken, through the usual official channels, to keep touch with the progress of inoculation and to see that it is efficiently carried out. To assist in the work I have myself been directed to visit the various Commands, and in the last few weeks have interviewed general officers and the commanding officers of a large number of units, explaining to them the subject and inviting, in the name of the War Office, the exercise of their personal influence upon the officers and men serving under them. The response has invariably been most cordial, and in most cases has resulted in the prompt inoculation of practically all officers, and in steady progress with the men.

5. *The carrying out of the inoculations.*—This is the duty of the medical officers and is carried out under the directions of the Assistant Director of Medical Services of the division. In some instances, however, the local assistance of trained pathologists has been offered and accepted, and I feel sure that such voluntary trained help might be most welcome in other stations where the pressure of routine medical and sanitary work is heavy.

In spite of the absence of compulsory powers there is good reason to anticipate that the voluntary response will be almost universal.

I am, Sir, yours faithfully,
W. B. LEISHMAN,
Colonel, R.A.M.C.

War Office, Sept. 15th, 1914.

OSTEO-ARTHRITIS OF THE HIP-JOINT.

To the Editor of THE LANCET.

SIR,—In a letter to THE LANCET of Sept. 12th Dr. W. Bruce has been kind enough to refer to our paper on the diagnosis of this condition in its early or pre-osteophytic stage. While appreciating the notice taken of our contribution we would, however, venture to dissociate ourselves from Dr. Bruce's sweeping generalisation that most, if not all, cases of sciatica are really examples of osteo-arthritis.

We demur strongly against the assumption that sciatic pain is pathognomonic of this affection, inasmuch as the pains are with equal frequency referred along the anterior crural and obturator trunks. In our experience, if there be any diagnostic significance attaching to these referred pains it is their simultaneous incidence along the back and front of the thigh—viz., along the sciatic as well as the obturator or anterior crural branches. At the same time, while not under-estimating the importance of these referred pains, we are of opinion that the local pains experienced in the groin and gluteal region due to capsular involvement are far more trustworthy indications of the arthritic site of the disorder in any given case. It is the undue emphasis laid by Dr. Bruce on the sciatic pain that we join issue with, and still more his claim that pain along this trunk is always indicative of osteo-arthritis. This is certainly not so, and in our opinion the diagnosis cannot be established unless these local and referred pains are associated with slight hip flexion and lordosis combined with limitation of mobility, more particularly in the direction of abduction. Given the presence of these unequivocal signs of hip disorder we consider that the diagnosis of incipient osteo-arthritis is justifiable even should skiagraphy disclose the absence of bony outgrowths.

While paying our tribute to Dr. Bruce's work on sciatica, we must confess that the impression left on our mind was that its perusal by anyone of slender experience would lead to the conclusion that there was no such thing as primary sciatica, and, moreover, that of secondary types of sciatica the particular variety associated with osteo-arthritis was the only one calling for special mention.

We are the more surprised at this attitude in that the author in his section on etiology notes the frequency with which gout figures in his series of examples. Now there are few who will gainsay that gout apart from any hip mischief is frequently responsible for sciatica. But such cases of gouty sciatica do not as a rule endure beyond 12 months, and more frequently they clear up sooner or alternate with other gouty manifestations. On the other hand, sciatica secondary to osteo-arthritis is not so persistently continuous, but consists rather of recurring bouts of sciatic neuralgia extending maybe over years. It is this obstinate recurrence that is so distinctive of sciatica secondary to hip disorder.

Another omission in Dr. Bruce's work is the absence of any allusion to those types of sciatica which ensue secondarily to gluteal and crural types of fibrositis whose relationship to "spurious and genuine sciatica" we have dealt at length with in the current issue of the *Edinburgh Medical Journal*. Moreover, no note is taken of the fact that disease of one other important joint, the sacroiliac synchondrosis, is almost invariably attended by pain along the sciatic area, and we would add that it is not to tuberculous disease of this articulation that we allude, but to the infinitely more common condition—relaxation of the sacroiliac ligaments.

Finally, it need hardly be said that in approaching any given case marked by sciatic pain we should never lose sight of the all-important fact that it may be an early symptom of increased intrapelvic pressure by growths, &c., whose nonrecognition places the physician in an unenviable position, none more so. We make these criticisms in no carping spirit, but rather with the object of emphasising the fact that cases of sciatica should be approached in a more catholic frame of mind, having regard to the fact that the long extended course of the nerve exposes it to multiple contingencies—hence the numerous pitfalls into which the unwary often and even the prudent occasionally fall. We are, Sir, yours faithfully,

A. BASSETT JONES,
R. LL. J. LLEWELLYN.

Aberystwith, Sept. 16, 1914.

MINERS' PHTHISIS ON THE RAND.

To the Editor of THE LANCET.

SIR,—Under the above heading in THE LANCET of July 11th last is a letter from Mr. Philip H. Franks, B.Sc. (Mining) Birm., in which a somewhat personal attack is made on Mr. Aymard and myself for daring to write on such a subject as "mortality on the mines." I did not at first think the letter of importance enough to call for a reply, but it has been so often mentioned to me that I trust you will spare me space for a few words on it.

Mr. Franks takes exception to a phrase in my paper in THE LANCET of April 11th thus: "...... 'callous, inefficient administration,' to quote Mr. Brock, I can confidently affirm that out of an average of nine developers I had on my section when shift bossing, only two made proper use of the water the mine supplied." A little further on, in giving his ideas of how to correct maladministration and eliminate mortality, he continues: "This would remove what I consider the curse of the present system—viz., a miner earning, say, from £40 to £150 per month being under the charge of a shift boss who is paid often as low as £30 per month. What a chance for bribery!"

My paper did not throw mud at any individual or class of individuals as being the cause of the "present system" of "callous, inefficient administration" of which Mr. Franks gives such a convincing example from personal experience with such extreme frankness; but the endeavour was made to bring into relief the underlying causes of the great mortality in these mines, and thus to indicate "the trend of the measures which should be taken to remove them," &c. I think the phrase "callous, inefficient administration" wide enough to embrace his case and, from a medical point of view, a great many more of which even a mining engineer is entirely ignorant. It is worthy of note that Mr. Franks "has now given up mining on account of silicosis" after working on the Rand mines "for a period just exceeding three years."

I am, Sir, yours faithfully,
BEN. GEO. BROCK.

Germiston, Union of South Africa, August 24th, 1914.

WORK WITH LA CROIX ROUGE.

To the Editor of THE LANCET.

SIR,—In view of the discussion as to the use of expanding or Dum-dum bullets by the Germans I am in a position to offer positive evidence in at least one case.

In this ambulance, where I have volunteered for temporary duty as surgeon in charge, I have under my care a French soldier in whom the bullet wound of entrance on the left side of his face is round and clean cut, while that of exit is a cavity formed by the tearing away of a great part of the right side of his face, involving the loss of the superior maxilla, malar, and part of the temporal bones. It is the opinion of the French and American surgeons who preceded me in charge, and in which I entirely concur, that nothing but an expanding bullet could have caused such destruction. In view of the caution given by the British press I brought no camera, but the American surgeon whom I relieved took a photograph which will no doubt appear in the American surgical journals.

During the German occupation of this town there were 192 wounded here, including 20 British and 6 French, from the surrounding battlefields. On the fourth day a German surgeon, the only one during that period, visited this ambulance—not, however, to relieve the sufferings of even those of his own nation. He took no notice of these, but he carefully examined the wounds of the British and French, which were in nearly all cases in the lower limbs. When the German retreat began they took away the French and British as prisoners, abandoning their own wounded, who were treated with every care and even kindness when the British and French reoccupied the district.

An immediate sequel to this German surgeon's visit was an influx of British and French wounded all hit, so to speak, above the belt, in the head and chest. The conclusion drawn by all the French and Americans who witnessed his conduct is that he came here solely to correct the elevation of the German rifles. From what I have seen of the German wounded our side stands in no need of any such correction, but I am glad to believe that no French or British army surgeon would lend himself to such calculations, so unworthy of our profession.

I should like to add that operating surgeons are much needed in advanced ambulances such as this where wounded in urgent need of operation arrive daily. British or other surgeons willing to take a turn of this duty, if even for only a week or two, will be as heartily welcomed as I have been. They should apply preferably to La Croix Rouge Française, 21, Rue François I^er^, Paris. I expect to be at my London address (6, Manchester-square, W.) on Sept. 25th, and should be happy to give them any assistance in my power.

A French friend starting for the coast has kindly undertaken to find someone who will post this in London. I am, Sir, yours faithfully,

JAMES DONELAN.

Ambulance de la Croix Rouge Française, Crépy-en-Valois,
Sept. 9th, 1914.

ORAL AND AURAL SEPSIS.

To the Editor of THE LANCET.

SIR,—The public should by now be well informed as to the dangers of oral sepsis. I can endorse Mr. Morton Smale's remarks in his sensible letter in THE LANCET of Sept. 12th as to the way people discuss pyorrhœa. Septic auto-inoculation, however, in its severe forms is more commonly the result of neglected ear disease. Neither the public nor the profession seem as yet to appreciate fully the importance of ear infection. The mouth is constantly being washed out, so to speak, the ear only by syringing, often badly done. How many of our soldiers have gone to the front with infected ears!

I am, Sir, yours faithfully,

Wimpole-street, W., Sept. 11th, 1914. F. FAULDER WHITE.

THE BRITISH PHARMACOPŒIA.

To the Editor of THE LANCET.

SIR,—At its meeting on Sept. 15th the Executive Committee of this Council received a report by the Registrar on the postponement of publication of the British Pharmacopœia, 1914, which had been rendered necessary by the events of the last month.

It was resolved by the committee, on behalf of the Council, that copies in advance of publication should be made accessible to the public for inspection at the offices of the Council in London, Edinburgh, and Dublin on Thursday, Oct. 1st, 1914, at 10 A.M., and thereafter from 10 A.M. to 4 P.M. daily, and that a copy for review should on the same day be placed in the hands of the editor of each of the medical and pharmaceutical journals in the Registrar's list.

The official publication of the work will be made by notices in the *Gazette* on Thursday, Dec. 31st, 1914, on which day copies will be on sale at the price of 10*s.* 6*d.* net, by the publishers, Messrs. Constable and Co., Limited, 10, Orange-street, Leicester-square, London, W.C.

I am, Sir, yours faithfully,

A. J. COCKINGTON,
Acting Registrar.

General Council of Medical Education and Registration of
the United Kingdom, Oxford-street, London, W.,
Sept. 22nd, 1914.

CITY OF LONDON TERRITORIAL FORCE: VACANCIES FOR MEDICAL OFFICERS.

To the Editor of THE LANCET.

SIR,—In accordance with the orders of the Secretary of State for War it has been decided to raise reserve units of the Territorial Force. Consequently, there are vacancies for a number of medical officers in the Royal Army Medical Corps units of the 1st London Division. These are the 1st, 2nd, and 3rd Field Ambulances, and a Sanitary Company.

Gentlemen who desire commissions should apply by letter in the first instance to the secretary of the City of London Territorial Force Association, Friars House, New Broad-street, E.C.

I am, Sir, yours faithfully,

W. CAMPBELL HYSLOP,
Lieutenant-Colonel, Secretary.

Sept. 22nd, 1914.

UNIVERSITY OF BIRMINGHAM: FACULTY OF MEDICINE.—The opening ceremony, which was to have been held in the first week of October, and for which a medical and biological kinematograph demonstration had been arranged by Messrs. Pathé Frères, has been cancelled owing to the war.

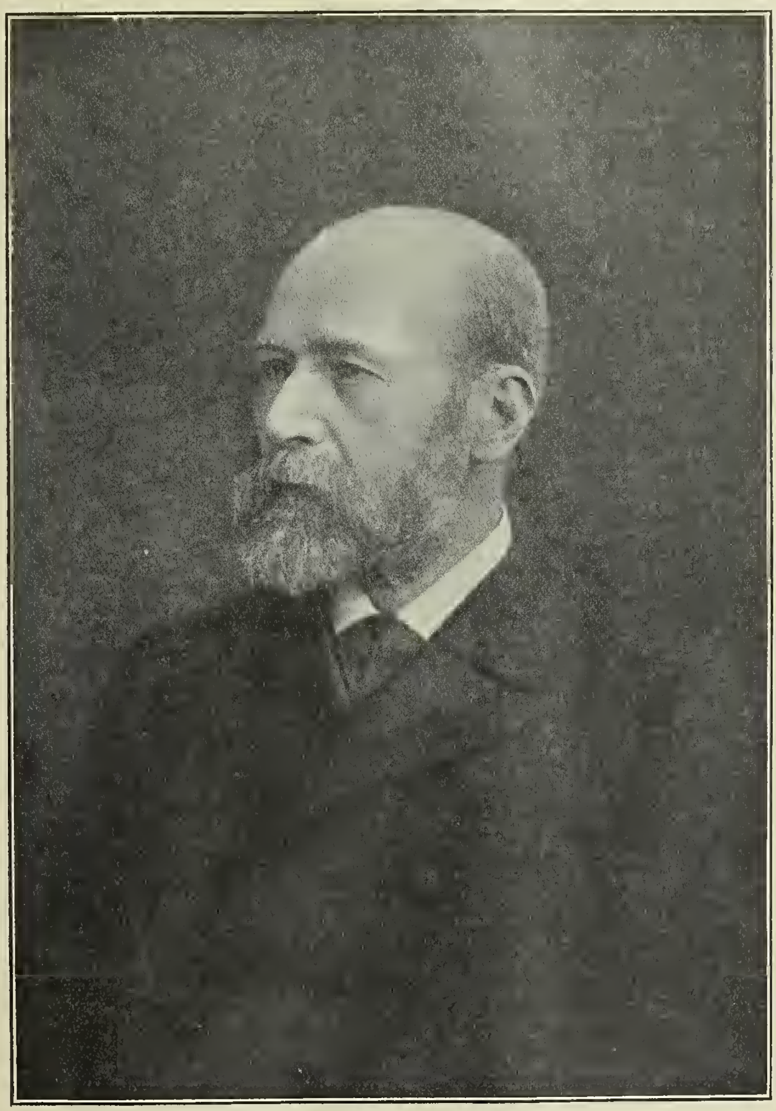
POOR-LAW MEDICAL OFFICERS' ASSOCIATION OF ENGLAND AND WALES.—A council meeting of this association was held at 34, Copthall-avenue, E.C., on Sept. 14th, Surgeon-General G. J. H. Evatt being in the chair. With regard to the appointment of a delegate to represent the association at the Congress of Social Work and Service in 1915 it was agreed that this should be postponed. The honorary secretary reported that the attempt of the Isle of Wight guardians to vary the Poor-law Orders by authorising individual guardians to grant medical orders in cases of emergency had not succeeded. A letter was read from the Local Government Board acknowledging the receipt of a copy of the council's report on the Poor-law Institutions' Order (1913). The honorary secretary said that this report had been widely circulated and had met with general approval. With regard to the Burnley dispute, the honorary secretary reported that mainly owing to the war the local profession at Burnley had decided to come to a temporary agreement with the guardians and support their arrangements for medical relief in the union till the political atmosphere became clearer, so that a temporary agreement had been come to which might possibly result later in a final one. The council unanimously approved of what had been done. The honorary secretary reported that he had been informed that the Bethnal Green guardians were approaching the Local Government Board with a view of abolishing their present district medical officers and replacing them by whole-time medical officers resident at the infirmary. He thought that the association should strongly oppose this project. There were no special reasons for such a change in the Bethnal Green area, and the interests of the sick poor were much better safeguarded by the present system. The council were unanimously opposed to extending the Bermondsey scheme to other districts. In a discussion on the effect of the war on the work of the Poor-law medical officers it was thought by the council that this work would be considerably increased. There had been large funds collected to meet the needs of dependents of those engaged in the military and naval service of the country; notwithstanding a considerable portion of the medical attendance on this class would probably be given in one way or another by Poor-law medical officers. Then there would be those thrown out of work by the war and their dependents. Already the number of medical orders issued in various unions had been greatly increased. It was agreed that it was the duty of all Poor-law medical officers to do their utmost to assist any of their brethren who were called upon, or had volunteered, to assist the State in carrying on the war; but if Poor-law medical officers were employed to attend on sickness arising among German prisoners of war it was only right that extra payment should be made them for such services.

Obituary.

SIR HENRY GREENWAY HOWSE, M.S. LOND., F.R.C.S. ENG., D.SC. VICT. (HON. CAUSÂ),

CONSULTING SURGEON TO GUY'S HOSPITAL; LATE PRESIDENT OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

WE regret to announce the death of Sir Henry Greenway Howse, which took place at his residence, the Tower House, Cudham, Kent, on Sept. 15th, in his seventy-fifth year.



SIR HENRY GREENWAY HOWSE.

Sir Henry Howse was the second son of the late Mr. Henry Edward and Isabella W. Howse, and was born at Lyncombe Hall, Lyncombe Vale, Bath, on Dec. 21st, 1841. He was educated at University College School, and after a year's private tuition, during which time he matriculated at the University of London, he began his medical curriculum in the old-fashioned way as an articled pupil to Mr. J. W. Workman, of Reading. He stayed with Mr. Workman for two years, and entered Guy's Hospital in 1861. He took prizes at the end of the succeeding three years, and passed the preliminary scientific examination of the University of London in 1863, gaining the Biology Exhibition. In the same year he won the gold medal in Botany at the Apothecaries' Hall. In 1864 he obtained the exhibition in Physiology at the University of London, and qualified in 1865 as a Member of the Royal College of Surgeons of England. In the following year he proceeded to the M.B. degree of the University of London, taking the gold medal in Obstetrics, and a year later, when taking the B.S. degree, won the surgical scholarship. He was dresser to Mr. Hilton at this time, and always spoke with gratitude of the debt which he owed to that distinguished man. In 1867, after a short interlude in Paris, he served as house surgeon. He took the M.S. degree in 1868, and passed the Fellowship of the Royal College of Surgeons of England in the same year. He now commenced teaching in the medical school of Guy's Hospital organising classes in microscopical anatomy, and in 1868 became demonstrator of anatomy and in 1870 assistant surgeon to the hospital, and about the same time surgeon to the Evelina Hospital for Sick Children.

The earliest hospital work undertaken by Howse was the introduction of Lister's antiseptic treatment into the wards of Guy's Hospital and of the Evelina Hospital, and we may here quote from some simple and modest autobiographical notes which have been placed at our disposal. "As house surgeon," he says, "I had made some imperfect attempts in the same direction, but they mostly failed, owing to the strength of the carbolic acid being too great and to the imperfections of the method used. Now, however, I spent part of my summer holiday of 1870 in Edinburgh, going round with Mr. Lister (as he then was) and watching his methods. Although I went with a very open mind, I came back convinced that, imperfect as the methods employed then were, there was a scientific basis of truth in the proceedings adopted, and determined to try and improve them for myself. It should be remembered that this was the age of the lac plaster and of the carbolic putty. Gauze even was not used at the time of my visit. An abscess was opened by covering the surface with carbolic lac plaster, and plunging a knife through it into the abscess cavity. There was no spray, but an operation was done with an assistant following the incisions with a large syringe charged with carbolic lotion, or a little later by a nozzle on the end of a long elastic tube coming from a small cistern raised above the operating table.

Imperfect as these methods clearly were, I came to the conclusion that they were capable of giving better results than those in use before. Shortly after my return to Guy's Mr. Davies-Colley was appointed assistant surgeon, and he, watching the results in my cases, agreed with me also to adopt the system. It is curious that the evolution of the hand spray occurred to us independently and at the same time as to Mr. Lister, the idea having been suggested to our minds by the use of the "styptic colloid" apparatus invented by Dr. B. W. Richardson. The invention of the steam spray, which, later on, swept away the hand sprays, was one with which we had nothing to do. It must be remembered that the condition of the wards of all our metropolitan hospitals (Guy's not excepted) was at that time very different to the present. Cases of erysipelas and pyæmia were frequent. At Guy's we had two wards, one male and the other female, devoted to the treatment of these cases, mostly filled by patients transferred there from the general wards. One of the earlier remarkable results which struck us was that operative surgery under antiseptic precautions could be performed as safely in these wards as elsewhere. The evolution of antisepticism was, of course, gradual. We had to struggle against much prejudice and opposition. Even ridicule was heaped on us. At the present day no conception can be formed of all this."

One of the earlier of Howse's ideas in surgery, as the result of the success obtained by antiseptic methods, was the reintroduction into surgical practice of ligature and excision of veins for the cure of varices, whether of the lower extremity, the scrotum, or elsewhere. The results of these operations were shown in a paper in *Guy's Hospital Reports*, 1877. Though this was not the earliest paper published on this subject, one by Mr. Davies-Colley (two cases) and one by Professor John Marshall (one case) having preceded it, yet the dates of the operations show that Howse had adopted the practice at a period before their cases. This operation, which had been abandoned from the time of John Hunter and Sir Everard Home on account of the numerous septic deaths occurring after it, is now a common and successful procedure in surgery. The two-stage operation in peritoneal cases, where a hollow viscus such as the stomach, colon, or other portion of the intestine had to be opened, was also introduced into surgery by Howse. Originally applied to the stomach for gastrostomy in cases of epithelioma of the œsophagus, it was soon applied to colotomies. The method is, of course, not so frequently applied now as it was a few years ago, the necessity to delay the opening of the bowel not being often present. Excision of joints was also a subject Howse worked at greatly. He wrote a paper on excision of the knee, showing the ultimate result of 140 cases, all of which he had excised. This was published in *Guy's Hospital Reports* for 1892, vol. xlix., many years after the operations. The great success which attended these cases caused the operation to become a common one at the time, at any rate at Guy's Hospital, and it has maintained this position ever since.

To return to Sir Henry Howse's official career, in 1871 he resigned the demonstratorship of anatomy at Guy's Hospital and was appointed joint lecturer, with Mr. Durham, on this subject. This post he held till 1888, when he was appointed joint lecturer on surgery, which position he retained till his final resignation in March, 1902. In 1875, on Mr. Birkett's resignation, he was promoted full surgeon to Guy's Hospital, retaining the office till this year, when he was appointed consulting surgeon.

At the Royal College of Surgeons of England Sir Henry Howse was a distinguished figure. Elected in July, 1889, a member of the council of the College, he served the office of junior Vice-President in 1897 and of senior Vice-President in 1899. In this year he gave the Bradshaw lecture on the present condition of surgery as compared with what it was 100 years ago.[1] In this year, also, on the outbreak of the South African war he occupied the Presidential chair at the College for six months during the late Sir W. MacCormac's absence at the seat of war, being elected President in 1901. He held the presidency for three years, and received the honour of knighthood in 1902.

Dr. Hale White has sent us the following personal recollections of his dead teacher and friend:—"My recollections of Sir Henry Howse go back to the late 'seventies,' for I was full dresser to him for six months in 1878–79, and I had previously been his clinical clerk. There was much competition to dress for him; his 'firm' were very proud of him, and this for many reasons. In the first place, we knew that he was the first great surgeon in London to go to Edinburgh to study Lister's methods. This he did in 1870, and in the same year began to treat cases in Guy's by Lister's method. In that year and for four years after he, together with Mr. Davies-Colley, had charge of the wards set aside for erysipelas and severe septic cases, and even in these unfavourable surroundings he was able to do amputations and other severe operations with safety provided Lister's directions were carried out. In the general wards operations on bones and joints from which most surgeons shrank were performed by Henry Howse. We felt it to be an honour to be working under a surgeon who was in advance of the general run of surgeons in London, and we rather enjoyed the sarcasms which were levelled at our chief by his unprogressive elders. It is almost impossible to imagine now the opposition to Listerism in London in the early 'seventies.' Howse never talked much about the superiority of Lister's method; he took it for granted that we could by seeing his results judge for ourselves, and certainly each of his successors as they came on the staff practised it, so that by the time he became full surgeon every assistant surgeon was treating wounds in the reformed way and with the same results. Compound fractures that most surgeons would have despaired of were successfully cured. In every department of surgery Howse was always ready to examine the newest suggestions and adopt them if they were sound, and the feeling that we were working with a man who was on the side of progress and did not receive new ideas in a carping spirit was an immense stimulus to his dressers, who naturally did their utmost to make everything with which their chief had to do as great a success as possible. Such a master made us think and opened our eyes to the great possibilities of surgery. As a teacher he would take infinite trouble. He was a clear thinker; he expressed himself exactly and interested the men thoroughly. Naturally he had a large following with him when he went round his wards, because men came to see the new antiseptic surgery, but even when there were no operations or dressings to be done and he was only teaching surgery many came round with him. At the extremely inconvenient time of Saturday afternoon he used to have a clinical class for discussing the diagnosis of difficult cases; but in spite of the time chosen these classes were highly popular because the cases were discussed so clearly and thoroughly that everyone went away having learnt. The teaching was not eloquent and no brilliant things were said, but it was so thorough and the teacher took such infinite pains that it was easy to understand why the classes were so large. I ought to add they were not compulsory. Working with Howse meant hard work, but no one could by example have made his dressers more willing to work, and it may be truthfully said that every one of them thoroughly enjoyed working for him, and felt that he was privileged in being a member of the Howse firm. He was the only surgeon who went round his wards on Sunday, but his dressers turned up regularly every Sunday morning at 10 o'clock, however far off they lived; and these quiet Sunday morning rounds were much appreciated. His kindness to dressers and patients alike turned mere admiration into real affection. No trouble seemed too great for him. I have seen him after his rounds spend a long time trying to mend a doll belonging to a little girl patient; and when any student in after life was overtaken by illness Howse was kindness itself. He was an excellent colleague, never shirking the less ornamental work of a hospital teacher; he was punctual in attending all hospital meetings, and his advice at them was always sound. Indeed, as a surgical pioneer, as a teacher, and as a worker in the administration of the school he was an invaluable asset to the Medical School of Guy's Hospital, and few of those who have been on its staff have done more for it."

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[1] THE LANCET, Dec. 23rd, 1899, p. 1717.

After his retirement from practice Sir Henry Howse went to live at Cudham, Kent, and died there. The funeral took place at St. Luke's Cemetery, Bromley, there being present, in addition to Sir Henry Howse's son and his brother-in-law, Dr. W. L. H. Marshall, J.P., Sir W. Watson Cheyne, the President of the Royal College of Surgeons of England, Sir James F. Goodhart, Sir W. Arbuthnot Lane, Dr. Frederick Taylor, Dr. W. Hale White, Dr. G. Newton Pitt, Mr. C. H. Fagge, and Mr. F. J. Marshall.

CHARLES STEELE, M.D. DURH., F.R.C.S. ENG., L.R.C.P. LOND.,

LATE SENIOR SURGEON, BRISTOL ROYAL INFIRMARY.

Dr. Charles Steele died at his residence, Clifton Villa, Clifton, on Sept. 20th, after a long illness. Dr. Steele was born at Macclesfield, and was the son of the late Rev. John Steele, vicar of Christ Church in that town. He received his medical education at Bristol, and became M.R.C.S. Eng. in 1860 and L.R.C.P. Lond. in 1861, taking the F.R.C.S. Eng. by examination in 1869. After qualifying he commenced practice at Clifton. He was formerly surgeon to the Bristol Royal Infirmary and lecturer on physiology at the Bristol Medical School, and at the time of his death he was consulting surgeon to the Bristol Children's Hospital.

Dr. Steele had at one time a very extensive practice, private and consulting, and had contributed valuable material to the medical journals. He was highly esteemed in Bristol and Clifton, and had been a member of the council of the Bath and Bristol branch of the British Medical Association. He was in his seventy-seventh year, and leaves a widow and five children—four daughters and one son—to mourn their loss.

DAVID JOHNSTON, M.D. R.U.I., M.CH., L.M.

BY the death of Dr. David Johnston, which occurred on Sept. 11th, the community of Holywood, co. Down, have sustained a real loss. A native of Holywood, Dr. Johnston studied at Queen's College, Belfast, and in 1870 graduated M.D. of the old Queen's University, Ireland, and M.Ch. and L.M. in 1873. Starting practice in his native town he lived there all his life, and in addition to carrying on a large practice he served his neighbours in a variety of ways. When a younger man he acted as chairman of the Holywood town commissioners, and up to the time of his death he was the local registrar of births, marriages, and deaths. He was a man of diverse tastes, and, an accomplished musician himself, he did everything to advance the study of music around him. His personality and his professional knowledge gained him wide popularity and consideration. He leaves a widow and family of two daughters and one son, Dr. H. M. Johnston, who is resident medical officer of the Royal Victoria Infirmary, Newcastle-on-Tyne.

GERALD GRACE, L.R.C.P. LOND., M.R.C.S. ENG., L.M.S.S.A.

Mr. Gerald Grace, on Sept. 15th, whilst driving in his motor-car near Springs, in the Transvaal, was shot dead by the police, who unfortunately mistook his automobile for that of one belonging to the Jackson gang of desperadoes. It will be remembered that General Delarey, on the same day, was killed under precisely similar circumstances. Mr. Gerald Grace, who was in his forty-eighth year at the time of his death, was the second son of Mr. Alfred Grace, M.R.C.S., of Chipping Sodbury, Gloucestershire. He received his medical education at Bristol and at Guy's Hospital. After qualifying he served as surgeon on the South African Union Line of steamers and there made the friendship of the late Mr. Cecil Rhodes and Sir Starr Jameson. He was civil surgeon during the South African war, and was attached to the 83rd and 84th Battery of the Royal Field Artillery, and went with Lord Roberts's column from Bloemfontein to Pretoria, and later he was attached to the hospital at Johannesburg. He was awarded the medal with six clasps. At the conclusion of the war Mr. Grace married and commenced practice at Springs, Transvaal. He soon became very popular, and quite recently was elected mayor of the town.

CENTENARIANS.—Mrs. Allen, of Bath, celebrated the hundredth anniversary of her birthday on Sept. 14th.—On Sept. 21st Mr. James Newth, of Dursley, completed his 100th year. His health is good.

QUEEN'S UNIVERSITY OF BELFAST.—Of the eight gentlemen elected on Sept. 9th as representatives of Convocation on the Senate of the Queen's University of Belfast—to hold office for five years—the following four are medical graduates: Dr. J. W. Browne, Dr. W. Calwell, Dr. R. W. Leslie, and Mr. T. S. Kirk.

THE WAR.

The Organisation of Medical Service in the Field.

At the present time it may be of some interest to our readers to give a short account of the system of dealing with casualties in action and with cases of sickness amongst the troops on active service.

Division into three zones.—The medical organisation of an army in the field is divided into three zones: the collecting zone, the evacuating zone, and the distributing zone. This division of the areas of action of the medical force, with a clear delimitation of their respective responsibilities, is due to the late Sir Thomas Longmore, for many years professor of military surgery at the Army Medical School, Netley.

Collecting zone.—The collecting zone corresponds with the area of active military operations, the fighting-line and its immediate supports; here are the regimental medical establishments and the field ambulances. Every battalion of infantry, regiment of cavalry, and brigade of artillery is accompanied by a medical officer, who has with him three or four men of the Royal Army Medical Corps and regimental men acting as stretcher-bearers, who have been trained in first aid. These men during an engagement apply a first field dressing and give first aid generally to the wounded; they then remove them if possible from the firing line to the nearest and most suitable cover, where is established a regimental aid post. In action against a civilised enemy no one except the stretcher-bearers is to carry a wounded man to the rear unless specially ordered to do so. The field ambulance is divided into three sections, each of these consisting of a bearer subdivision and a tent subdivision. The duty of the bearers is to collect wounded from the regimental posts and bring them to the ambulance wagons or to a dressing station, these dressing stations being established by the tent subdivision of the ambulance. (It is to be noted that the word *ambulance* signifies the unit of organisation, and not, as often used in popular phraseology, a wagon for transporting sick or wounded men.) While, during the continuance of a battle, the bearer parties convey as many wounded as possible to cover, the main work of collection and removal from the area of fighting takes place after the battle is over. But in these days of prolonged actions extending over many days and a very wide area, attempts are made to collect the wounded when practicable. When the action is over, it may be necessary to detail detachments of fighting troops to aid in this work, making a systematic search over the whole ground. To every wounded man a specification tally is attached, giving his name and regimental number, and an indication of the nature and severity of the wound. The ambulance wagons convey the wounded to the dressing station, which is established in a suitable building, if available—failing these, in tents. The selection of the location of a dressing station is an important matter, and a great deal depends on its suitability or the reverse; it must be as far forward as is consistent with reasonable safety, yet must be accessible to vehicles, have a good water-supply, and if possible be in a suitable building rather than under canvas.

Evacuating zone.—In the evacuating zone the medical service consists of clearing hospitals, ambulance trains, advanced medical store depôts, and in certain cases stationary and general hospitals; these units belong to the line of communications. The clearing hospital is considered to be "the pivot upon which the removal of the sick and wounded turns": to it converges the collecting zone, and from it diverge the evacuating and distributing zones. There is one clearing hospital for each division of the field army, and where suitable buildings are available they should be used. Whether buildings are used or tents it is absolutely necessary that the area should permit of great expansion, though the hospital is nominally equipped for 200 sick. From its personnel are detached from time to time parties to establish rest stations, a series of these constituting a column by which evacuation of the wounded or sick takes place. The clearing hospital relieves the ambulances and passes sick and wounded down the line of communications. It must not itself become clogged, and yet care must be taken not to send men away down the line of communications who may in a short time be well enough to do duty at the front. Ambulance trains are mobilised in the proportion of one to each division of the field army; evacuation of sick and wounded by railway transport is the best and speediest method, and is adopted wherever feasible. Ambulance wagons are not as a rule sent further from the medical unit to which they belong than would allow them to return the same day; where railways are not available all suitable vehicles that can be obtained locally may have to be utilised. Transport by water may be the best method, and is well adapted for serious cases.

(To be continued.)

The General Medical Council and the Position of Medical Students.

At the last meeting of the Executive Committee of the General Medical Council, held on Sept. 15th, the President, Sir Donald MacAlister, read correspondence with several of the licensing bodies in regard to the position of students who were absent on service during the war, and an answer which it was proposed to send in such cases. The committee approved of the terms of the President's letter as drafted, namely:—

> With regard to the courses of study and examinations prescribed for professional qualifications, it is the statutory duty of the General Medical Council to secure the maintenance of such a standard of proficiency as shall sufficiently guarantee the possession by candidates of the knowledge and skill requisite for the efficient practice of their profession. To this end the Council has formulated, for the guidance of the licensing bodies, a series of recommendations respecting such courses. These recommendations represent in general terms the minimum curriculum which, in the Council's opinion, should be required by the licensing bodies, and the Council notes with satisfaction that the regulations of the several bodies give effect to them. Cases may arise in which, during the present national emergency, the bodies deem it expedient to modify or suspend the application of their regulations to particular candidates; but the Council expects that all such cases shall be duly recorded and reported to the Council in the usual way. The Council feels sure that, in dealing with applications for modification or suspension of their regulations, the bodies concerned will recognise the importance, in the public interest, of maintaining unimpaired the present standard of knowledge and skill required of all who seek to be admitted to the status and privileges of registered practitioners, and will accordingly agree with the Council that it is desirable to

secure, in every instance, that the requirements of the minimum curriculum are substantially fulfilled.

The President reported that Mr. Norman C. King, General Registrar, had been called to serve as major in His Majesty's Territorial Force, and would in consequence be unable to give regular attendance at the office for the present. The committee expressed its good wishes to Major King, gave him leave of absence for the duration of his active military service as from Sept. 15th, and appointed Mr. A. J. Cockington to be acting registrar.

A USEFUL SANITARY SERVICE.

The mobilisation of the Territorial Force and the active recruiting for the Regular Army have led in London, as probably elsewhere, to the concentration in buildings of large numbers of men who as a result are in some instances, perhaps often, inadequately supplied with the opportunities for personal cleanliness to which they have been accustomed in their own homes. To meet this temporary difficulty a number of the London sanitary authorities have permitted soldiers in uniform to make use of the public baths in their districts without charge. In some instances, where uniform has not yet been provided, the written statement of an officer has been accepted that those wanting baths belong to the military force, and again the assurance of the recruiting officer has enabled recruits to be cleansed before being medically examined. This is a valuable service which deserves recognition, and it would be a great gain if the action of the city and borough councils in London, who have thus aided the military authorities, were extended throughout the whole of the County of London. Indeed, why should not these opportunities for cleansing be made available in all districts for soldiers and recruits, whether with or without uniform?

MEDICAL CASUALTIES AT THE FRONT.

The following casualties to officers of the Royal Army Medical Corps and the Royal Naval Medical Service on active service have been reported:—

Killed: Captain Frank Forrest, Captain Thomas Scatchard, and Lieutenant Arthur Keith Armstrong. *Wounded:* Lieutenant-Colonel Charles Dalton and Lieutenant Edwin Joseph Wyler. *Wounded and missing:* Captain Malcolm Leckie. *Missing:* Captain William Irwin Thompson, Captain Edward Meredyth Middleton, Captain Gerard Ainslie Kempthorne, and Lieutenant Walter Seymour Danks.

The following officers of the Royal Army Medical Corps previously stated to be missing have since reported themselves:—Major F. S. Irvine and Captain P. Dwyer.

The following are unofficially reported prisoners of war:—Major W. B. Fry, Major J. C. Furness, Captain W. K. Beaman, Captain Wright Mitchell, and Captain H. M. J. Perry.

The following officers previously reported missing are now unofficially reported prisoners of war:—Major P. H. Collingwood, Captain P. C. T. Davy, Captain W. Egan, Captain J. P. Lynch, Captain H. E. Priestley, Captain A. A. Sutcliff, Captain A. C. Vidal, Lieutenant P. P. Butler, Lieutenant S. M. Hattersley, Lieutenant J. L. Lauder, and Lieutenant L. M. Routh.

We are very glad to state that Captain A. S. Williams, R.A.M.C., who was reported killed last week, is now unofficially reported safe, but a prisoner of war.

The three cruisers which were torpedoed on Sept. 22nd carried, according to the latest Navy List, seven surgeons, and good news is announced of five. In the *Cressy* Staff-Surgeon Edward C. Sawdy, and in the *Hogue* Staff-Surgeon P. T. Nicholls and Surgeon (R.N.V.R.) Leonard Irvine are stated to be among the saved, while it is reported that Mr. Gerald Martin, who was serving as a temporary assistant in the *Cressy*, has been rescued. In the *Aboukir* Fleet-Surgeon O. Rees has been saved. The following are presumed dead:—Surgeon H. J. Hopps in the *Aboukir* and Surgeon A. E. Turnbull (R.N.V.R.) in the *Cressy*.

MOTOR-CARS FOR WAR SERVICES.

The motor-cars of medical men in active practice are naturally immune from war service. But many of our readers are receiving inquiries as to the present and future need for motor conveyances in Red Cross work at home and at the front, and in the distribution and relief of refugees of war. For their information we quote from a circular which has been sent to us by the Automobile Association and Motor Union. This states that although over 19,000 members of the association have volunteered their cars and motor cycles for war services, difficulty is still being experienced in keeping pace with the requirements of the authorities and organisations working in various parts of the country. To facilitate the supply and distribution of cars called for the secretary will be grateful if members will notify which branch of volunteer work they would prefer to undertake, also the time they have available. Members may volunteer for:—

1. *Military service at home*, which involves placing cars and drivers at the disposal of the military commands, at the various war centres throughout the British Isles, for the use of staff officers. Cars are also required for foreign service, chiefly in connexion with ambulance work.

2. *Recruiting work in London and the provinces.*—Cars engaged in this work would bring in recruits from outlying districts, or convey recruiting officers to the various recruiting depôts.

3. *Red Cross work.*—This consists of conveyance of officials to various depôts, attending ports and railway stations to convey wounded, on arrival, to hospitals, and removing wounded from London to various convalescent centres. Cars with motor ambulance bodies for lying-down patients are in greatest demand, and to assist members willing to convert their cars for this work the association has a variety of designs and estimates, showing that such conversion can be accomplished for a moderate outlay. At the same time comfortable landaulette, limousine or cabriolet cars are very welcome for carrying patients able to sit up.

4. *Refugee work.*—A considerable number of cars are required for carrying officials to the various concentration camps, meeting refugees at ports and stations, and conveying them to their destination, also for removing refugees from concentration camps to temporary abodes.

Members volunteering for any of the above services will receive as much notice as possible before being called upon, and when cars are offered it will greatly assist the association if particulars are furnished. Communications should be addressed to the Secretary, A. A. and M. U., Fanum House, Whitcomb-street, Coventry-street, London, W.C.

GARMENTS FOR THE SICK AND WOUNDED.

We are asked by the British Red Cross Society to deny that this society has got a sufficient supply of garments for the sick and wounded. Reports to the contrary are absolutely incorrect. Only this week the following telegram was received from Rouen at 83, Pall Mall, the headquarters of the society, from Sir Alfred Keogh, the society's chief commissioner in France:—

> Send with utmost speed to Rouen, in addition to articles now on way, shirts, pyjamas, sheets, pillow-slips, mackintosh sheets, slippers, and socks. Send thousands of above. You cannot send too many.—KEOGH.

All articles should be addressed to the British Red Cross Society, Stores Department, 83, Pall Mall, London, S.W.

THE SOUTHERN TERRITORIAL GENERAL HOSPITALS.

We have already published a brief note upon the First Southern General Hospital, which is at Bournbrook, Birmingham—Lieutenant-Colonel F. Marsh in Command, with Major J. E. H. Sawyer and Quartermaster and Hon. Lieutenant E. C. Benison attached. The hospital has already been receiving many wounded, as well as a certain number of reservists and recruits.

Second Southern General Hospital.—This hospital was mobilised on August 5th. The new wing of the Bristol Royal Infirmary was gradually emptied of its civil patients, many of whom were taken over by other institutions, and was then prepared for the reception of soldiers. It had always been understood that the whole of the infirmary was to be turned over to the military authorities in time of war, but apparently this was a misapprehension, for the old wing of the institution is still in use for civil work, and the new Poor-law infirmary at Southmead is being made ready to receive military patients as soon as the numbers of these exceed the accommodation available at the Royal Infirmary, which amounts to about 250 beds. The wards to be opened at Southmead will contain an approximately identical number of beds. It is probable that these will be reserved for medical cases, while those now in use at the Royal Infirmary will be devoted to surgical patients. About the middle of August a few Territorials were admitted to the wards suffering from minor injuries and ailments, and on Sept. 2nd a batch of about 150 men were brought back from the Expeditionary Force serving in France. Only a few of these men were seriously wounded. They had most of them been travelling for about four days, and this, in addition to the severe strain thrown on them during the retirement from Mons, had induced such an extraordinary degree of fatigue that most of them hurried to bed and slept for the best part of 24 hours. Some were suffering from rheumatism, bronchitis, and other effects of exposure, but on the whole they looked surprisingly fit. The Bristol populace has idolised them to an embarrassing extent, so much so that the recreation ground of the infirmary, which is rather inconveniently exposed to the public gaze, has been boarded in. Already a number of the men have been discharged to their respective depôts as fit for duty. The *à la suite* officers who have been called up for service are as follows: Colonel: J. Paul Bush, C.M.G. Lieutenant-Colonels: J. Michell Clarke and G. Munro Smith. Majors: G. Parker, R. G. P. Lansdown, A. B. Prowse, and J. Swain. Captains: F. H. Edgeworth, J. O. Symes, J. M. Fortescue-Brickdale, C. F. Coombs, T. Carwardine, H. F. Mole, J. L. Firth, E. W. H. Groves, E. H. E. Stack, H. Hill, J. Taylor, and W. S. V. Stock. Registrar: F. C. Nicholls. A few days ago the Lord Mayor of Bristol was taken round by Colonel Bush. The Duke and Duchess of Beaufort have also visited the hospital. It should be added that, thanks to the munificence of Mr. R. E. Bush, a convalescent branch has been opened at his house at Bishop's Knoll, where 100 men could be accommodated.

Fourth Southern General Hospital.—During time of peace the office of this hospital is at Territorial Buildings, Millbay, Plymouth. The officer in command is Lieutenant-Colonel H. W. Webber, and Major W. C. Wilson and Quartermaster and Hon. Lieutenant H. B. Briggs are attached. On mobilisation the following physicians and surgeons form the staff. Lieutenant-Colonels: Dr. H. Davy, Mr. E. J. Domville, Dr. E. L. Fox, and Mr. J. E. Square. Majors: Dr. J. Mortimer, Mr. A. C. Roper, Mr. A. N. Davis, Mr. W. L. Woollcombe, Dr. R. L. Rutherford, Mr. R. H. Lucy, Mr. R. Coombe, and Dr. J. W. Gill. Captains: Mr. C. E. Bean, Mr. J. H. Dawe, Mr. G. F. Aldous, Mr. R. V. Solly, Mr. H. Andrew, Dr. E. G. S. Saunders, Dr. W. C. Hamilton, Dr. W. L. Pethybridge, Mr. G. J. Arnold, Dr. G. C. Sandford, Dr. T. Horton, Dr. C. D. Lindsey, Mr. B. Dyball, Dr. C. L. Lander, Mr. G. A. Roberts, Mr. E. G. Smith, Mr. G. C. S. Robinson, Mr. H. G. Pinker, and Dr. E. R. Clarke.

THE WOUNDED AT THE SECOND EASTERN GENERAL HOSPITAL (BRIGHTON).—Of the 330 wounded from the front admitted to the Second General Eastern Hospital the majority of the cases were naturally surgical. They were also the less seriously injured of the combatants, as the very badly wounded were retained at the hospitals at the port of landing. Although the men had had a long and trying journey by road, boat, and train, they arrived at Brighton in excellent condition, most of them being able to sit up in the cars awaiting them at the station to take them to the hospital. Of the surgical cases, by far the larger number were bullet wounds, and nearly all of these were caused by shrapnel, only a few by rifle or shell. In those cases in which a bullet was left in a patient, and was causing no harm, nothing was done in the way of removal, but there were a good many in whom for various reasons it was decided to undertake the removal of the bullet. Very few of the wounds had become septic, and many of the injuries were quite trivial, the men being able to be discharged for furlough in a few days. Those upon whom it was decided to operate were examined carefully by X rays, but in spite of an apparent exact localisation of the piece of lead, in two instances in which the bullet was deeply seated in the muscles of the thigh or calf, considerable difficulty was experienced in finding it—in fact, the search had to be given up and the bullet left in.

The following are a few examples of cases of bullet wounds encountered, reported in brief notes:—Shrapnel wound of lung: This man was shot through the back, the bullet entering near the angle of the scapula, penetrating the lung, but not coming out of the chest. Immediately after his injury he began to spit up blood. On admission there was a small abscess cavity over the third rib in front in which the bullet could be felt. The man said he was perfectly fit, but his temperature kept up to about 101° F., and there were signs of fluid filling about half his pleural cavity. The bullet was removed without difficulty, and the abscess drained. Blood-stained fluid was withdrawn from the pleural cavity, and he is doing well. Bullet wound of foot: Shrapnel embedded in head of middle metatarsal bone. In this case some little difficulty was experienced in finding the bullet. The upper and under surfaces of the bone were explored, with no result, but on carefully probing the bone itself the bullet was found firmly embedded in its head, and was removed with ease. Shrapnel wound of face: In this patient the bullet had penetrated one cheek and upper jaw, passed through the mouth, and out through the other upper jaw and cheek. Two foul cavities were found in the mouth, one in each bone through which the bullet had passed. Under treatment with peroxide of hydrogen lotion the patient soon improved. Bruise of knee caused by spent shell: A shell of the size of two fists struck a man in the back of the knee. No wound was caused, only slight bruising. The shell, of course, must have been nearly spent to have caused so trifling a lesion. Bullet wound of thigh; secondary hæmorrhage: This man was shot through the thigh on the inner side, the bullet passing right out. He did quite nicely till two days after admission, and about ten days after being wounded. After some slight exertion blood began to pour from the wound of exit. This was enlarged, the vessel (the anastomotica magna) sought for, found and tied, and the patient did quite well.

Of cases other than bullet wounds the following are of interest. Fracture of the larynx, surgical emphysema: This patient fell a distance of 60 feet over a cliff. When he was admitted he was found to be suffering from a fracture of the larynx with surgical emphysema all over the neck, back, chest, and abdomen, down to Poupart's ligament. He had a good deal of respiratory distress. There were no other injuries beyond a considerable bruising of the body. With rest in bed he is making good progress towards recovery.

The operations performed in the hospital have been as follows: Fourteen for the extraction of bullets (in two of these the bullet could not be found); two for removal of cartilage of the knee; two for appendicitis; three for varicose veins; one each for secondary hæmorrhage, fracture of the neck of the humerus, hydrocele of the cord, exploration of the kidney, mastoid disease, exploration of the olecranon, hæmorrhoids, and hernia. A good many men have returned invalided with varicose veins. Those who consent to operation will be allowed to return to the front after the operation has been performed. Those who refuse, or who are considered unfit subjects for operation, are being invalided out of the service. The cases show the importance of a careful examination of recruits for varicose veins. The unwonted strain of long and tiring marches knocks up these men quite soon. As regards the medical cases, the great majority were minor affections, such as bronchitis, pleurisy, "dysentery," and "rheumatism." Of the cases sent in as dysentery none were found to be true examples of this disease. All were suffering from slight diarrhœa which got rapidly well. There were no examples of enteric fever. Rheumatism of the feet was quite common, and occurred especially in reservists. It was probably due to the prolonged strain of the feet in marching by men not accustomed to it, accentuated by the damp and wet through which many of them had to trudge for days without the opportunity of changing. The gonorrhœal element was present in some. The only fatal case among the admissions was one of chronic otitis media, acute mastoiditis, and meningitis. The man had old-standing ear trouble, which suddenly lighted up, the mastoid antrum becoming acutely inflamed. The mastoid was opened up and evacuated, and the lateral sinus exposed. This was quite healthy. The patient died a few hours after with signs of acute meningitis.

The general impression given by an examination of all the wounded was that about 30 per cent. of them were trifling cases, hardly requiring admission into hospital. They were able to be discharged directly their travelling warrants could be obtained from the War Office. Of the more serious cases, shrapnel wounds, especially of the lower extremity, comprised the majority, but with few exceptions the injuries caused were not severe, and will leave no after-effects.

THIRD LONDON (CITY OF LONDON) GENERAL HOSPITAL.—In our issue of August 29th we gave a list of the *à la suite* medical and surgical staff of this military general hospital which has been established at the Royal Victoria Patriotic Asylum, Wandsworth. The buildings are of the early Victorian period, and required considerable modification before they could be regarded in every way satisfactory for a modern military hospital. Nevertheless, under the determined energy and direction of the commanding officer, Lieutenant-Colonel H. E. Bruce Porter, and his assistants, beds were available from the first day of mobilisation, and on the tenth day 520 beds were actually made up in various parts of the building. The school itself is only suitable for 263 beds, but huts are being erected to bring the beds up to the required number. The "infirmary block" will eventually be used for officers, but at present contains the operating theatre, which was equipped and ready six days after mobilisation. The arrangement of the wards is now complete. Hopper ventilation has been installed, and the sanitary fittings—bed-pan sinks, baths, lavatories, &c.—are highly satisfactory. One passenger lift and two food lifts have been fitted up. An excellent X ray department has been arranged with the most modern appliances, not, indeed, only according to "schedule," but with apparatus capable of taking photographs with five seconds' exposure. The pathological and bacteriological laboratories are also ready. On the ground floor of the main building are a large receiving room, and the administrative offices and mess-rooms arranged round two open quadrangles; the wards are on the first and second floors. The matron is Miss Holden, who organised the Richmond Hospital at Dublin. She will have a large staff of sisters and nurses under her. A section of the hospital has been formed at the Middlesex Hospital under the charge of Lieutenant-Colonel W. Pasteur; Captain T. H. Kellock is also attached. A number of territorials have been admitted.

THE MAINTENANCE OF THE SANITARY SERVICE.—The Royal Sanitary Institute has issued a letter to the members and associates calling attention to the circular issued by the Local Government Board to local sanitary authorities with regard to the maintenance of the sanitary service of the country during the war. In reply to this letter the institute has received offers from many of the members and associates to help in carrying on the sanitary administration. These offers are being sorted up and filed for reference purposes. The council think that it may be of service to local authorities whose staffs have been depleted owing to the war to know that information is available at the institute as to qualified men and women who are able to take up temporary work in sanitary administration, and also as to those who would be willing to give some voluntary assistance in public health work. The institute will be pleased to afford any information or assistance possible to those authorities who may wish for it, if they will write to the Secretary, 90, Buckingham Palace-road, London, S.W.

FIELD SANITATION.—As a result of the collaboration between Mr. James Menzies and Dr. Myer Coplans, Beit Memorial Fellow, working at the Lister Institute, on the problem of the effective disposal of sewage in the field by means of a self-supporting system of destructive distillation, an apparatus has been devised suitable for field work the practicability of which has recently been demonstrated to military and naval representatives in a series of tests conducted on a large scale at Wimbledon Sewage Works. As an outcome the War Office has sanctioned the immediate construction of suitable apparatus capable of dealing with the needs of 12,000 men in the field. In this instance no room is left to carp at the readiness of a great State Department upon whom now rests the enormous responsibility of dealing effectually and promptly with a problem of such infinite danger and bristling with so many complexities as field sanitation.

RADIUM AND THE WAR.—The war has affected the Portsmouth Radium Fund in a remarkable manner. The order was placed with a German firm and the radium was delivered at the Radium Institute in London towards the end of July, but the test as to quality was delayed, and on August 4th war was declared between Britain and Germany. Acting upon orders, the institute declined to release the radium pending further instructions. The facts have been placed before the Home Office and also the Committee on Trade with the Enemy. Replies have been received stating that there is no objection to receiving and paying for the radium supplied by a German company so far as this transaction is concerned. With this double assurance payment has been made, a certificate having been received from the Radium Institute to the effect that the radium had been found to be of the quality required.

VACANCIES IN THE ROYAL ARMY MEDICAL CORPS, TERRITORIAL FORCE.—The secretary of the City of London Territorial Force Association writes in our correspondence columns this week that in consequence of the recent decision to raise reserve units of the Territorial Force there are vacancies for a number of medical officers in certain Royal Army Medical Corps units of the 1st London Division—viz., the 1st, 2nd, and 3rd Field Ambulances, and a Sanitary Company.

"WAR BABIES" IN BELFAST.—The executive committee of the Belfast branch of the Women's National Health Association of Ireland have decided to open a department at the Babies' Club, Divis-street, Belfast, where the wives residing in that city of soldiers and sailors now in the fighting line can, when sent from the Soldiers' and Sailors' Families Association and other charitable societies, get advice and help, provided they are really deserving cases. This "child welfare" work began on Sept. 16th, and is being carried out under the personal management of Lady Byers (president) and Mrs. Robert Campbell (secretary), of the Infantile Mortality Section of the Women's National Health Association in Belfast.

WAR VERSES.—A collection of stirring verses which all make a direct appeal at the present moment has been issued this week by Messrs. Cope and Fenwick, 8, Buckingham-street, Strand, W.C., under the title, "Lord, God of Battles: A War Anthology." This small volume is thoroughly well got up, and all profits from its sale will be given to the Prince of Wales's National Relief Fund. The price is 1*s.* net in brown paper cover, or 2*s.* net in cloth gilt binding. The verses include some of Shakespeare's noblest lines and extracts and poems on warlike subjects from the works of British writers, dead and living. Mr. A. E. Manning Foster, the compiler, has done his work judiciously.

ADDRESSES FOR REFERENCE.

In THE LANCET of August 22nd we published a list of addresses which would be found useful by our readers for reference in connexion with public organisations and other matters arising out of the war. We now supplement this with some additional and revised addresses which we have compiled from an official leaflet issued by the Local Government Board:—

Ambulance Department, Order of St. John, St. John's Gate, Clerkenwell, E.C.

Board of Agriculture and Fisheries, S.W. (Prices and supplies of home-grown foodstuffs.)

Board of Education, S.W. (Offers of voluntary personal assistance in general.)

Board of Trade, S.W. (Prices of necessaries; supplies; production; employment; prohibition of, and permission to, export goods.)

Drugs Committee, Wellington House, Buckingham Gate, S.W. (Stocks and prices of drugs and medicines.)

Development Commission, 6A, Dean's-yard, S.W. (Public Works, including works for the relief of distress.)

Government Committee on Prevention and Relief of Distress, Local Government Board, Whitehall, S.W.

Home Office, S.W. (Destitute aliens.)

Information Bureau, India Office, S.W. (Offers of voluntary personal assistance from officers retired from the Indian services or on leave from India.)

Local Government Board, London, Edinburgh, or Dublin. (Public works, including works for the relief of distress.)

Local Government Board, Whitehall, S.W. (War refugees in general.)

Prince of Wales's National Relief Fund—(*a*) Collection: Buckingham Palace, S.W.; (*b*) Applications for grants for relief of distress among families of soldiers and sailors: 3, Queen Anne's-gate, S.W.; (*c*) Applications for grants for relief of distress in other cases: Government Committee on Prevention and Relief of Distress, Local Government Board, S.W.

Queen's Work for Women Fund—(*a*) Collection: Foley House, 8, Portland-place, W.; (*b*) Administration: Central Committee on Women's Employment, Wimborne House, S.W.

Road Board, Queen Anne's Chambers, Broadway, S.W. (Public works, including works for the relief of distress.)

St. Andrews Ambulance Association, 176, West Regent-street, Glasgow.

Soldiers' and Sailors' Families Association, Headquarters, 23, Queen Anne's-gate, S.W. (Assistance to families of soldiers and sailors.)

Soldiers' and Sailors' Help Society, 122, Brompton-road, S.W. (Comforts for sick and wounded, private hospitals, voluntary aid, convalescent homes.)

Victoria League, 2, Wood-street, Westminster, S.W. (Offers of voluntary personal assistance from persons connected with the Dominions and Colonies.)

War Refugees Committee, General Buildings, Aldwych, W.C. (Subscriptions and offers of hospitality.)

RELIEF OF FRENCH FAMILIES IN LONDON.

The following are the four authorised committees working for the relief of French families in London:—

Le Comité d'Assistance aux Familles des Soldats Français, French Consulate General, 51, Bedford-square, W.C.

The French Section of the War Refugees Committee, General Building, Aldwych, W.C.

The French Benevolent Society, 41, Fitzroy-square, W.

The London Section of the French Red Cross Society (Madame Brasier de Thuy), 53, Redcliffe-gardens, S.W.

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN.—The presentation of the Pereira medal by the President will take place on Wednesday next, Sept. 30th, at 3 o'clock, after which Dr. Lauriston E. Shaw, physician to Guy's Hospital, will deliver the inaugural sessional address.

LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN.—The inaugural address for the session will be delivered by Miss Frances Ivens, M.S., on Thursday next, Oct. 1st, at 4 P.M. The subject of the address will be Some of the Essential Attributes of the Ideal Practitioner. Academic dress will be worn.

THE NATIONAL INSURANCE ACT.

TO PREVENT EXCESSIVE PRESCRIBING.

THE Insurance Commissioners have issued to Insurance Committees a memorandum on the supply of drugs and appliances with the object of securing more efficient control over the expenditure upon drugs and appliances as part of medical benefit. The Commissioners are of the opinion that a considerable portion of the charges upon the drug funds could have been avoided without loss of efficiency, and even with positive advantage to insured patients, by properly directed economy in prescribing. In addition to extreme and easily recognisable cases of excessive prescribing, they call attention to those less readily detected which are due to a general habit, either on the part of individual practitioners or of the practitioners in a particular district, of prescribing in excess of what may be regarded as necessary for the health of patients. The excess is exhibited in two ways: by the giving of unnecessary prescriptions or prescribing of unnecessary quantities, and, secondly, by the prescribing of medicines in an unnecessarily costly form. The Commissioners state that the statistics before them prove either that a majority of practitioners prescribe less than their patients ought to have in the way of medicines, or that a minority are prescribing on an extravagant scale, and they prefer the second hypothesis. The sum involved is of considerable magnitude, and the Commissioners desire to represent "very strongly" to Insurance Committees and to the medical organisations coöperating with them the "imperative necessity" for taking the "fullest advantage" of provisions of the Regulations, and of doing this in all cases—that is to say, not only where a deficit in the drug funds has already arisen, but universally. The procedure to be followed is laid down in Article 40 of the present Regulations, and it is pointed out that the duty of investigating is to be performed by the Panel Committee, the actual surcharging being in the hands of the Insurance Committee after considering the Panel Committee's report, and, further, that the Panel Committee may conduct an investigation at any time, but that it is obligatory upon it to do so if the Pharmaceutical Committee presents to it a report suggesting excessive prescribing. On such an occasion the Panel Committee must investigate, and the Insurance Committee is equally obliged to consider the Panel Committee's report and to make appropriate surcharges. Initiation thus rests with the Panel or the Pharmaceutical Committee, but Insurance Committees are requested to give their earnest consideration to the whole question at a very early date, with a view to facilitating the machinery provided. Attention is called to the possibility of having the duties of checking and statistical analysis performed by a single staff under the joint control of the three committees mentioned. This, it is stated, has been tried and has proved an efficient and economical method. The Commissioners observe that some Insurance Committees have proposed to issue circulars containing general prohibitions as to the prescribing of certain articles and preparations, but this they do not advise, and they call attention to cases in which such prohibitions may involve "the exercise of a therapeutic judgment upon matters upon which the Insurance Committee is not in a position to decide."

The issue of such circulars by the Panel Committee, they point out, is not open to the same objection, and accordingly, for the convenience of Panel Committees in framing circulars of the class referred to, the Commissioners conclude their memorandum with an outline of heads under which they believe most of the articles or preparations as to which a caution is desirable may be classified, together with a note as to the form of warning appropriate in each category. The heads referred to are: 1. Foods, toilet preparations, and disinfectants. 2. Prescriptions which could be otherwise prescribed and dispensed at a lower cost and with equal efficiency. 3. Appliances not prescribed in the second schedule to the Regulations.

NATIONAL MEDICAL UNION.

The returns of the elected members of the council have been made by the respective non-panel associations, and the council is now constituted as follows:—Presidents: Professor W. Russell and Mr. G. A. Wright. Vice-Presidents: Mr. W. Coates, C.B., Mr. V. T. Greenyer, Dr. John Playfair, Dr. James Oliver, and Dr. J. Brassey Brierley. Honorary secretary: Mr. E. A. Dorrell. Honorary treasurer: Dr. G. W. B. Marsh. Elected members: Dr. H. A. Eccles, Dr. C. H. Hartt, Dr. F. Porter, Dr. Torrance Thomson, Dr. H. Oppenheimer, Dr. H. Sharman, Dr. R. H. Trotter, Dr. B. G. Morison, Dr. A. Mackenzie Hickley, Dr. C. T. T. Comber, Mr. F. Heatherley, Dr. G. H. Pinder, Dr. C. E. M. Lowe, Dr. J. Skardon Prowse, Dr. J. L. Baskin, Dr. G. D. Wilson, Dr. H. B. Greene, and Dr. G. P. Joy.

The first meeting of the council took place on Sept. 5th, when Mr. Greenyer was elected chairman of council and Dr. Marsh honorary treasurer. The following committees were appointed—namely, executive, organisation, finance, Parliamentary, and press; and standing orders for the council and committees were framed and agreed to.

The honorary secretary was instructed to write to the Secretary of the War Office that the council of the National Medical Union was prepared to submit a list of those of its members willing to place their services in various capacities in their districts at the disposal of the War Office. This offer has been acknowledged and accepted by the Director-General of the Army Medical Service.

DR. A. C. FARQUHARSON has been unanimously adopted as the prospective candidate in the Liberal interest for the North Leeds Parliamentary division.

LONDON HOSPITAL MEDICAL SCHOOL.—We are asked to state that the annual old students' dinner has been cancelled on account of the war.

UNIVERSITY COLLEGE HOSPITAL MEDICAL SCHOOL.—The next term will begin on Thursday, Oct. 1st, but owing to the war the annual dinner of past and present students will not be held this year.

ST. BARTHOLOMEW'S HOSPITAL MEDICAL SCHOOL.—It has been decided to cancel the old students' dinner which was arranged for Oct. 1st, but the Medical School will reopen as usual for the winter session on that day.

ENTERIC FEVER AT ST. BURYAN (CORNWALL).—It is stated that about 50 cases of enteric fever have been notified at St. Buryan, six of which have terminated fatally. There is reason to believe that several visitors to St. Buryan have contracted the disease and are being treated at their own homes.

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

ANDERSON, W., M.B., C.M. Glasg., D.P.H., has been appointed Medical Officer and Medical Officer at the Isolation Hospital by the Billericay Rural District Council, Essex.

DUNDAS, GRACE G., L.R.C.P. & S. Edin., F.R.C.S. Irel., D.P.H., has been appointed Medical Officer of Health of Ramsgate and School Medical Officer during her husband's absence on active service with the Territorials.

PRATT, E. F., M.B., B.S. Durh., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the East Newcastle District of the county of Northumberland.

oss, J. M., M.B., Ch.B. Edin., D.P.H., has been appointed Medical Inspector of School Children to the Wigtownshire Education Committee.

RUXTON, W. L., M.B., C.M. Aberd., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the West Newcastle District of the county of Northumberland.

THORP, EUSTACE, L.R.C.P. & S. Edin., L.F.P.S. Glasg., D.P.H. Belf., has been appointed Assistant School Medical Inspector to the North Riding of Yorkshire Education Committee.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ASHTON-UNDER-LYNE DISTRICT INFIRMARY AND CHILDREN'S HOSPITAL.—Senior House Surgeon. Salary £120 per annum, with board, residence, and laundry.

BANBURY, HORTON INFIRMARY.—House Surgeon. Salary £120 per annum, with board and residence.

BARNSTAPLE, NORTH DEVON INFIRMARY.—House Surgeon. Salary £100 per annum, with board, residence, and washing.

BELGRAVE HOSPITAL FOR CHILDREN, Clapham-road, S.W.—House Surgeon and House Physician for six months. Salary at rate of £75 per annum each, with board, residence, and washing. Also Assistant Physician.

BERMONDSEY PARISH.—Medical Officer. Salary £450 per annum.

BIRKENHEAD BOROUGH HOSPITAL.—Junior House Surgeon. Salary £100 per annum, with board and laundry.

BIRMINGHAM CITY ASYLUM, Rubery-hill.—Junior Assistant Medical Officer. Salary £200 per annum, with apartments, board, laundry, &c.

BIRMINGHAM CITY FEVER HOSPITAL, Little Bromwich.—Assistant Medical Officer. Salary £200 per annum, with board, residence, and laundry.

BIRMINGHAM AND MIDLAND HOSPITAL FOR SKIN AND URINARY DISEASES.—Clinical Assistant for three months, afternoon attendance only. Salary at rate of 52 guineas per annum.

BIRMINGHAM UNION.—DUDLEY-ROAD INFIRMARY: First Assistant Medical Officer, Second Assistant Medical Officer, and Fourth Assistant Medical Officer. Salaries at rate of £225, £180, and £160 per annum respectively. ERDINGTON INFIRMARY AND COTTAGE HOMES: Assistant Medical Officer. Salary at rate of £200 per annum. SELLY OAK INFIRMARY: Assistant Medical Officer. Salary at rate of £180 per annum. Apartments, rations, laundry, and attendance in each case.

BLACKBURN INFECTIOUS DISEASES HOSPITAL.—Temporary Resident Medical Officer. Salary £200 per annum, with board and residence.

BLACKPOOL, VICTORIA HOSPITAL.—House Surgeon. Salary £150 per annum, with residence, board, and laundry.

BOOTLE COUNTY BOROUGH HOSPITAL FOR INFECTIOUS DISEASES.—Resident Medical Officer, unmarried. Salary £150 per annum, with board, washing, and apartments.

BOURNEMOUTH, ROYAL VICTORIA AND WEST HANTS HOSPITAL.—House Surgeon, unmarried, for six months. Salary £100 per annum and extras, with board, lodging and washing.

BRADFORD ROYAL EYE AND EAR HOSPITAL.—House Surgeon. Salary £200 per annum.

BRADFORD ROYAL INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with board, residence, and washing. Also Resident Surgical Officer, unmarried. Salary £150 per annum, with board and residence.

BRISTOL GENERAL HOSPITAL.—First House Physician, Second House Physician, House Surgeon, and Casualty House Surgeon for six months. Salary at rate of £120 per annum, with board, residence, &c.

BURNLEY, VICTORIA HOSPITAL.—Second House Surgeon. Salary £135 per annum, with residence, board, and washing.

BURY ST. EDMUNDS, WEST SUFFOLK GENERAL HOSPITAL.—Resident Medical Officer, unmarried. Salary £120 per annum, with board, lodging, and laundry.

BUXTON, DERBYSHIRE, DEVONSHIRE HOSPITAL.—Assistant House Physician for six months. Salary £100 per annum, with apartments, board, and laundry.

CANTERBURY, KENT COUNTY ASYLUM, Chartham.—Junior Assistant Third Medical Officer, unmarried. Salary £250 per annum, with quarters, board, washing, &c.

CARDIFF AND COUNTY PUBLIC HEALTH LABORATORY.—Bacteriologist. Salary £200 per annum.

CARDIFF CITY MENTAL HOSPITAL, Whitchurch, near Cardiff.—Second Assistant Medical Officer, unmarried. Salary £250 per annum, and all found.

City of London Hospital for Diseases of the Chest, Victoria Park, E.—House Physician for six months. Salary at rate of £75 per annum, with board, residence, and washing.

Derby County Asylum, Mickleover.—Junior Assistant Medical Officer. Salary £200 per annum, with board, lodging, and washing.

Derby County Borough Education Committee.—Temporary School Medical Officer. Salary £300 per annum.

Derby, Derbyshire Hospital for Sick Children.—Female Resident Medical Officer. Salary £100 per annum.

Dundee Royal Infirmary.—Three Resident Medical Officers. Salary at rate of £40 per annum, with board, lodging, and laundry.

Durham County Council.—Assistant Tuberculosis Medical Officer. Salary £350 per annum. Also Female Assistant School Medical Officer. Salary £300 per annum.

Great Yarmouth County Borough.—Assistant Medical Officer of Health. Salary £250 per annum.

Great Yarmouth Hospital.—House Surgeon, unmarried. Salary £140 per annum, with board, lodging, and washing.

Halifax Royal Infirmary.—Second and Third House Surgeons, both unmarried. Salaries £120 and £100 per annum respectively, with residence, board, and washing.

Hampshire County Council.—Three Assistant County Medical Officers of Health. Salary £300 per annum.

Hastings, East Sussex Hospital.—House Surgeon. Salary at rate of £100 per annum, with residence, board, and washing.

Hospital for Sick Children, Great Ormond-street, London, W.C.—Assistant Casualty Medical Officer, unmarried, for six months. Salary £30 per annum, with board, residence, and washing allowance.

Hull Royal Infirmary.—Senior House Surgeon, unmarried. Salary £150 per annum, with board and apartments. Also Assistant House Surgeon. Salary at rate of £100 per annum, with board and lodging. Also Honorary Surgeon.

Hull, Victoria Children's Hospital, Park-street.—Female Resident House Surgeon. Salary £60 per annum, with board and laundry.

Johannesburg, South African Institute for Medical Research.—Superintendent of Routine Division. Salary £700 per annum.

King Edward Memorial Hospital, Ealing, W.—Resident Medical Officer for six months. Salary at rate of £80 per annum, with board, residence, and laundry.

King's Lynn, West Norfolk and Lynn Hospital.—House Surgeon. Salary £150 per annum, with residence, board, and washing.

Leeds General Infirmary.—Assistant Clinical Pathologist. Salary £150 per annum and luncheon.

Leicester Royal Infirmary.—Resident House Surgeons and Assistant House Surgeons.

Leicestershire and Rutland Mental Hospital, Narborough, near Leicester.—Junior Medical Officer. Salary £200 per annum, with board, lodging, and washing.

Liverpool, Brownlow Hill Institution.—Oculist. Salary £50 per annum.

Liverpool Royal Infirmary.—Three House Physicians, one House Surgeon, one Special Departments. Salary at rate of £60 per annum.

Lowestoft and North Suffolk Hospital.—Female House Surgeon, unmarried. Salary at rate of £120 per annum, with board, residence, and laundry.

Luton, Borough of.—Acting Medical Officer of Health, Medical Superintendent of the Council's Infectious Diseases Hospital, Schools Medical Officer, and Police Surgeon. Salary at rate of £500 per annum.

Maidstone, Kent County Asylum.—Second Assistant Medical Officer, unmarried. Salary £280 per annum, with board, quarters, attendance, washing, &c.

Manchester, County Asylum, Prestwich.—Assistant Medical Officer, unmarried. Salary £250 per annum, with board, apartments, attendance, and washing.

Manchester, Hulme Dispensary, Dale-street, Stretford-road.—House Surgeon. Salary £180 per annum, with apartments, attendance, coal, and gas.

Manchester, Monsall Fever Hospital.—Third and Fourth Medical Assistants. Salary £150 per annum each, with board, lodgings, and washing.

Manchester Northern Hospital for Women and Children, Park-place, Cheetham Hill-road.—House Surgeon. Salary £120 per annum, with apartments and board.

Manchester, St. Mary's Hospitals for Women and Children.—House Surgeon for Children's Department. Also House Surgeon for Obstetrical and Gynæcological Departments for three or six months. Salary at rate of £70 per annum, with board and residence.

Merstham, Surrey County Asylum, Netherne.—Assistant Medical Officer, unmarried. Salary £230 per annum, with board, lodging, and laundry.

Merthyr Tydfil County Borough.—Assistant School Medical Officer. Salary £300 per annum.

Metropolitan Asylums Board Infectious Hospitals Service.—Assistant Medical Officers, unmarried. Salary £250 per annum, with board, lodging, and washing.

Metropolitan Hospital, Kingsland-road, N.E.—Assistant House Surgeon. Salary at rate of £40 per annum, with board and washing.

Middlesbrough, North Riding Infirmary.—Senior House Surgeon for six months. Salary at rate of £100 per annum, with board, apartments, and laundry.

National Hospital for the Paralysed and Epileptic, Queen-square, Bloomsbury, W.C.—Senior House Physician. Salary £50 per annum, with board and residence.

Newport (Mon.), Royal Gwent Hospital.—Resident Medical Officer. Salary for first six months at rate of £100 per annum, second six months £125, and third six months £150, with board, residence, and laundry.

Northamptonshire County Council Education Committee.—Temporary Assistant School Medical Officer. Salary £25 per month.

Norwich, City of.—Assistant Medical Officer of Health. Salary £240 per annum, with rooms, board, &c.

Norwich, Norfolk and Norwich Hospital.—House Physician. Salary £100 per annum. Also Casualty House Surgeon for six months. Salary at rate of £100 per annum. Board, lodging, and washing in each case.

Nottingham City Asylum.—Junior Assistant Medical Officer, unmarried. Salary £200 per annum, with board, apartments, and laundry.

Nottingham General Dispensary.—Assistant Resident Surgeon, unmarried. Salary £180 per annum, with apartments (not board), attendance, light, and fuel.

Nottingham General Hospital.—Assistant House Physician and Assistant House Surgeon for six months. Salary at rate of £100 per annum each, with board, residence, and laundry.

Otago University, New Zealand.—Professor of Clinical Pathology. Salary £600 per annum.

Oxford Eye Hospital.—House Surgeon. Salary at rate of £100 per annum, with board, residence, and washing.

Queen's Hospital for Children, Hackney-road, Bethnal Green, E.—House Surgeon for six months. Salary £80 per annum, with board, residence, and washing.

Rotherham Hospital.—Assistant House Surgeon. Salary £110 per annum, with board, lodging, and washing.

Royal Dental Hospital, Leicester-square, W.C.—House Anæsthetist three afternoons a week.

Royal Ear Hospital, Dean-street, Soho, W.—Honorary Assistant Anæsthetist on Tuesday afternoons and Thursday mornings.

Royal London Ophthalmic Hospital, City-road, E.C.—Senior House Surgeon. Salary at rate of £100 per annum, with board and residence.

Royal Waterloo Hospital for Children and Women, S.E.—Junior Resident Medical Officer. Salary at rate of £70 per annum, with board and washing.

St. George's Hospital, S.W.—Surgeon and Assistant Surgeon.

St. Mark's Hospital for Cancer, Fistula, and other Diseases of the Rectum, City-road, E.C.—House Surgeon. Salary £100 per annum, with board, lodging, and washing.

St. Marylebone Infirmary, Rackham-street, Notting Hill, W.—Temporary Second Assistant Medical Officer, unmarried. Salary £200 per annum, with apartments, rations, and washing. Also Third Assistant Medical Officer, unmarried, for six months. Salary at rate of £180 per annum, with apartments, rations, and washing.

St. Mary's Hospital for Women and Children, Plaistow, E.—Assistant Resident Medical Officer. Salary at rate of £100 per annum, with board, residence, and laundry.

Salford Royal Hospital.—Resident Surgical Officer and Casualty House Surgeon for six months. Salary at rate of £120 and £100 per annum respectively, with board and residence.

Salisbury (General) Infirmary.—Assistant House Surgeon, unmarried. Salary £75 per annum, with apartments, board, lodging, and washing.

Samaritan Free Hospital for Women, Marylebone-road, N.W.—Anæsthetist. Salary £15 per annum.

Sheffield Children's Hospital.—House Surgeon. Salary £150 per annum, with board and residence. Also House Surgeon at East End Hospital (Out-patient Department only). Salary £120 per annum, with board and residence.

Shoreditch Infirmary, Hoxton-street, N.—Junior Assistant Medical Officer for six months. Salary £150 per annum, with board, apartments, and washing.

Southampton Free Eye Hospital.—House Surgeon. Salary £100 per annum, with board, lodging, and laundry.

Southampton, Royal South Hants and Southampton Hospital. House Physician. Salary £120 per annum, with rooms, board, and washing.

South Shields, Ingham Infirmary and South Shields and Westoe Dispensary.—Junior House Surgeon. Salary £115 per annum, with residence, board, and washing.

Sunderland Royal Infirmary.—House Physician. Salary £120 per annum, with board, residence, and laundry.

Swansea General and Eye Hospital.—House Surgeon. Salary £125 per annum, with board, washing, and attendance.

Truro, Royal Cornwall Infirmary.—House Surgeon, unmarried. Salary £100 per annum, with rooms, board, and washing.

Walsall and District Hospital.—Senior House Surgeon. Salary £150 per annum, with board, residence, and laundry.

West Bromwich and District Hospital.—Assistant Resident House Surgeon and Anæsthetist, unmarried. Salary £100 per annum, with board, residence, and washing.

West Ham and Eastern General Hospital, Stratford, E.—Senior House Physician. Salary £120 per annum. Also Junior House Physician and Junior House Surgeon. Salary £100 per annum. Board, residence, and washing provided in each case.

West Ham Union Infirmary, Whipps Cross-road, Leytonstone, N.E.—Third Assistant Resident Medical Officer. Also Female Fourth Assistant Medical Officer. Salary £180 and £160 per annum respectively, with usual residential allowances.

Westminster Union Infirmary, Colindale Avenue, Hendon, N.W.—Assistant Medical Officer. Salary £160 per annum, with board, residence, and washing.

Westminster Union Infirmary, Fulham-road, S.W.—Second Assistant Medical Officer. Salary £160 per annum, with board, residence, and washing. Also Third Assistant Medical Officer. Salary £140 per annum, with board, residence, and washing.

Winsley Sanatorium for Consumption, near Bath.—Senior Resident Medical Officer, unmarried. Salary £300 per annum, with board, residence, and laundry. Also Assistant Resident Medical Officer, unmarried. Salary £150 per annum, with board, residence, and laundry.

Wolverhampton and Staffordshire General Hospital.—House Surgeon and Resident Medical Officer for six months. Salary each at rate of £125 per annum, with board, rooms, and laundry. Also Pathologist. Salary £200 per annum.

The Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies for Certifying Surgeons under the Factory and Workshop Acts at Ardagh, in the county of Limerick; and at Patterdale, in the county of Westmorland.

Births, Marriages, and Deaths.

BIRTHS.

BRAY.—On Sept. 12th, at the Vicarage, Fordingbridge, the wife of Lieutenant-Colonel H. A. Bray, R.A.M.C., attached Egyptian Army, of a daughter.

COHEN.—On Sept. 14th, at Kingston, Sidmouth, S. Devon, the wife of Bertram Cohen, M.B., B.S., a daughter.

MARTYN.—On Sept. 18th, at High-street, Eton, Bucks, the wife of Henry L. Martyn, M.B., F.R.C.S., attached to R.A.M.C. 12th General Hospital, Expeditionary Force, of a daughter.

PEARCE.—On Sept. 16th, at Enfield House, Bury Old-road, Manchester, the wife of Dr. P. Leslie Pearce, of a daughter.

ROGERS.—On Sept. 15th, at Castledown-road, W. Kensington, the wife of David de Sola Rogers, L.D.S. R.C.S. Eng., of Buenos Aires, of a daughter.

MARRIAGES.

COOMBS—HUDSON.—On Sept. 16th, at St. Andrew's Church, West Kensington, London, Harold Martin McCulloch Coombs, M B., R.A.M.C. (T.), Eastern Mounted Brigade Field Ambulance, to Ismay, youngest daughter of Sir William Brereton Hudson, K.C.I.E.

EDWARDS—MAUGHAN.—On Sept. 19th, at St. Mary the Virgin, Putney, Roger Bellis Edwards, M.B., B.S., to Marjory, younger daughter of the late Henry G. R. Maughan and Mrs. Maughan, of Putney Hill.

DEATHS.

GRESSWELL.—On Sept. 16th, at Kelsey House, Louth, Lincs, after a short illness, Dr. George Gresswell, M.A. Oxon.

SARGENT.—On Sept. 20th, at Southend, G. E. H. Sargent, L.M.S.S.A., of 300, Commercial-road, London, E., aged 56. Cornish papers, please copy.

STEELE.—On Sept. 20th, at Clifton Villa, Richmond Hill, Clifton, Bristol, Charles Steele, M.D., F.R.C.S., aged 76 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths

BOOKS, ETC., RECEIVED.

ALLEN, GEORGE, AND UNWIN, London.

A Text-book of Insanity and other Mental Diseases. By Charles Arthur Mercier, M.D., F.R.C.P., F.R.C.S. Second edition. Entirely rewritten. Price 7*s*. 6*d*. net.

BLACK, ADAM AND CHARLES, London.

Tuberculosis of the Bones and Joints in Children. By John Fraser, M.D., F.R.C.S. Edin., Ch.M., Assistant Surgeon. Royal Hospital for Sick Children, Edinburgh. 51 plates and 164 figures. Price 15*s*. net.

BUTTERWORTH AND CO. AND SHAW AND SONS, London.

The Public Health Acts Annotated with Appendices (Lumley's Public Health), containing the Various Incorporated Statutes and Orders of the Local Government Board. Eighth edition. In two volumes. By Alexander Macmorran, M.A., and Joshua Scholefield, assisted by Gerard R. Hill, M.A., and Kenneth M. Macmorran, M.A., LL.B.

CASSELL AND CO., London.

Elements of Surgical Diagnosis. By Sir Alfred Pearce Gould, K.C.V.O., M.S. Lond., F.R.C.S. Eng. Fourth edition, revised and enlarged by the Author, with the assistance of Eric Pearce Gould, M.A., M.Ch. Oxon., F.R.C.S. Eng. Price 10*s*. 6*d*. net.

CHURCHILL, J. AND A., London.

A Manual of Minor Surgery and Bandaging (Heath. Pollard), for the Use of House Surgeons, Dressers, and Junior Practitioners. Fifteenth edition. By H. Moriston Davies, M.D., M.C. Cantab., F.R.C.S. Price 7*s*. 6*d*. net.

Transactions of the Ophthalmological Society of the United Kingdom. Vol. XXXIV. Session 1914. With List of Officers, Members, &c. Price 12*s*. 6*d*. net.

A Manual of Dental Anatomy, Human and Comparative. By Charles S. Tomes, LL.D., F.R.S., F.R.C.S. Seventh edition. Edited by H. W. Marett Tims, M.A. Cantab., M.D., M.Ch. Edin., F.L.S., F.Z.S., and A. Hopewell-Smith, L.R.C.P., M.R.C.S., L.D.S. Eng. Price 15*s*. net.

Remedial Exercises in Schools and School Clinics. By R. C. Elmslie, M.S., F.R.C.S. Price 1*s*. net.

FALCONER, JOHN, Upper Sackville-street, Dublin.

Transactions of the Royal Academy of Medicine in Ireland. Vol. XXXII. Edited by J. Alfred Scott, M.A., M.D., F.R.C.S.I.

FROWDE, HENRY, AND HODDER AND STOUGHTON, London.

British Red Cross Society Note-book, with Diagrams for Use during Attendance at Red Cross Courses of First Aid. Price 1*s*. net.

HODGE, WILLIAM, AND CO., Edinburgh and Glasgow.

The Mental Deficiency and Lunacy (Scotland) Act, 1913 (3 and 4 Geo. V., Cap. 38), with Introduction, Notes, and Appendices. By J. Edward Graham, K.C. Price 12*s*. 6*d*. net.

JOHNSTON, W. AND A. K., Edinburgh and London.

Castration (including Cryptorchids and Caponing) and Ovariotomy. By Frederick T. G. Hobday, F.R C.V.S., F.R.S.E. Second edition.

Notes, Short Comments, and Answers to Correspondents.

During the continuance of the war the size of THE LANCET *will be curtailed. This has been necessitated primarily by the difficulty in ensuring an adequate supply of paper, but the contributions of most of our correspondents on the continent have failed, and will fail, to reach us. Many special features of* THE LANCET *have had to be sacrificed for the time, and while we ask the indulgence of our readers for this, we promise to restore them at the earliest possible opportunity.*

"HOSPITAL EXPERTS."

IN the United States, and to some degree, too, in Canada, the opening up of unoccupied lands and the tremendously rapid growth of towns have operated to compel the man on the spot to be a jack-of-all-trades. In the medical profession, for instance, the doctors in most western towns, or cities as they are locally termed, are all essentially general practitioners; a town must grow to some importance before it can look to have its first specialist, probably an ophthalmologist. Gradually certain general practitioners become part-time specialists, and by-and-by the city develops a university, a medical faculty makes its appearance in due course, and doctors who practise exclusively some special branch. Specialists are required during this growing time, but the patient has to go and seek them. The developing town must also have a hospital, and unless it is content to endure humiliation the hospital must be larger and "more up to date" than that of any of its neighbours. With keen enthusiasm a local architect is engaged to plan a building having an imposing appearance, the necessary capacity, and containing everything that doctors need. These plans are then submitted to a "hospital specialist" in New York or Chicago to be "experted." The expert finds, perhaps, that there are insufficient anæsthetising rooms, that the lifts are too small to receive an ambulance of the pattern he recommends as most completely up to date, that the door of the ward diet kitchen is in the wrong place and involves two steps more than is necessary for each nurse serving out meals to the patients, which means for 20 patients with an average of four meals daily 160 extra unnecessary steps—wasted energy, less work done for the money, and greater cost of service. The expert may recommend a better pattern and a more convenient lavatory basin for installation throughout the hospital, a better system of signals, or perhaps some newer scheme to make it less troublesome to patients to pay their bills, such, for instance, as a pneumatic carrier in each room to take down the patient's $100 bill each week and to return the change. (It must be remembered that in America payment for medical or surgical treatment in a hospital is the rule and not the exception.) The amended plans come back, a fee of perhaps 1 or 2 per cent. on the cost of the hospital is paid, and the city has the proud satisfaction of possessing a hospital really worthy of it and one to be talked of with general appreciation. The expert will also on request give instructions as to how money should be raised, with what committees, and by what arguments, also how that money should be spent; how, where, and what furniture and equipment (at 5 per cent. commission) should be bought; and how the accounts should be kept. so there shall be absolutely no waste anywhere. Thus it will be known precisely whether enough is being charged for the operating-room, whether the X ray operator's salary can be raised, whether there is any profit on the Turkish baths, and by how much exactly the 120 steps saved have reduced the cost or helped administration in a year. The hospital expert has very likely been evolved from a hospital superintendent in a small hospital who had to give anæsthetics and look after the few non-paying cases. Then he got appointed to a hospital of 150 to 200 beds, where he engaged in none but administrative duties. Next he got a chance to see other hospitals, and perhaps his own hospital had to be rebuilt. His advice on that, turning out well, he may have set up for himself. Sometimes the expert is a nurse, who, as a very capable matron, has shown great power of management. This is a less satisfactory case, for the expert who is not a qualified medical man has great difficulty in grasping the medical point of view. Perhaps the best organisation is that of a physician and architect working together. Money to support these experts is available because hundreds of hospitals have been going up in the United States in the last few years. They are very good and well arranged, and the experts are justly pleased with them. Indeed, it is confidently thought there that not much is to be learnt in the matter from Europe.

A QUOTATION IN SEARCH OF A FATHER.

To the Editor of THE LANCET.

SIR,—The couplet quoted by your correspondent, Mr. E. A. Eade, recalls youthful days of labour in "Upper School." But though I am unable to tell him either the author of the lines or where they are to be found, he may like to know that the delightful derivation is to be found in that mine of information, interesting if not always accurate, the Etymologiæ of Isidorus Hispalensis. In Book XVII., Chapter 10, Section 18 (according to the latest Oxford edition), Isidore says of fungi that they are so-called from φῶs, because of their use as tinder. He proceeds, "Alii dicunt fungos vocatos quod sint ex eorum genere quidam interemptorii; unde et defuncti."

I am, Sir, yours faithfully,

Sept. 28th, 1914. H. P. CHOLMELEY.

THE JUKES.

THE following advertisement appeared in the *Times* of Sept. 12th, 1914:—

> WANTED, INFORMATION LEADING to BIOGRAPHY and PICTURE of ROBERT L. DUGDALE, English-American sociologist; studied "Jukes" in New York, 1870–77. One pound reward.—Eugenics Record Office, Cold Spring Harbour, New York, U.S.A.

The last reference we published in THE LANCET to the Jukes family was in the issue of Oct. 7th, 1911, p. 1023, an annotation entitled "Justice for the Jukes." "Juke" was the pseudonym given by Mr. Robert L. Dugdale to a family whose environment and lineage he investigated through seven generations, beginning with "Max," who was born between 1720 and 1740, and lived the life of a backwoodsman in New York State. The footnote to our annotation was as follows:—"The Jukes: a Study in Crime, Pauperism, Disease, and Heredity. By Robert L. Dugdale. With an introduction by Franklin H. Giddings. Fourth edition. London and New York: G. P. Putnam's Sons. 1910. Pp. 120. Price 5*s.* net."

THE LIGHTER SIDE OF A HOSPITAL SHIP.

WE have received from the editors a copy of the first issue, dated Sept. 15th, of "Drina Dippings," a lively little periodical printed and published on board H.M. Hospital Ship *Drina*. In a magazine printed solely for the amusement of fellow officers the personal note is naturally uppermost, but the point of most of the good-natured sallies is not difficult to catch. For instance, we read on p. 7: "It has been reported that Temporary Surgeon H—— has submitted himself to the attentions of the hairdresser. The Official Press Bureau will not take any responsibility for the accuracy of this rumour, but permits its publication pending further observations." Again, in the advertisement columns, which are equally diverting, readers are advised not to miss the same officer's "subtrochanteric trousers—a speciality." We hope that "Drina Dippings," in its appropriate blue cover and with its sly motto, "Multa cum trepiditate," will continue to enliven the existence of the brave company on board H.M.H.S. *Drina*.

THE WISDOM OF ANIMALS.

WE are in the habit of attributing human wisdom to quadrupeds, and sometimes quite surprising stories are told of cats, dogs, tigers, wolves, and monkeys. That many of these stories are entirely untrue is well known, and it used to be a form of club humour to ply editors of newspapers with zoological yarns, wagers depending upon the editors' ability to swallow—i.e., print—the episodes. We have all heard of the cat that fished for trout in the water, though cats never get themselves wet if they can avoid it. Dogs, as the friends of man, will do almost anything human according to their chroniclers, and Austrian students are said to be in the habit of intoxicating their dogs with strong drink and then urging them—despite the fact that an inebriated dog usually lies down in stupor—to bite unpopular characters. Ladies in Austria have had their cheeks torn by drunken dogs, and are known to have thus suffered by a large circle of sympathising friends. At least, that is a story which we have been asked to publish in THE LANCET, and we do so with such extreme reservation that no humorist—if we are dealing with such—ought to receive money on the result. It is said of wolves that they hunt down and tear to pieces any member of the pack that has led them on a false scent, but the explanation here is that wolves will eat any isolated wolf in their front, and that the close formation of the pack is a witness to the wolf's fear of being ahead of the rest. Similar common-sense explanations can be found of many surprising feats of inductive genius among animals and birds. Ducks, in the West Fleet, a sheet of water behind the Chesil Bank, have been described as trained to swim out and to tempt widgeon, teal, and other wild fowl into a funnel leading to destruction. The truth is the ducks have not been trained at all, but do not fear the "decoy" which has never harmed them and within which their food lies. All animals, whether quadrupeds or birds, that feed in herds are said to place sentries on the outskirts of their party. It is, however, obvious that wherever there is a collection of feeding or couchant animals there will be members of the group at the corners who, by very position, become sentinels.

KILOMETRES AND MILES.

To the Editor of THE LANCET.

SIR,—The simplest way to convert kilometres into miles is divide by 2, divide the result by 4 and add the two results. Examples: 100 divided by 2 = 50; ¼ of 50 is 12·5: result, 62·5. 500 k. divided by 2 = 250; 250 divided by 4 = 62·5 + 250 = 312·5.

To convert miles into kilometres multiply by 8 and divide result by 5.—I am, Sir, yours faithfully,

ERNEST LEOPOLD WALFORD.

Junior Constitutional Club, Piccadilly, Sept. 19th, 1914.

MISRI AND SUPARI.

Mr. S. M. Mitra, author of "Anglo-Indian Studies," writes to the *Daily Express* to suggest that the following comforts would be greatly valued by the Indian soldiers who are going to fight for the Empire:—

Sugar candy (if possible, the Indian Misri).
Candied coconut.
Areca nut (Supari), cut in thin slices.
Cinnamon and cloves.
Coloured handkerchiefs, extra large size.

Mr. Mitra wonders whether any enterprising firm will make up small parcels or boxes containing the things described, so that they may be easily purchased and despatched to the Indian Expeditionary Force. Misrí in Hindustani means sugar candy, and also means "Egyptian," Misr signifying Egypt. Supárí is "betel-nut," the nut of the Areca catechu, and is a masticatory. Dr. Hale White, in his "Materia Medica," says: "Throughout the whole of India all classes of natives indulge in the habit of chewing betel leaves. White catechu and areca nut or betel nut, mixed with various spices and aromatics, are wrapped up in betel leaves which have been previously smeared with a little chunan or shell lime, and little masses of this mixture are chewed. This habit largely increases the amount of saliva."

SERBIA.

WE observe that last week the *Westminster Gazette* and this week the *Times* and other newspapers have resolved to use in future the word Serbia instead of Servia, and Serb instead of Servian, these spellings being preferred, for obvious reasons, by that country. We believe that in Serbia the Serbs call themselves Srbs and their country Srbja, as is also the case in the Croatian dialect of Serbian. A correspondent points out that while nearly all the newspapers here use the word "Uhlan," the common German spelling now is Ulan, and Ulanen for the plural, and this spelling was preferred at least as far back as 1882. A number of changes in German orthography were introduced by the Prussian Minister of Education in 1880. A good many "h's" were then dropped, and Thee became Tee. But we doubt whether our correspondent is right in attributing this change to the world-wide influence of the Cockney.

FOREIGN WORDS AND PHRASES FOR RED CROSS WORKERS.

IN THE LANCET of Sept. 12th, p. 728, we noticed one little book of this kind. We have now received from Messrs. Hachette and Co., 18, King William-street, Charing Cross, whose Paris branch is at 79, Boulevard St. Germain, a copy of two small books issued by them at the price of 6*d.* each. One is entitled "Elementary French Words and Phrases for Red Cross Workers," and the other "Elementary German Words and Phrases for Red Cross Workers." The compiler of both is Mr. P. Shaw Jeffrey, of the School House, Colchester. We have run through the French one and find it very useful. On p. 10 should be added the English of "C'est aujourd'hui le deux septembre," and on p. 11 "Quelle heure est-il?" On p. 12, "au bord de la mer" would be more definite if it were translated "at the seaside" instead of "at the sea." On p. 18 "du flan" (custard) is a word which is interesting. It is found in the old English "flawn," a sort of flat custard or pie, said to be derived through old French "flaon," from Low Latin "fladonem," but it is hard to trace. It is a change from the various indefinite "crêmes." On the back cover of the book, which consists of 24 pages, is the Lord's Prayer in French. The corresponding German book consists of 24 pages, and is also a very useful little book. The author properly calls special attention to the difference in pronunciation between "Liebe" ("love") and "lieber" ("rather"), and "iebe" ("live") and "Leber" ("liver").

Mr. Henry Sewill (Earlswood).—The report of the Select Committee on Patent Medicines was published in full in THE LANCET of Sept. 5th and Sept. 12th, 1914, and was discussed in a leading article on Sept. 12th.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

SOCIETIES.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY, Society's Rooms, West London Hospital, Hammersmith-road, W.

FRIDAY.—8.30 P.M., Presentation of the Keetley Memorial Medal to the Retiring President. Presidential Address:—Mr. A. Baldwin: The Prevention of Post-operative Discomforts.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies street, W.C.

TUESDAY.—4 P.M., Dr. A. S. Woodwark: Clinique (Medical). 5.15 P.M., Dr. A. Eddowes: The Treatment of Some Common Rebellious Skin Affections.

WEDNESDAY.—4 P.M., Mr. A. H. Todd: Clinique (Surgical). 5.15 P.M., Lecture:—Mr. E. D. Davis: Foreign Bodies in the Ear, Nose, and Throat.

THURSDAY.—4 P.M., Dr. R. Wells: Clinique (Medical). 5.15 P.M., Lecture:—Dr. E. P. Cumberbatch: Electrical Treatment of Paralysis.

FRIDAY.—4 P.M., Mr. F. A. Juler: Clinique (Eye).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. T. Gray: Operations Dr. Pritchard: Bacterial Therapy Department. Mr. B. Harman and Mr. Gibb: Diseases of the Eye.

TUESDAY.—10 A.M., Dr. Simson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Addison: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Simson: Diseases of Women. Mr. Gibb: Diseases of the Eye.

THURSDAY.—9 A.M., Bacterial Therapy Department. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. T. Gray: Operations. Mr. B. Harman: Diseases of the Eye.

FRIDAY.—10 A.M., Dr. Simson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Addison: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Eye Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

THE THROAT HOSPITAL, Golden-square, W.

MONDAY.—5.15 P.M., Special Demonstration of Selected Cases.
THURSDAY.—5.15 P.M., Clinical Lecture.

ROTUNDA HOSPITAL POST-GRADUATE COURSES, Dublin.

MONDAY.—10 A.M., Obstetrical Lecture: Post-partum Hæmorrhage (continued). 11 A.M., Examination of Patients and Minor Operations.

TUESDAY.—10 A.M., Major Operations.

WEDNESDAY.—10 A.M., Obstetrical Lecture: Rupture of Uterus. 11 A.M., Examination of Patients and Minor Operations.

THURSDAY.—10 A.M., Major Operations.

FRIDAY.—10 A.M., Gynæcological Lecture: Injuries of Labour. 11 A.M., Examination of Patients and Minor Operations.

For further particulars of the above Lectures, &c., see Advertisement Pages.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *xclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will ensure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

THE COLONIAL AND FOREIGN EDITION (printed on thin paper) is published in time to catch the weekly Friday mails to all parts of the world.

The rates of subscriptions, post free from THE LANCET Offices, have been reduced, and are now as follows:—

FOR THE UNITED KINGDOM.		TO THE COLONIES AND ABROAD.	
One Year	£1 1 0	One Year	£1 5 0
Six Months	0 12 6	Six Months	0 14 0
Three Months	0 6 6	Three Months	0 7 0

(The rate for the United Kingdom will apply also to Medical Subordinates in India whose rates of pay, including allowances, is less than Rs.50 per month.)

Subscriptions (which may commence at any time) are payable in advance. Cheques and Post Office Orders (crossed "London County and Westminster Bank, Covent Garden Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Offices, 423, Strand, London, W.C.

TO COLONIAL AND FOREIGN SUBSCRIBERS.

SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE.

The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied.

SOLE AGENTS FOR AMERICA—MESSRS. WILLIAM WOOD AND CO., 51, Fifth Avenue, New York, U.S.A.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Sept. 23rd, 1914.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Sept. 17	29 73	S.W.	0·02	95	70	56	57	59	Raining
„ 18	29 80	N.W.	0·02	104	69	54	52	57	Cloudy
„ 19	29 80	N.W.	...	110	60	49	49	54	Fine
„ 20	29·94	N.W.	0·12	84	55	46	48	50	Cloudy
„ 21	30·30	N.	...	104	59	45	46	49	Cloudy
„ 22	30·36	N.	...	104	59	46	45	49	Fine
„ 23	30·41	S.	...	107	62	46	45	49	Hazy

The following magazines, journals, &c., have been received:— British Journal of Dermatology, American Journal of Obstetrics, Medical Review of Reviews, Archives de Médecine et Pharmacie Navales, South African Nursing Record, Excelsior, Collected Studies from the Bureau of Laboratories of the City of New York, Transactions of the American Ophthalmological Society, American Journal of Roentgenology, Cleveland Medical Journal, American Medicine, Albany Medical Annals, St. Paul Medical Journal, Clinical Medicine, American Journal of Surgery, Calcutta Medical Journal, British Dental Journal, &c.

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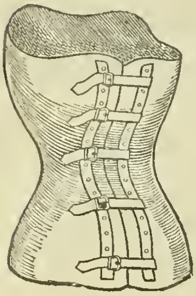

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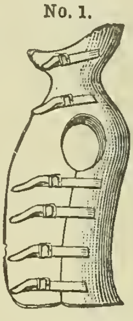

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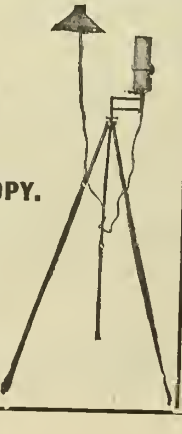

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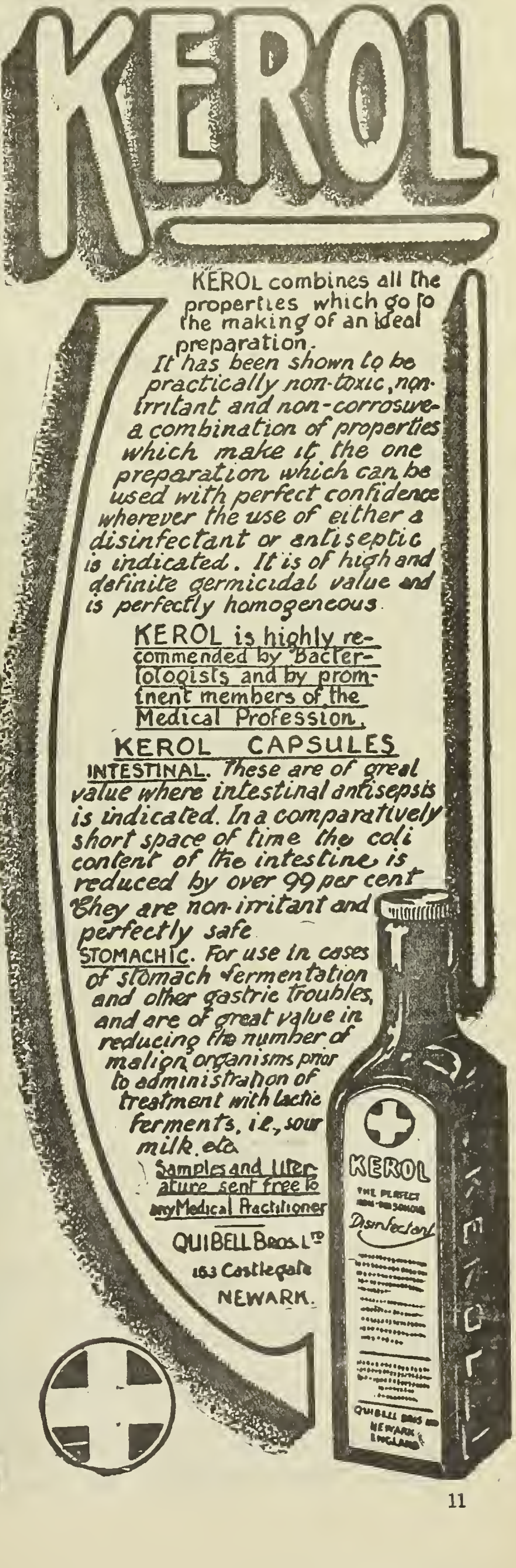
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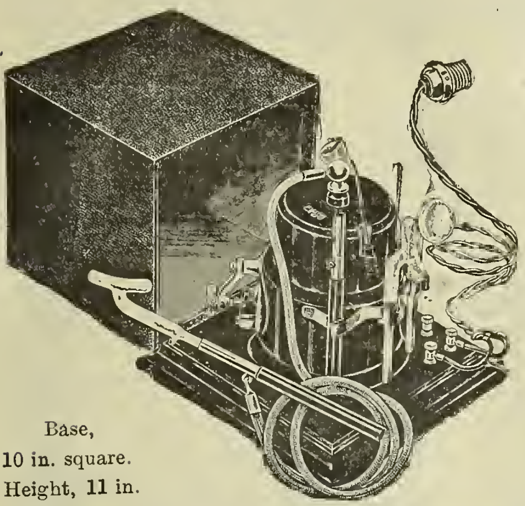

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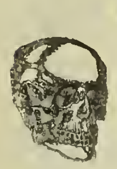

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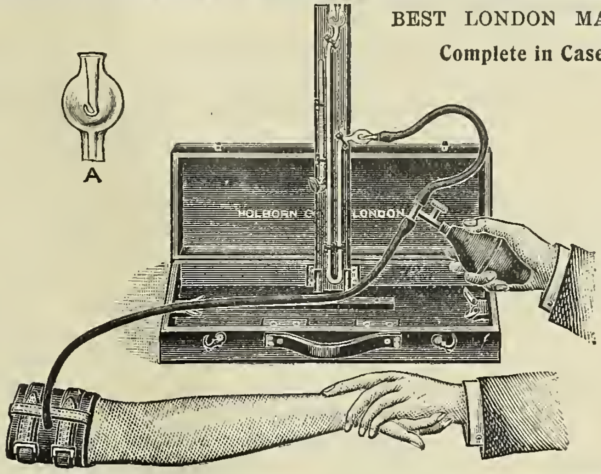

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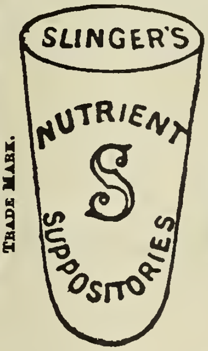

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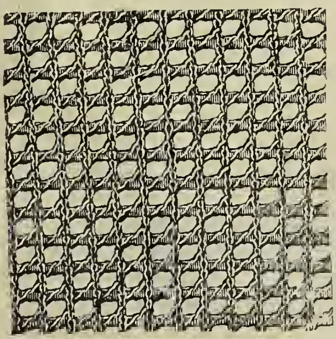

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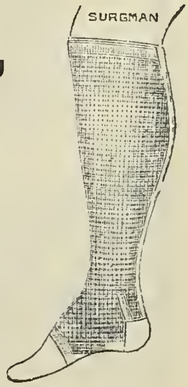

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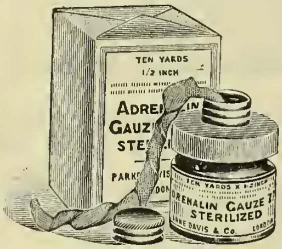

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"Possesses greater disinfecting power than Biniodide or Perchloride of Mercury against staphylococcus pyogenes aureus."—See "Lancet," Jan. 24th, 1903.

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Journal of Obstetrics and Gynecology.
January, 1907.

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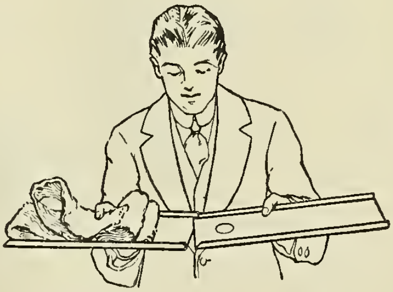

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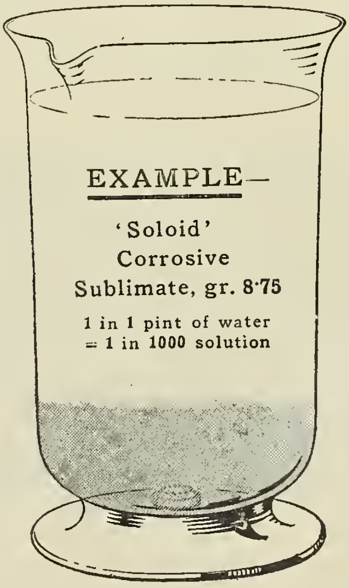

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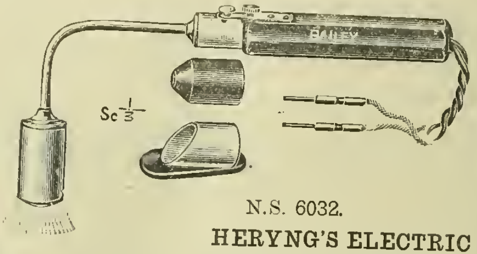

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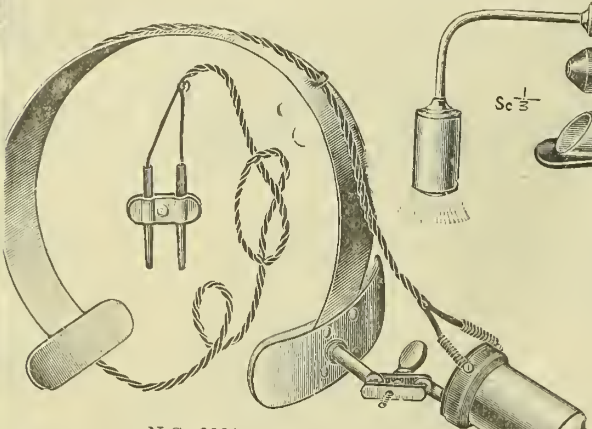

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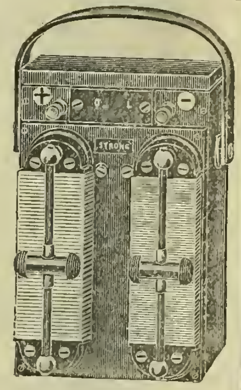

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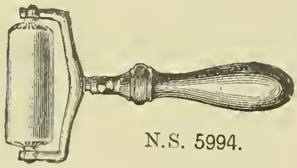

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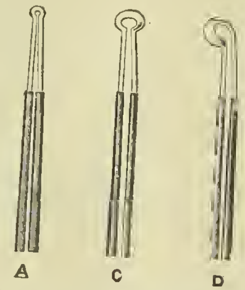

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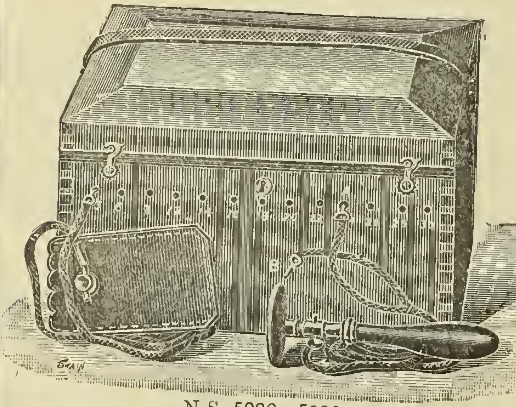

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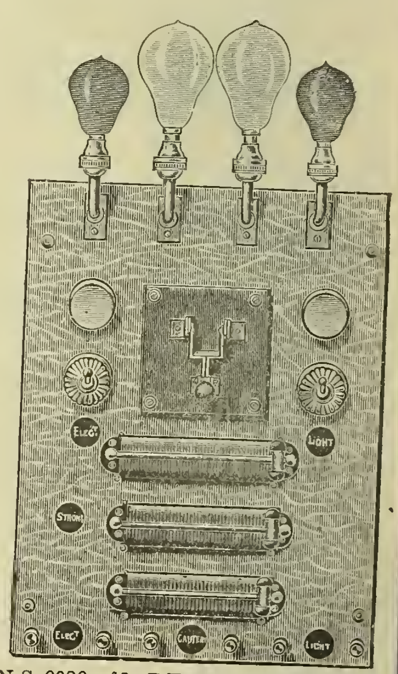

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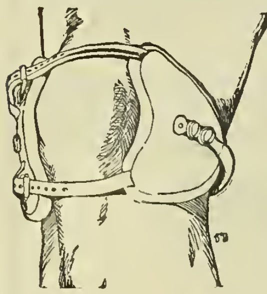

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Special Classes are held for **M.D., F.R.C.S., D.P.H.**

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For further particulars apply, personally or by letter, to the DEAN OF THE MEDICAL SCHOOL, St. Bart.'s Hospital, London, E.C.

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WEST LONDON HOSPITAL, Hammersmith Road, W.

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Prospectus, with full particulars, will be sent on application to DONALD ARMOUR, M.B., F.R.C.S., Dean.

DIPLOMA IN PUBLIC HEALTH.

UNIVERSITY OF LONDON, UNIVERSITY COLLEGE

Professor—HENRY R. KENWOOD, M.B., D.H.P., F.C.S., F.R.S.E., Medical Officer of Health and Public Analyst for the Borough of Stoke Newington ; Medical Officer of Health and Education, Bedfordshire County Council, &c.

Lecturer on Diseases Common to Man and the Lower Animals—A. G. R. FOULERTON, F.R.C.S., D.P.H., F.C.S., Medical Officer of Health, East Sussex County Council.

Assistant and Lecturer—J. SHERWOOD NEW, M.B., B.S., L.R.C.P., D.P.H., Medical Officer of Health for Amersham Urban District.

The Laboratories are open daily from 10 to 5 (Saturdays 10 to 1) for Practical Instruction and Research. The next Course begins in OCTOBER. Students who desire to do so may begin Laboratory Work, with supervision, in September.

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WALTER W. SETON, M.A., Secretary, University College, London (Gower-street, W.C.).

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In connexion with the Hospitals of the Seamen's Hospital Society.

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The WINTER SESSION will open OCTOBER 1st.

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UNIVERSITY COLLEGE HOSPITAL MEDICAL SCHOOL.

(UNIVERSITY OF LONDON.)

WINTER SESSION, 1914–1915, begins on THURSDAY, October 1st, 1914.

A Medical Student may enter the School as soon as he has passed the University of London Matriculation Examination or one of the other Preliminary Examinations that qualify a Medical Student for entering a Medical School. In this case he will pursue his Preliminary and Intermediate Studies at University College, and when those are completed he will carry on his Final Medical Studies at University College Hospital Medical School. The Student who, in addition to having passed a Matriculation or other Examination, has completed his Preliminary and Intermediate Medical Studies at University College or elsewhere, may enter University College Hospital Medical School for his Final Medical Studies only.

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The Winter Session 1914-15 Commences on Thursday, October 1st.

Royal College of Physicians of LONDON.

The next PROFESSIONAL EXAMINATION for the MEMBERSHIP will commence on Tuesday, October 20th.

Candidates are required to give fourteen days' notice in writing to the Registrar of the College, with whom all certificates and testimonials required by the By-laws are to be left at the same time.

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BEIT MEMORIAL FELLOWSHIPS FOR MEDICAL RESEARCH.

Notice is hereby given that the Sixth Election of FELLOWS will take place on or before 1st January, 1915.

Applications must be received on or before the 15th October, 1914.

Forms of application and all information may be obtained by letter only addressed to the Honorary Secretary, Beit Memorial Fellowships for Medical Research, 35, Clarges-street, Piccadilly, London, W.

WEST END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM,

73, Welbeck-street, London, W.

CLINICAL DEMONSTRATIONS for Practitioners and Senior Students are given by the Physicians on the undermentioned days:—

Mondays	at 3 P.M.	Dr. HARRY CAMPBELL.
Tuesdays	,, 3 P.M.	Dr. F. L. GOLLA.
,,	,, 5.30 P.M.	Dr. RIDLEY PRENTICE.
Wednesdays	,, 1.30 P.M.	Dr. F. S. PALMER.
Thursdays	,, 1.30 P.M.	Dr. E. D. MACNAMARA.
Fridays	,, 1.30 P.M.	Dr. PURVES STEWART.
,,	,, 2 P.M.	Dr. DUNDAS GRANT. (Ear and Throat cases.)
,,	,, 5.30 P.M.	Dr. HILDRED CARLILL.

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Hon. Secretary: Professor E. W. Hope, M.D., D.Sc.

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(Galton Professor).
Assistant Director—David Heron, D.Sc.

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Provision is made for assisting students in Research Work, especially in dealing with Statistical Problems in Medicine, Sociology, and Anthropometry.

Training is provided for those interested in Eugenic and Biometric Problems, and in pedigree work in Heredity.

A Course Introductory to the Science of Eugenics (Biological and Statistical Foundations) will be given during the Session by Professor Pearson and by Dr. O. Donoghue, beginning on October 16th.

A Special Course for Teachers and others on the Elements of Statistics will be given by Dr. Heron, beginning October 16th.

Professor Pearson will meet intending students on Tuesday, October 6th, between 10 and 1 p.m. and 4 and 6 p.m.

For further particulars apply to

The Secretary,
University College, London (Gower Street).

CENTRAL LONDON OPHTHALMIC HOSPITAL,

JUDD STREET, ST. PANCRAS, W.C.

WINTER SESSION.

Classes of Instruction on the following subjects will be held during the Winter Session (commencing about the middle of October), and are open to both Men and Women Students. Those wishing to attend are requested to send in their names to the Dean:—

(1) THE USE OF THE OPHTHALMOSCOPE. Fee £2 2s. Mr. Cunningham and Mr. Levy.
(2) ERRORS OF REFRACTION AND MUSCULAR ANOMALIES. Fee £1 1s. Mr. Gibb.
(3) MEDICAL OPHTHALMOLOGY. Fee £1 1s. Dr. Hawthorne.
(4) EXTERNAL DISEASES of the EYE. Fee £1 1s. Mr. Juler.
(5) ANATOMY OF THE EYE. Fee £1 1s. Mr. Juler.
(6) OPERATIVE SURGERY. Fee £2 2s. Mr. Cunningham.
(7) PATHOLOGY OF THE EYE. Fee £2 2s. Mr. Mayou.
(8) BACTERIOLOGY OF THE EYE. Fee £2 2s. Mr. Mayou.
(9) X RAY INSTRUCTION. Fee £1 1s. Dr. Salmond.
(10) CLINICAL LECTURES.

The post of Clinical Assistant at the Hospital is open to Men and Women Students. In 1913: New Patients, 11,847; Out-Patients' attendances, 28,313.

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The practice of the Hospital is limited to Medical Practitioners. Practical classes in Clinical Subjects, including Bacteriology, are arranged. A Special Holiday Course will be held during the first half of August. Prospectus and particulars may be obtained from A. J. Whiting, M.D., Dean.

DIPLOMA IN PUBLIC HEALTH.

UNIVERSITY OF CAMBRIDGE.

LECTURES and PRACTICAL INSTRUCTION in the subjects of the Examination will begin 12th October, 1914, and 15th January, 1915, at the
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Special Lectures by Professor Woodhead on Methods of Purification of Water.
Bacteriology and Preventive Medicine—Dr. Graham-Smith.
Special Lectures by Professor Nuttall, F.R.S., on Protozoal Diseases, and by Dr. Shipley, F.R.S., on Animal Parasites.
Practical Sanitary Administration, Hospital Administration, School Hygiene, Sanitary Law, &c.—Dr. Laird, M.O.H. for Cambridge, and Dr. Robinson, M.O.H. for the Cambridgeshire County Council.

Further particulars may be obtained from Mr. J. E. Purvis Corpus Christi College, Cambridge.

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Courses are given in the following subjects:—Anatomy, Prof. A. M. Buchanan, M.A., M.D.; Physics, Prof. Peter Bennett; Chemistry, Prof. J. Robertson Watson, M.A.; Botany, Prof. B. G. Cormack, M.A., B.Sc.; Zoology, Prof. W. Ferguson Mackenzie, M.B., Ch.B.; Physiology, Prof. H. Morton, M.D.; Materia Medica and Therapeutics, Prof. John P. Duncan, B.Sc., M.B.; Midwifery, Prof. Wm. D. Macfarlane, M.B., C.M.; Surgery, Prof. Archibald Young, B.Sc., M.B., C.M.; Practice of Medicine, Prof. John Cowan, D.Sc., M.D.; Ophthalmic Surgery, Dr. A. Freeland Fergus, M.D., F.R.S.E.; Public Health, Dr. Carstairs Douglas M.D., D.Sc., F.R.S.E.; Aural Surgery, Dr. Jas. Galbraith Connal; Diseases of the Throat and Nose, Dr. John Macintyre, F.R.S.E.; Mental Diseases, Dr. Ivy Mackenzie; Dermatology, Dr. J. G. Tomkinson, M.D.; Dental Anatomy, Prof. W. F. Mackenzie, M.B., L.D.S.; Dental Surgery, Dr. J. Watt, L.R.C.S.E., L.D.S.; Dental Bacteriology, Prof. C. C. Douglas, D.Sc., M.D.; Dental Metallurgy, Chas. Read, L.D.S.; Hospital Practice and Clinical Lectures in Western Royal Infirmary.

The above Courses qualify for all the Licensing Boards in the United Kingdom, and for the Universities of London, Durham, Edinburgh, and Glasgow (under certain conditions). The Course in Public Health qualifies for the Diploma granted by the Scottish Colleges, the Royal College of Surgeons, Ireland, and Universities of Cambridge, London, &c. Fees: Lectures—First Session, £2 2s.; Second Session (in Anderson's College), £1 1s. Practical Classes—£2 2s. For Fees in Anatomy and for exceptions see Calendar.

A **Calendar** will be sent on receipt of a post-card by the **Secretary to the Medical Faculty, the Anderson College of Medicine, Glasgow, W.**

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The Mental Nurses' Co-operation,

49, Norfolk-square, Hyde Park, W. Established 1907.

Telephone: 6533 PADD. Telegraphic Address: "NURSENTAL, LONDON."

Fully trained and experienced NURSES for Mental, Nerve, and Massage cases supplied immediately.

All Nurses insured under the Employers Liability Act of 1906.

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The Society only sends out Private Nurses who have passed through THREE YEARS' HOSPITAL TRAINING, and have been admitted on the staff after the most careful investigation of their character and efficiency.

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ESTABLISHED 1862 at Henrietta Street, Covent Garden.

Thoroughly experienced Hospital-Trained NURSES supplied at a moment's notice, being residents in the Home.

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The David Lewis Colony, erected solely for the benefit of epileptics outside the scope of the Mental Deficiency and Lunacy Acts, stands in its own grounds of 113 acres, is situated at Warford in a beautiful part of Cheshire, two and a half miles from Alderley Edge Station, and fourteen miles from Manchester. Electric light throughout. Perfect sanitation.

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MENTAL PRIVATE PATIENTS of both sexes are received in connexion with the Worcestershire Asylum.

Extensive private grounds in the beautiful Lickey district.

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HOSPITAL FOR MENTAL DISORDERS.

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Telephone—5608 CENTRAL. (ESTABLISHED 1751.) *Telegraphic Address*—"ENVOY, FINSQUARE LONDON."

Admission gratuitous; or, by contribution to maintenance, from 21s. per week.

TRAINED NURSES can be immediately obtained for Mental and Nervous Cases on application to the Matron.

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NETHER COURT, Ramsgate, standing in its own secluded grounds of 12 acres, within a few minutes of the sea. *Teleph.*—44 RAMSGATE.

"WELDERS," near Gerrard's Cross, Bucks, within 18 miles of London, situate in a park of 100 acres, on high ground, with beautiful garden and beech woods. *Teleph.*—47 GERRARD'S CROSS.

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(including Separate Bedrooms for all Suitable Cases).

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There is a Vacancy for a Lady.

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Terms moderate. Apply to Resident Medical Superintendent.

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MENTAL DISEASES, Barnwood, near Gloucester. Exclusively for private Patients of the Upper and Middle Classes. This institution is devoted to the Care and Treatment of Persons of both sexes at moderate rates of payment. The terms vary according to the requirements of the patients, who can have private rooms and special attendants, or be accommodated in Detached Villas and in the Branch Convalescent Establishment on the hills. Under special circumstances the rates of payment may be greatly reduced by the Committee. For further information apply to J. G. SOUTAR, M.B., the Med. Supt.

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A Private HOME for the treatment of Gentlemen suffering from Mental Diseases. Bracing hill country. See "Medical Directory," p. 2119. Apply to Medical Superintendent. Telephone: 10, P.O. Church-Stretton.

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Telephone ***For Upper & Middle Classes.*** 80 Norwich

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A HOSPITAL FOR MENTAL DISEASES.

CHEADLE, CHESHIRE.

AND ITS SEASIDE BRANCH,

GLAN-Y-DON, COLWYN BAY,

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The object of the above is to provide the most efficient means for the cure of mental diseases in those who belong to the upper and middle classes.

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This old-established Licensed House offers every advantage that experience can suggest for the care and treatment of Mental Cases.

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Telephone—No. 2, Plympton. Dr. ALFRED TURNER, Dr. J. C. NIXON.

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HOSPITAL FOR MENTAL DISEASES.

President: The Right Hon. the Earl MANVERS.

This Institution is exclusively for the reception of a limited number of PRIVATE PATIENTS of both sexes, of the UPPER and MIDDLE CLASSES, at moderate rates of payment. It is beautifully situated in its own grounds, on an eminence a short distance from Nottingham, and commands an extensive view of the surrounding country; and from its singularly healthy position and comfortable arrangements affords every facility for the relief and cure of those mentally afflicted

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FOR THE UPPER AND MIDDLE CLASSES ONLY

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Patients paying higher rates can have Special Attendants, Horses and Carriages, and Private Rooms in Villas in the Hospital grounds, or at Moulton Park, a Branch Establishment two miles from the Hospital.

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NAT. TELEPHONE No. 56.

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The Seaside House of St. Andrew's Hospital.

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Telephone: "290, Norwich."

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A High-class Home for the Curative Treatment of Nervous Affections. Situated a mile from the City of Norwich. Special and Separate accommodation is provided for those suffering from Hysteria and for cases of Incipient Mental trouble, who can be received as Voluntary Boarders without certificates and occupy their own private suites of apartments. A staff of experienced nurses has been organised to take charge of patients in their own homes. For terms, &c., which are moderate and inclusive, apply to the Misses McLINTOCK, or to CECIL A. P. OSBURNE, F.R.C.S.E., &c., Medical Superintendent.

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Stations: L. & N. West. and Mid. Railways.

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ESTABLISHED 1857. *NEW INSTITUTION COMPLETED* 1901.

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Situated 1200 feet above sea level. Facing south, sheltered from north and east. 14 acres grounds, tennis, croquet, golf, curling. Billiard rooms, theatre, workshop in house. Motor-car drives. Garage. Ten minutes from Pavilion Gardens, Baths, and L.&N.W. and Mid. stations. Seaside Branch in N. Wales.

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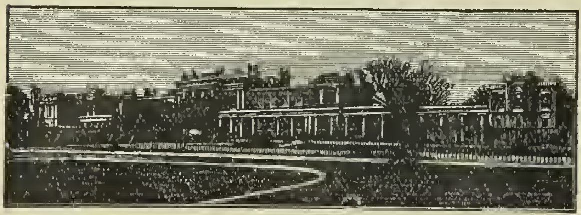
For terms, &c., apply to STANLEY A. GILL, M.D., M.R.C.P. Lond. Telephone—No. 8 FORMBY.



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For further particulars and forms of admission apply Resident Proprietor, Haydock Lodge, Newton-le-Willows.
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Private Hospitals for
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Telegrams: "PSYCHOLIA, LONDON." Telephone: New Cross 1057.

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100 Beds. Boys, ages 4 to 12. Girls, ages 4 to 14.

A Charge of 8s. per week for each child.

Two wards are reserved for serious cases requiring special treatment. In these wards the age limit may be extended to 14 years for Boys and 16 years for Girls.

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Licensed under the Inebriates Acts.

The House is devoted to the Care of LADIES of the upper classes only, who can be treated either under the Acts or as Voluntary Patients The place stands high and the estate is extensive, with bracing air and in good shelter. It is very retired and beautiful, well situated for the treatment of inebriety, narcomania and other perversions, neurasthenia, hysteria, and minor mental ailments.

No patients under certificate of insanity can be received.

References: Sir THOMAS CLOUSTON, Dr. YELLOWLEES, Dr. RISIEN RUSSELL, and others.

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INEBRIETY.

DALRYMPLE HOUSE, RICKMANSWORTH, HERTS.

Ten minutes' walk from stations on Great Central (half hour from London), Metropolitan, and L. & N. W. Railways.

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Alcohol and Drug Inebriety and Neurasthenia.

INVERNITH SANATORIUM, COLINSBURGH, FIFE, SCOTLAND.

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(Under the direction of an Advisory Council of eminent Medical Men.)

NEURASTHENIA is treated on approved principles, and there are Open-air Shelters in the grounds for suitable cases.

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References to leading physicians in the chief centres given on application.

For all particulars of Invernith Sanatorium, Ltd., apply to the *Resident Medical Superintendent,* W. H. BRYCE, M.B., C.M.

Telegrams: "Salubrious," Upper Largo. Telephone No 8, Upper Largo. Station—Kilconquhar (N. B. Railway).

THE ALCOHOL AND DRUG HABITS, INSOMNIA, &c.

GHYLLWOODS,

near COCKERMOUTH, CUMBERLAND. Licensed under the Inebriates Acts. FOR GENTLEMEN ONLY. Privately and under the Acts.

Patients are here treated individually on sound scientific methods, which combine physical and psychical treatment necessary to such cases. The situation of the house in the heart of the English Lake District *is ideal for the purpose to which it is being put.* Private golf course and lake with good trout and coarse fishing, lawn tennis, billiards, workshops, dark room, &c. Good library. References to leading consultants and practitioners. Terms moderate.—Particulars from J. W. ASTLEY COOPER, L.R.C.P., &c., Licensee and Superintendent. Telegrams: "Cooper, Buttermere."

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Licensed under the Inebriates Acts, 1879-99.

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The physician himself was a patient at Nordrach.

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Physician: GEORGE MAGILL DOBSON, B.A., M.B., B.Ch.

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TREATMENT BY TUBERCULIN-VACCINES AND I.K.

WITHIN EASY REACH OF THE MOOR.

Resident Physicians—C. H. BERRY, M.R.C.S., L.R.C.P.; D. L. MCCULLOUGH, M.B.

For particulars, apply C. H. BERRY, M.R.C.S., Sanatorium, Chagford, Devonshire.

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NORDRACH-ON-DEE

(Near BALMORAL, SCOTLAND).

Open-Air Treatment of CONSUMPTION and Allied Diseases.

TUBERCULIN and VACCINE TREATMENT associated with Laboratory Control is available for all patients residing in this Sanatorium.

Research Laboratory. Fully Equipped Throat Room. Roentgen Ray and Ultra Violet Light Installations.

Address: Dr. LAWSON or Dr. LUCAS, Banchory, N.B.

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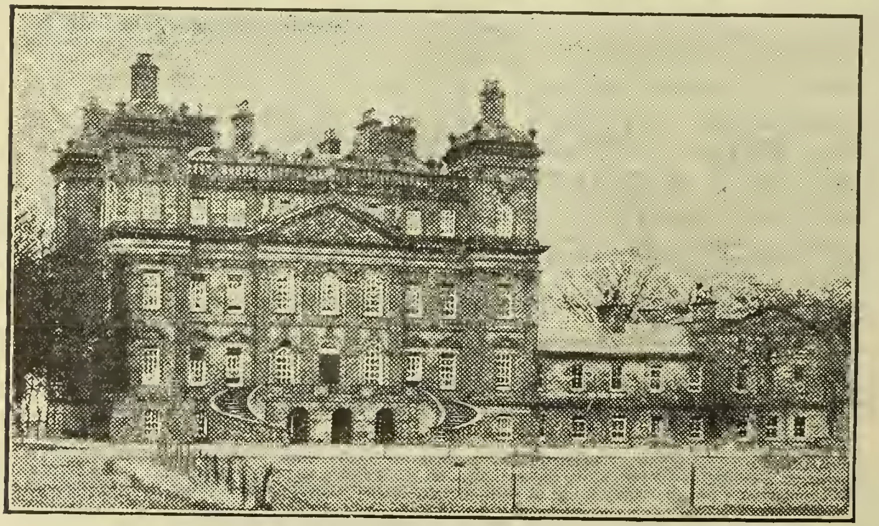

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The House is fitted with Laboratories, X-ray Installation, Medical Baths, and Lifts. The climate is mild, and the rainfall the lowest in Scotland.

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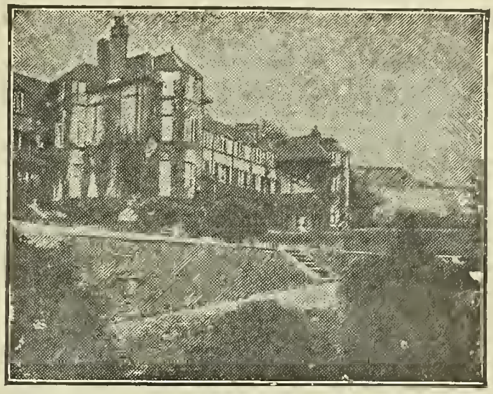

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A PRIVATE HOME for the Treatment of Ladies and Gentlemen suffering from Mental and Nervous Affections. Highly situated, facing Finsbury Park.

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MENTAL NURSING HOME.

Proprietor and Resident Physician—
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KINGSDOWN HOUSE,

BOX, near BATH.

Telephone—No. 2, Box.

Licensed for the Treatment of Diseases of the Brain and Nervous System.

For terms apply to Dr. MACBRYAN at the above, or No. 17, Belmont, Bath.

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CLARENCE ROAD, CLAPHAM PARK.

Stations: Clapham Road and Clapham Common.

A Licensed Home for Mental and Nervous Patients.

Twelve Ladies only received for treatment under eminent Specialist, and given individual care and the comforts of their own homes. Suitable cases received as voluntary boarders. The house is surrounded by well-wooded grounds; shady lawns for tennis, croquet, &c.

Associated Rooms, Private Rooms, or Suites. Very moderate terms. Illustrated Prospectus from Resident Licensee, Mrs. THWAITES.

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BOOTHAM PARK, YORK.

A REGISTERED MENTAL HOSPITAL FOR THE TREATMENT AND CARE OF NERVOUS AND MENTAL INVALIDS OF THE UPPER AND MIDDLE CLASSES.

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GEORGE RUTHERFORD JEFFREY,
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PRIVATE HOUSE FOR THE CARE AND TREATMENT OF LADIES AND GENTLEMEN SUFFERING FROM MENTAL DISEASES.

This House, which is situated in a healthy and pleasant country, has been recently erected from plans approved by the Commissioners in Lunacy, and has been comfortably furnished throughout. Private rooms and special attendants are provided if required.

Terms to be had on application to L. HARRIS LISTON, M.D., Medical Superintendent.

PORTSMOUTH CORPORATION MENTAL HOSPITAL.

Provision for PRIVATE PATIENTS has just been provided in two detached Villas.

Inclusive charges from £1 11s. 6d. per week.

Apply to the Medical Superintendent.

INEBRIETY.

MELBOURNE HOUSE, LEICESTER.

PRIVATE HOME FOR LADIES.

Medical Attendant: ROBERT SEVESTRE, M.A, M.D.Cantab.
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Thirty years' Experience. Excellent Medical References.
For Terms and Particulars apply Miss RILEY or PRINCIPAL.
Telegrams: "MEDICAL, LEICESTER." Nat. Telephone: 769.

ABBOTSWOOD HOUSE,

CINDERFORD, GLOS.

The TEMPLE MEMORIAL HOME of the CHURCH OF ENGLAND TEMPERANCE SOCIETY, for the Treatment of INEBRIETY.

Males only. Terms from £2 2s. weekly. A few patients taken in the kitchen division at 7/6 weekly.

For admission forms and full particulars, apply, Chaplain-Superintendent, Rev. S. SCOBELL LESSEY, M.D., Abbotswood House, Cinderford, Glos., or Secretary, C.E.T.S. Headquarters, 50, Marsham-street, Westminster. London, S.W. Telephone: 33x CINDERFORD.

BRUNTON HOUSE, LANCASTER.

A PRIVATE HOME FOR BACKWARD BOYS.

There are now a few Vacancies in this commodious and well-appointed private establishment. It is easily accessible from Lancaster, overlooks Morecambe Bay, the Lake Mountains, and possesses extensive gardens and grounds, which include tennis and croquet lawns. Individual attention is given to the pupils by experienced staff, under a resident physician and lady matron.

Terms, &c., on application to Dr. ARCHIBALD R. DOUGLAS.

City of London Mental Hospital,

Stone, near Dartford, Kent.

(Under the management of a Committee of the Corporation of the City of London.)

PRIVATE PATIENTS are received. Terms from One Guinea per week. For particulars apply to the Medical Superintendent as above.

IN CHARMING COUNTRY, NEAR LONDON.

Littleton Hall, Brentwood, Essex

(400 feet above sea-level). A HOME for a few LADIES Mentally Afflicted. Large grounds. Villas. London 18 miles. Liverpool-street half an hour. Stations: Brentwood one mile: Shenfield one mile.—Apply Dr. Haynes. Telephone and Telegraph: Haynes, Brentwood 45.

Wanted, a good Home with every attention for backward epileptic boy of fourteen. Not an imbecile.—Write, giving fullest particulars, fees, &c., which must be moderate, to H. C., Scripps's Advertising Offices, 13, South Molton-street, W.

Haslemere, Surrey.—The Haslemere Nursing Home. Altitude 700ft. Medical, Weir-Mitchell, Rest-cure, General Nursing. Especially suited to Neurasthenia, or to recruit after illness or operation. Gravel soil.—Apply, Misses Rattray & Moore, "Courtsfold," Haslemere, Surrey. Telephone: 22 Haslemere.

St. Andrew's Hospital, Dollis-hill, London, N.W.—Tel.: Willesden, 898. A Hospital for Paying Patients of limited means. Medical and Surgical, but not Mental or Contagious cases. Moderate inclusive terms. Resident and Visiting Medical Staff; Trained and Certificated Nurses. Apply. The Matron.

In an old and well established country HOME one and a quarter hours from London a few nervous and light mental cases are taken. Patients receive every care and attention. Home comforts. Motoring, driving, golf, tennis, gardening, boating &c. Resident medical officer. Terms moderate. Highest references.—Address, No. 898, THE LANCET Office, 423, Strand, W.C.

Resident Patients.—List of Doctors in all parts receiving Resident Patients, with description of accommodation, terms, &c., can be had without charge from The General Manager, 22, Craven-street, Strand, W.C., or selection will be made on statement of nature of case and means.—Telephone, No. 1854 Gerrard.

South Africa.—Those searching for Health received as PAYING GUESTS. Good home on quiet farm, particularly lovely locality in Tarkastad District. Acknowledged to be one of the healthiest districts in South Africa. Bracing mountain air; golf links.—Apply, Mrs. Poultney, Bonhills, Tarkastad, S. Africa.

Royal Cornwall Infirmary, Truro (52 beds).—HOUSE SURGEON (Male, unmarried), required Salary £100, rooms, board, and washing.

Apply, with copies of three recent testimonials, to Secretary, of whom further particulars may be obtained.

Rotherham Hospital.—Wanted, an ASSISTANT HOUSE SURGEON (Male). Salary £110 per annum, with board, lodging, and washing. Applications, with copies of recent testimonials, to be sent to the Secretary, G. W. ROBERTS, 8, Moorgate-street, Rotherham.

Royal Waterloo Hospital for Children and WOMEN, S.E.—There is an immediate vacancy for a JUNIOR RESIDENT MEDICAL OFFICER at this Hospital. Salary at the rate of £70 per annum, with board and washing. Applications, with three recent testimonials, to be sent to the Secretary at the Hospital.

Hulme Dispensary, Dale-street, Stretford-road, Manchester.—Wanted, a HOUSE SURGEON, duly registered and fully qualified. Salary £180 per annum. Annual increase £10 to £200, with apartments, attendance, coal, and gas.

Applications, with testimonials, at once to Honorary Medical Secretary.

National Hospital for the Paralysed and EPILEPTIC (Albany Memorial), Queen-square, Bloomsbury, W.C.—SENIOR HOUSE PHYSICIAN.—Applications are invited for the post of Senior House Physician, which will shortly be vacant. The salary is £50 per annum, with board and residence.

Applications, with copies of recent testimonials, should be sent to the undersigned on or before September 30th, 1914.

GODFREY H. HAMILTON, Secretary.

Nottingham General Dispensary.— Wanted at once, ASSISTANT RESIDENT SURGEON (Male), unmarried. Must have Medical and Surgical qualifications. Salary £180, with apartments (not board), attendance, light, and fuel. This institution is a non-provident one. (No beds.)

Applications, stating age and accompanied by recent testimonials, to be sent to C. CHEESMAN, Secretary.
12, Low Pavement, Nottingham.

Horton Infirmary, Banbury.— Wanted at once, a HOUSE SURGEON, duly qualified and registered. No out-patient, visiting, or Provident Dispensary. 40 beds. Salary £120 per annum, with board and residence in the Infirmary. Applications, with copies of recent testimonials and particulars as to age and place of birth, must be accompanied by a photograph of the applicant, and addressed to me, E. LAMLEY FISHER, Hon. Sec., Horton Infirmary, Banbury.

Manchester Northern Hospital for WOMEN and CHILDREN, Park-place, Cheetham Hill-road. —The Committee of Management require the services of a duly qualified HOUSE SURGEON, to commence duties soon. Salary, with apartments and board, £120 per annum. The administration necessitates the appointment of a Male House Surgeon.

Applications, with testimonials, stating age and experience, to be sent to Mr. HUBERT TEAGUE, Secretary, 38, Barton-arcade, Manchester.

Birmingham and Midland Hospital for SKIN and URINARY DISEASES, Birmingham.—There will shortly be a vacancy in the post of CLINICAL ASSISTANT. Honorarium at rate of 52 guineas per annum. Afternoon attendance only. Tenable for three months, and eligible for re-election for a further three months. Candidates, who must be duly qualified, are invited to send at once their applications, testimonials, &c., to the Hon. Secretary of the Medical Committee, from whom all further information may be obtained.
HUBERT SUMNER, Secretary.

West Ham and Eastern General HOSPITAL, Stratford, E. (110 beds).—Wanted at once,
SENIOR HOUSE PHYSICIAN. Salary £120.
JUNIOR HOUSE SURGEON. Salary £100.
JUNIOR HOUSE PHYSICIAN. Salary £100.
With board, residence, and washing.

Applications, with copies of testimonials, should be sent to the Secretary, from whom particulars can be obtained.
A. W. SCRIVENER, Secretary.

Walsall and District Hospital.—The Committee invite applications for the position of SENIOR HOUSE SURGEON. Salary £150 per annum, with board, residence, and laundry. Candidates, who must possess registered qualifications, should forward applications, stating age, qualifications, and experience, together with copies of three recent testimonials, at once to the undersigned. The Hospital has special departments for the treatment of Diseases of the Ear, Nose, Throat and Eye, and for the practice of Radiology. Ladies not eligible.
12th September, 1914. FRANK INCH, Secretary.

North Riding Infirmary, Middlesbrough.—SENIOR HOUSE SURGEON (Male) wanted to commence duties 1st October next. The appointment will be for six months, renewable for a further six months or longer by mutual arrangement.

Salary at the rate of £100 per annum for the first six months, and £120 per annum thereafter, with board, apartments, and laundry.

Applications, stating age, nationality, and experience, with three recent testimonials (copies), to be sent to the undersigned forthwith.
CHARLES POSTGATE, Secretary-Superintendent.
September 1st, 1914.

Salisbury (General) Infirmary.— Wanted, an ASSISTANT HOUSE SURGEON (having charge of the Medical beds). Salary £75 per annum, with apartments, board, lodging, and washing. Candidates must be unmarried, fully qualified, and registered.

All applications, with testimonials, to be sent to the undersigned, of whom the rules relative to the duties may be had on application.

The duties will commence from the date of appointment.

Canvassing by or on behalf of the candidates will disqualify.

Dated the 19th day of September, 1914. S. B. SMITH, Secretary.

Ingham Infirmary and South Shields and WESTOE DISPENSARY.—Wanted, JUNIOR HOUSE SURGEON (Male). Salary £115 per annum, with residence, board, and washing. No out-visiting. Candidates must hold registered qualifications in Medicine and Surgery. The appointment will be terminable by one month's notice.

Applications, stating age and accompanied by copies (which will not be returned) of recent testimonials, to be sent to the undersigned, from whom further particulars may be obtained.
Ingham Infirmary, South Shields. JOHN POTTER, Secretary.

West Bromwich and District Hospital (86 beds: out-patient attendances, 36,000).—Wanted, an ASSISTANT RESIDENT HOUSE SURGEON and ANÆSTHETIST. He must be unmarried, doubly qualified, and duly registered.

Salary £100 per annum, with board, residence, and washing.

Applications, stating age and if possessing a knowledge of Ophthalmic Surgery, &c., and accompanied by copies of at least three recent testimonials, must be sent to the Honorary Secretary, T. Foley Bache, Esq., Churchill House, West Bromwich, Birmingham, immediately.
By order.
FRANK I. HANCOCK, Secretary.

West Suffolk General Hospital, Bury St. Edmunds.—A RESIDENT MEDICAL OFFICER required for this Hospital. Duties to commence at once. Ninety-five beds.

The Resident Medical Officer must be a registered Medical Practitioner and not married.

Salary £120 per annum, with board, lodging, and laundry.

Applications, stating age and previous experience, and accompanied by not more than four testimonials, should be delivered to the Secretary, from whom copies of the rules and any other information may be obtained.
21st September, 1914. JOHN H. BONNER, Secretary.

Cardiff City Mental Hospital, Whitchurch, near Cardiff (Asylum for the County Borough of Cardiff).—A SECOND ASSISTANT MEDICAL OFFICER (Male) required, single, not above thirty-five years of age, duly registered under the Medical Acts. Salary £250, rising by two annual increments of £15 to £280, all found.

The appointment is subject to the conditions of the Asylums Officers' Superannuation Act, 1909.

The Institution is provided with laboratories for Clinical, Biochemical, and Pathological Research, and every facility is afforded for such. It is within easy reach of Cardiff.

Application forms to be obtained from the Medical Superintendent (D. E. GOODALL) at the above address.

St. Mary's Hospital for Women and CHILDREN, Plaistow, E.—A Male ASSISTANT RESIDENT MEDICAL OFFICER required immediately.

The salary is at the rate of £100 per annum, with board, residence, and laundry, and an honorarium of £10 on completion of six months' service.

The Hospital is a general hospital for women and children, has 42 beds in daily use, and contains special departments for cases of Eyes, Ear, Nose and Throat, Special Diseases of Women, and X Rays.

Applications, with copies of three recent testimonials, to be sent as soon as possible to
1st Sept., 1914. A. ERNEST WILKES, Secretary.

County Borough of Derby.—Education COMMITTEE.—TEMPORARY SCHOOL MEDICAL OFFICER.—Applications are invited for the position of Temporary School Medical Officer, to act under the supervision of the Medical Officer.

The appointment is open to men and women.

Inclusive salary £300 per annum.

In the event of a permanent officer being required the temporary office will be made permanent if the services rendered are satisfactory.

Forms of application may be obtained from the undersigned, and must be returned not later than September 30th.

Canvassing is prohibited.
WILLIAM COOPER, Secretary to the Education Committee.
Education Office, Becket-street, Derby, September 15th, 1914.

Kent County Asylum, Maidstone.— MALE SECOND ASSISTANT MEDICAL OFFICER wanted. Candidates must be fully qualified, registered, unmarried, and not more than thirty-six years of age.

Salary £280 per annum, rising to £300 per annum in two years, with full board, furnished quarters, attendance, coal, gas, and washing.

Candidates must have had at least three years' Asylum experience.

Applications, stating age, qualifications, &c., accompanied by not more than three testimonials, to be sent at once, addressed Medical Superintendent, Asylum, Maidstone.

The appointment will be made subject to the provisions of the Asylums Officers' Superannuation Act, 1909.

Royal Halifax Infirmary.—Wanted, a SECOND HOUSE SURGEON (unmarried), who must be fully qualified and registered. Salary £120 per annum, with residence, board, and washing provided.

Also wanted, a THIRD HOUSE SURGEON (unmarried), who must be fully qualified and registered. Salary £100 per annum, with residence, board, and washing provided.

The Infirmary contains 150 beds. There is a large Eye, Ear, and Throat Department.

Particulars of the duties, &c., may be obtained from the undersigned, to whom applications, with copies of testimonials, should be sent.
OATES WEBSTER, Secretary.
Royal Halifax Infirmary, Halifax, August 11th, 1914.

Royal London Ophthalmic Hospital (MOORFIELDS EYE HOSPITAL), City-road, E.C. Founded 1804.—Applications are invited from gentlemen for the office of SENIOR HOUSE SURGEON.

Candidates must be registered medical practitioners, and must be prepared to begin the duties in October.

Salary at the rate of £100 a year, with board and residence in the Hospital.

Applications, stating age and qualifications, together with copies of recent testimonials, must be received by the Secretary not later than the 6th October.

In the event of the Second House Surgeon or the Third House Surgeon being appointed, other candidates are requested to state whether they would accept the office of Second House Surgeon at the rate of £75 a year, or Third House Surgeon at the rate of £50 a year.

The appointments are respectively for a period of eight months.
11th August, 1914. ROBERT J. BLAND, Secretary.

Birmingham Union.—Medical Staff (Male).—The Guardians invite applications from duly qualified Medical Men for the following vacancies at their Institutions:—

DUDLEY ROAD INFIRMARY.

FIRST ASSISTANT MEDICAL OFFICER at a commencing salary at the rate of £225 per annum.

SECOND ASSISTANT MEDICAL OFFICER at a commencing salary of £180 per annum.

FOURTH ASSISTANT MEDICAL OFFICER at a commencing salary at the rate of £160 per annum.

ERDINGTON INFIRMARY AND COTTAGE HOMES.

ASSISTANT MEDICAL OFFICER at a commencing salary for the two appointments at the rate of £200 per annum.

SELLY OAK INFIRMARY.

ASSISTANT MEDICAL OFFICER at a commencing salary at the rate of £180 per annum.

Each of the above appointments are residential ones, including apartments, rations, laundry, and attendance.

The salary and the assessed value of the emoluments are in each case subject to a deduction of £2 per cent. under the Poor-law Officers' Superannuation Act, 1896.

The gentlemen appointed to the posts will be required should occasion arise to assist at any of the other Institutions under the control of the Board.

Applications, stating which post is applied for, and age and experience, together with copies of recent testimonials, should be sent to the Chief Medical Officer, F. W. Ellis, F.R.C.S., M.D., Dudley-road Infirmary, Birmingham. R. J. CURTIS, Clerk to the Guardians.
Union Offices, Birmingham, 15th September, 1914.

The King Edward Memorial Hospital, Ealing. W.—RESIDENT MEDICAL OFFICER required at once. Appointment for six months, with a second term if mutually agreed. Salary at the rate of £80 per annum, with board, residence, and laundry.

Applications, with three recent testimonials, to be sent not later than Sept. 21st to the Honorary Secretary as above.

Derbyshire Hospital for Sick CHILDREN (40 beds) — Wanted, RESIDENT MEDICAL OFFICER (Lady) for period of twelve months. Applicants must be fully qualified. Salary £100 per annum. Letters of application, with three testimonials, one relating to Anæsthetics, to be lodged with the undersigned. Successful candidate required to take up duties at once.

25, St. Mary's Gate, Derby. ARTHUR N. WHISTON, Secretary.

Royal South Hants and Southampton HOSPITAL.—Required, a HOUSE PHYSICIAN. Candidates must be doubly qualified, registered, and willing to engage for twelve months. Salary £120 per annum, with rooms, board, and washing.

Applications, stating age, with printed copies of testimonials (limited to five), to be sent to the undersigned.

15th Sept., 1914. T. A. FISHER-HALL, Secretary.

City of London Hospital for Diseases of the CHEST, Victoria Park, E. (rail and tram Cambridge Heath, G.E.R.).—Applications, with copies of recent testimonials, for the post of HOUSE PHYSICIAN (Male) are invited to be sent to the Secretary on or before the first post Monday, October 12th. The appointment will be for six months. Candidates must be doubly qualified. Salary at the rate of £75 per annum, with board, residence, and washing provided. GEORGE WATTS, Secretary.

Victoria Hospital, Burnley (80 beds). —Wanted, a SECOND HOUSE SURGEON, to commence duty Oct. 1st. Salary £135 per annum, with residence, board, and washing. Candidates (either sex), who must be fully qualified, are requested to send in their applications, with copies of testimonials, as early as possible to F. A. HARGREAVES, Hon. Sec.

7, Grimshaw-street, Burnley.

(This Hospital is approved by the London University for the purpose of M B. and M.S. Examinations.)

Kent County Asylum, Chartham, near Canterbury.—JUNIOR ASSISTANT (THIRD) MEDICAL OFFICER (Male) required. Single. Salary £250. Emoluments: furnished quarters, with attendance, coal, gas, milk, garden produce, washing, and board.

The appointment is subject to the provisions of the Asylum Officers' Superannuation Act.

Applications, stating qualifications, &c., with copies of three recent testimonials, to Medical Superintendent.

S. African Institute for Medical RESEARCH, JOHANNESBURG. SUPERINTENDENT of ROUTINE DIVISION. Registrable qualification. Thoroughly experienced in routine work of a Clinical Laboratory and competent in Histopathological Diagnosis. Reliable and businesslike gentleman, preferably single. Appointment for twelve months, terminable thereafter at three months' notice. Travelling expenses from London to Johannesburg. £700 per annum, rising by £25 per annum to £750.

Apply, Dr. W. WATKINS-PITCHFORD, care of National Bank of S. Africa, London Wall, E.C.

Winsley Sanatorium for Consump-TION.—The Committee invite applications for the appointment of ASSISTANT RESIDENT MEDICAL OFFICER. Candidates must be duly qualified, registered, and unmarried. Knowledge of Bacteriological methods desirable. Salary £150 per annum, with board, residence, and laundry.

Applications, stating age, qualifications, and previous experience, with copies of three recent testimonials, should be sent to the undersigned not later than September 30th.

FREDERIC JONES, Secretary.

Winsley Sanatorium, near Bath, 15th September, 1914.

Winsley Sanatorium for Consump-TION.—The Committee invite applications for the appointment of SENIOR RESIDENT MEDICAL OFFICER. Candidates must be duly qualified, registered, and unmarried. Previous Sanatorium experience desirable. Salary £300 per annum, with board, residence, and laundry. Applications, stating age, qualifications, and previous experience, with copies of three recent testimonials, should be sent to the undersigned not later than September 30th.

FREDERIC JONES, Secretary.

Winsley Sanatorium, near Bath, 15th September, 1914.

Royal Gwent Hospital (126 beds).— Wanted, RESIDENT MEDICAL OFFICER, registered Medical and Surgical qualifications. Salary at the rate of—first six months, £100 per annum; second six months, £125 per annum; third six months, £150 per annum, with board, residence, and laundry (no stimulants provided). There are three positions to be occupied during the 18 months. The offices are as follows: Casualty Officer, House Physician, and House Surgeon.

Applications, stating age and qualifications, together with copies of three recent testimonials, to be sent to the undersigned.

Applications from ladies not entertained, as there is no accommodation. J. K. MILLWARD, Secretary-Superintendent.

Royal Gwent Hospital, Newport, Mon.

Royal Ear Hospital, Dean-street, Soho, London, W.—The Committee invites immediate applications for the post of HONORARY ASSISTANT ANÆSTHETIST for Tuesday afternoons and Thursday mornings. Applications should be addressed to the Honorary Secretary, Medical Board, at the Hospital.

City Fever Hospital, Little Bromwich, Birmingham.—An ASSISTANT MEDICAL OFFICER is wanted. Salary £200 per annum, with board, residence, and laundry. Applications, with copies of three testimonials, to be sent in at once.

Borough Hospital, Birkenhead.— Wanted, JUNIOR HOUSE SURGEON Salary £100 per annum, with board and laundry. Duties include Anæsthetics, Casualties, and Out-patients.

Apply to Secretary at the Borough Hospital.

Birmingham City Asylum, Rubery-hill, Birmingham.—Wanted, JUNIOR ASSISTANT MEDICAL OFFICER (Male). Salary £200 per annum, with furnished apartments, board, laundry, &c. Applications, with copies of three recent testimonials, to be sent to the Medical Superintendent.

West Norfolk and Lynn Hospital, King's Lynn (52 beds).—Wanted at once, HOUSE SURGEON. Time for reading. Salary £150 per annum, with residence, board, and washing.

Applications, with testimonials, to the Secretary.

Free Eye Hospital, Southampton.— Wanted, a HOUSE SURGEON. Must have some knowledge of Eye work. Salary £100 a year, with board, lodging, and laundry. Duties to commence on 15th October. Apply to

EDWARD C REDMAN, Secretary.

Swansea General and Eye Hospital (161 beds).—HOUSE SURGEON wanted Salary £125 per annum, with board, washing, and attendance. Candidates, who must be fully qualified, are requested to send their applications, stating age, experience, and qualifications, with three testimonials (typewritten copies preferred) to the undersigned.

W. D. HUGHES, Secretary.

Samaritan Free Hospital for Women, Marylebone-road, N.W.—ANÆSTHETIST wanted. Honorarium £15 per annum. Specialist preferred. Candidates will be required to attend before the Medical Committee.

Applications, with copies of testimonials, to be sent not later than October 9th, to the Secretary, from whom further particulars can be obtained.

Northamptonshire County Council EDUCATION COMMITTEE.—ASSISTANT SCHOOL MEDICAL OFFICER.—The Education Committee are about to appoint a Temporary Assistant School Medical Officer. Subject to satisfactory service the appointment will be for the duration of the War.

A salary of £25 per month is offered, and in addition travelling expenses will be paid.

A statement of the duties and conditions attaching to the appointment can be obtained on application to the County Education Offices, Northampton.

Applications, together with not more than three recent testimonials, must be lodged with the undersigned not later than Tuesday, 29th September, 1914.

By order of the Committee,
J. L. HOLLAND, Secretary for Education.

Devonshire Hospital, Buxton, Derby-shire (316 beds).—ASSISTANT HOUSE PHYSICIAN.—The Committee invite applications for this post.

Salary £100 per annum, with furnished apartments, board (excepting stimulants), and laundry.

The appointment will be made for six months. (Ladies are not eligible.)

Applications, with copies of three recent testimonials, endorsed "Assistant House Physician," to be sent in at once.

The Medical Staff consists of five Honorary Physicians, three Honorary Assistant Physicians, a Pathologist and Bacteriologist, and two Resident House Physicians.

The Hospital contains a newly equipped Pathological Laboratory and X-ray Department. By order.

W. STEVENSON, General Superintendent and Secretary.

Sept. 9th, 1914

Hampshire County Council.—Assist-ANT COUNTY MEDICAL OFFICERS OF HEALTH.—The Hampshire County Council propose to appoint three Assistant County Medical Officers of Health, and invite applications from fully qualified medical men. Possession of a Diploma or Degree in Public Health will be considered an advantage. Salary £300, rising to £400 by annual instalments of £25, in addition to travelling allowances.

Applications, with copies of not more than three testimonials upon a form which, with the conditions of appointment, may be obtained from the undersigned, must be delivered at the Castle, Winchester, on or before Tuesday, the 6th October, 1914.

The canvassing of members of the County Council or any Committee, personally or otherwise, is strictly prohibited and will disqualify.

H. BARBER, Clerk of the County Council.

The Castle, Winchester, 14th September, 1914.

Leicestershire and Rutland Mental HOSPITAL, Narborough, near Leicester.—Wanted, a JUNIOR MEDICAL OFFICER (Male). Salary £200 per annum, with board, lodging, and washing, subject to the provisions of the Asylums Officers' Superannuation Act.

Applications to be sent to W. J. FREER, Esq., 10, New-street, Leicester.

Parish of Liverpool.—Oculist.—The Select Vestry of this Parish invite applications for the appointment of OCULIST. The gentleman appointed will be required to attend at the Brownlow Hill Institution at such times as may be necessary (not less frequently than once each week) to treat all cases of Indoor or Outdoor Poor suffering from Eye trouble, which may be referred to him by the Medical Staff.

The salary attached to the appointment is £50 per annum.

Applications for the appointment to be sent to the undersigned forthwith, stating qualifications and enclosing copies of testimonials.

GAIUS W. COSTER, Clerk to the Select Vestry.
Parish Offices, Brownlow Hill, Liverpool, 18th September, 1914.

Assistant Medical Officers are required in the Infectious Hospitals Service of the METROPOLITAN ASYLUMS BOARD. Salary £250 per annum, with board, lodging, and washing. Candidates must be unmarried, must not exceed thirty years of age, and must be qualified by law to practise both Medicine and Surgery in England.

Applications, on forms to be obtained from the undersigned, are to be delivered not later than 10 A.M. on Saturday, 3rd October, 1914. Selected candidates will be written to. Canvassing is strictly prohibited.

By order.
T. DUNCOMBE MANN, Clerk to the Board.
Office of the Board, Embankment, E.C., 21st September, 1914.

Bristol General Hospital. — The Committee invite applications for the posts of FIRST HOUSE PHYSICIAN, SECOND HOUSE PHYSICIAN, HOUSE SURGEON, and CASUALTY HOUSE SURGEON. Salary at the rate of £120 per annum. Board, residence, &c., will be provided in the house. The appointments will be for six months from the 1st November. Local applicants not necessarily preferred. Candidates must be registered under the Medical Acts and produce testimonials of good personal character and ability, and must have had recent experience in the administration of Anæsthetics.

Applications, stating age, with copies of testimonials, to be sent to the Secretary on or before Tuesday, 13th October.

By order of the Committee.
THOMAS W. GREGG, Secretary.

Norfolk and Norwich Hospital.— Required, to commence duties forthwith, HOUSE PHYSICIAN and CASUALTY HOUSE SURGEON in charge of Septic Wards.

Salary: House Physician £100 and Casualty House Surgeon £100, with board, lodging, and washing.

The appointments are for twelve months and six months respectively.

Candidates (women ineligible) must be not more than thirty years of age. They must produce evidence of possessing a double qualification and of being registered according to the provisions of the Medical Act.

Applications, with copies of not more than four testimonials, to be received not later than Tuesday, 6th October, 1914, by the undersigned, from whom particulars as to duties may be obtained.

FRANK G. HAZELL, Secretary.

The Hospital for Sick Children, Great Ormond-street, London, W.C.—An ASSISTANT CASUALTY MEDICAL OFFICER is required on the 24th October, 1914.

Candidates are invited to send in their applications, addressed to the Secretary, with copies of only three testimonials written specially for the purpose, on or before 12 o'clock on Monday, the 19th October.

The appointment is for six months. Salary £30, washing allowance £2 10s., with board and residence in the Hospital.

Candidates must be unmarried and possess a legal qualification to practise. They will be required to attend before the Joint Committees at their meeting on Wednesday, the 21st October, 1914, at 5 P.M. precisely.

Forms of application may be obtained from the Secretary.

By order of the Committee of Management.
September, 1914. STEWART JOHNSON, Secretary.

County Borough of Merthyr Tydfil.— MEDICAL INSPECTION OF SCHOOL CHILDREN.—The Education Committee invite applications for the post of ASSISTANT SCHOOL MEDICAL OFFICER, at a commencing salary of £300 per annum, advancing by annual increments of £50 to £400. The main duties will be the Medical Inspection of Children in the Schools of the Authority, and treatment at the School Clinic under the supervision of the Medical Officer of Health; he may also be required to assist the Medical Officer in the performance of his general duties.

Candidates should be between twenty-five and thirty-five years of age, and preference will be given to those who:—

(1) Have had adequate training in State Medicine or hold a Diploma in Public Health;
(2) have had some definite experience of School Hygiene;
(3) have enjoyed special opportunities for the study of Diseases in Children;
(4) have knowledge of Refraction and Diseases of the Eye;
(5) have knowledge of the X Ray Treatment of Ringworm.

Applications, endorsed "Assistant S.M.O.," stating age, qualifications, and experience, together with copies of not more than three testimonials, should reach me on or before 30th September.

Canvassing for the office will be considered a disqualification.

RHYS ELIAS, Director of Education.
Education Department, Town Hall, Merthyr Tydfil,
15th September, 1914.

University of Otago, New Zealand.— Applications are invited for the position of PROFESSOR OF CLINICAL PATHOLOGY in the above University. Salary £600 per annum, rising to £800. Age between twenty-five and forty. Full particulars and forms of application obtainable by sending addressed foolscap envelope to the High Commissioner for New Zealand, 13, Victoria-street, London, S.W., by whom complete applications will be received up to 22nd October, 1914.

St. Mark's Hospital for Cancer, FISTULA, and other DISEASES of the RECTUM, City-road, E.C.—HOUSE SURGEON wanted at once. Must be doubly qualified. Salary £100 per annum, board, lodging, and washing. Applications, with copies of three recent testimonials, to be forwarded as soon as possible to the Secretary at the Hospital.

The Queen's Hospital for Children, Hackney-road, Bethnal Green, E. Telephone: Dalston 305.—HOUSE SURGEON required. Six months' appointment. Salary £80 per annum, with board, residence, and washing.

Candidates must possess a Medical and Surgical qualification.

Applications, with copies of not more than three testimonials, should be sent as soon as possible to

21st Sept., 1914. T. GLENTON-KERR, Secretary.

Surrey County Asylum, Netherne, Merstham. — ASSISTANT MEDICAL OFFICER required. Candidates must be fully qualified and registered, unmarried, and under thirty years of age. Salary commencing at £230 per annum, rising £20 annually to £330, with board, lodging, and laundry. The appointment will be made subject to the provisions of the Asylums Officers' Superannuation Act, 1909. Applications, stating age, qualifications, &c., and accompanied by not more than three testimonials, to be addressed to the Medical Superintendent.

Salford Royal Hospital.—The following vacancies will occur in the Resident Medical Staff (Male) on the 1st October next:—

RESIDENT SURGICAL OFFICER. Salary at the rate of £120 per annum.

CASUALTY HOUSE SURGEON. Salary at the rate of £100 per annum.

The appointments are for six months, with board and residence.

Candidates must be registered under the Medical Act.

Applications, stating age, together with copies of testimonials and certificate of registration, to be delivered to the undersigned without delay.

By order of the Board.
GEORGE RUDDLE,
Sept. 22nd, 1914. Secretary and Superintendent.

Lowestoft and North Suffolk Hospital. Applications are invited from ladies for the office of HOUSE SURGEON.

Candidates must be unmarried, under thirty years of age, fully qualified, and on the Medical Register, and must be prepared to commence their duties on the 8th October, 1914.

Salary at the rate of £120 per annum, with board, residence, and laundry.

The appointment will be determinable on either side at three calendar months' notice.

Applications, with copies of not more than three testimonials, must be received by me not later than 2nd October, 1914.

W. BRYAN FORWARD, Clerk.
148, London-road North, Lowestoft, 3rd September, 1914.

Borough of Luton.—Acting Medical OFFICER OF HEALTH.—The Medical Officer of Health for the Borough of Luton having been called up for military service, the Council invite applications for the appointment of Acting Medical Officer of Health, Medical Superintendent of the Council's Infectious Diseases Hospital, Schools Medical Officer, and Police Surgeon, at a salary at the rate of £500 per annum, payable monthly.

The engagement will be subject to the approval of the Local Government Board, and be for the period during which the Medical Officer of Health is absent from duty, but will, nevertheless, be determinable by either party by one calendar month's written notice.

Applications, stating age, experience, and qualifications, and endorsed "Acting Medical Officer," must be forwarded to me, with copies of not more than three recent testimonials, not later than 5 o'clock P.M., on Wednesday 7th October next.

Canvassing will disqualify. W. SMITH, Town Clerk.
Town Hall, Luton, 19th September, 1914.

County Borough of Bootle.—Hospital for INFECTIOUS DISEASES. — The Corporation of Bootle require the services of a RESIDENT MEDICAL OFFICER of either sex. Salary £150 per annum, with board, washing, and apartments at the Linacre Hospital. Applicants must be unmarried, with registered Medical and Surgical qualifications, which must be stated in the application, together with age and experience. The Hospital contains about eighty beds. Cases of phthisis are admitted, in addition to patients suffering from scarlet fever, diphtheria, typhoid fever, &c. The person appointed will not be allowed to engage in private practice, will be required to devote his or her whole time to the duties of the office, must perform such bacteriological work as may be required, and will be given an opportunity of gaining experience in anti-tuberculosis work. Applications, accompanied by copies of three recent testimonials, to be sent at once to the Medical Officer of Health, Town Hall, Bootle, from whom further particulars, if required, can be obtained.

By order.
J. SPENCER TUMILTY, Town Clerk.
Town Clerk's Office, Bootle, 18th September, 1914.

North Devon Infirmary, Barnstaple.—Wanted, end of September, 1914, a duly qualified HOUSE SURGEON. Salary £100 per annum, with board, residence, and washing. The appointment is for not less than six months. Applications, stating age, qualifications, with copies of testimonials, to be sent to the Chairman of the House Committee.

Children's Hospital, Sheffield.—Wanted, HOUSE SURGEON at this Institution (60 beds). Salary £150 per year, with board and residence. Also HOUSE SURGEON at the EAST END HOSPITAL (Out-patient Department only). Salary £120 a year, with board and residence.

Applications, with testimonials (copies), to be addressed to Mr. FREDERICK GILL, Secretary, 14, Norfolk-row, Sheffield.

Leeds General Infirmary (520 beds).—Wanted at once, an ASSISTANT CLINICAL PATHOLOGIST, who will be required to devote the whole of his time to the work.

Salary £150 per annum and luncheon.

Candidates must be legally qualified.

Applications, with three copies of recent testimonials, should be addressed to the Infirmary. FRED. J. BRAY, General Manager.

County Asylum, Prestwich, Manchester.—ASSISTANT MEDICAL OFFICER required. Salary commencing at £250, increasing to £300 at the end of a year, and upon promotion to £450, together with board, furnished apartments, attendance, and washing.

Candidates must be unmarried, not over thirty years of age, and duly registered under the Medical Act. Applications, stating age and qualifications, &c., to be sent to the Medical Superintendent.

The Royal Infirmary, Sunderland.—HOUSE PHYSICIAN (Male) required. Candidates must be duly qualified and registered. Salary £120 per annum, with board, residence, and laundry. There are 212 beds for patients, and four Residents. Applications, stating age, with copies of three recent testimonials, to be sent to the undersigned.

Sept. 22nd, 1914. THOMAS ROBINSON, Secretary.

Nottingham City Asylum.—Junior ASSISTANT MEDICAL OFFICER (Male) wanted. Single, age not to exceed thirty; must be registered. Experience in Lunacy not essential. Salary £200, rising to £250 by two annual increments, with board (no beer), apartments, and laundry. Subject to the provisions of the Superannuation Act. Applications, stating age and qualifications, and enclosing copies of recent testimonials, to be sent to the Medical Superintendent.

Victoria Children's Hospital, Park-street, Hull (77 beds).—Wanted, a Lady HOUSE SURGEON (Resident). Surgical side. Salary £60 per annum, with board and laundry. Applications, stating when at liberty, and with copies of recent testimonials, addressed to the Hon. Secretaries, to be delivered at the Hospital.

For any further information apply to C. W. STAMFORD, Assistant Secretary.

PS.—A photo (to be returned) may be enclosed with the application.

Royal Victoria and West Hants HOSPITAL, Bournemouth.—Required, to commence duty immediately, HOUSE SURGEON. Salary £100 per annum and extras, with board, lodging, and washing.

The appointment is tenable for six months. Candidates (women ineligible) must be unmarried and not more than thirty years of age. They must produce evidence of possessing a double qualification and of being registered according to the provisions of the Medical Act.

Applications, with copies of not more than three recent testimonials, to be received by the undersigned.

GORDON M. SAUL, Secretary.

Great Yarmouth Hospital (72 beds).—Patients treated during the year: In-patients, 546; Out-patients, 3632; Operations in Theatre, 247; Minor Operations in Out-patients' Department, 314.—HOUSE SURGEON (Male), unmarried, required at once. Salary £140 per annum, with board, lodging, and washing. Will be required to deliver lectures to Probationer Nurses.

Applications, to be accompanied by not more than four testimonials, to be sent on or before noon on Monday, the 5th October, 1914, to

RICHARD F. E. FERRIER, Hon. Secretary.

16, South Quay, Great Yarmouth.

Parish of St. Leonard, Shoreditch.—JUNIOR ASSISTANT MEDICAL OFFICER wanted.—The Guardians of the Poor of the above-named Parish require the services of a gentleman as Junior Assistant Medical Officer for their Infirmary, Hoxton-street, N.

Salary £150 per annum, with board, apartments, and washing.

Candidates must be registered medical practitioners.

The appointment will be made for a period in the first instance for six months, but will be renewable, and be subject to the approval of the Local Government Board.

Further particulars can be obtained from Mr. Welby E. Fisher, F.R.C.S. Eng., Medical Superintendent.

The appointment will be made subject to a certificate of health.

Applications to be made upon forms to be obtained at my office as under by forwarding a stamped, addressed foolscap envelope or by personal application, which are to be returned to me as soon as possible.

By order,

ROBERT CLAY, Clerk to the Guardians.

Clerk's Office, 213, Kingsland-road, N.E., 23rd Sept., 1914.

Liverpool Royal Infirmary.—Applications are invited for Five Resident Posts, vacant 1st October.—THREE HOUSE PHYSICIANS, ONE HOUSE SURGEON, ONE SPECIAL DEPARTMENTS. Salary at rate of £60 per annum. Applicants must be qualified.

County Borough of Blackburn.—Wanted at once, TEMPORARY RESIDENT MEDICAL OFFICER at the Infectious Diseases Hospital, who shall also act as Assistant Medical Officer of Health. Salary £200 per annum, with board and residence. Apply to J. COOTE HIBBERT, M.D., Medical Officer of Health, Blackburn.

The Royal Eye and Ear Hospital, Bradford.—Wanted, a HOUSE SURGEON (non-resident). Must have had experience in eye work. Salary £200.

Applications, stating age, &c., with copies of recent testimonials, to be sent to the undersigned, from whom particulars can be obtained.

Sept. 22nd, 1914. C. V. WOODCOCK, Secretary.

East Sussex Hospital, Hastings.—HOUSE SURGEON required (Male or Female). Salary at rate of £100 per annum, with residence, board, and washing. Candidates must be registered under the Medical Acts.

Applications, with copies of three recent testimonials, to be sent to the Secretary.

Victoria Hospital, Blackpool (80 beds).—Required immediately, a HOUSE SURGEON, duly qualified and registered. Salary £150 per annum, with residence, board, and laundry. Application, with testimonials and age, to be sent to the undersigned. T. W. BUTCHER, Hon. Sec.

Dated Sept. 23rd, 1914.

Parish of Bermondsey.

MEDICAL OFFICER.

Required, Medical Officer. Salary £450, rising £25 annually to £500 per annum. Candidates must be registered Medical Practitioners, experienced, well up in their work, married or single, aged from about twenty-eight to forty years of age (other things being equal preference given to a married man).

The gentleman appointed must reside within the Parish of Bermondsey, and devote the whole of his time to the duties of his office, which consists of attending to the sick poor of the Parish in the Institutions or in their own homes under the direction of the Medical Superintendent of the Infirmary. Applications to be made to the Medical Superintendent of the Infirmary, Lower-road, Rotherhithe, London, S.E., for particulars as to duties, &c., forms of application, &c. Applications to be returned to the Medical Superintendent of the Infirmary not later than 3rd October, 1914. Canvassing, either directly or indirectly, will disqualify.

E. PITTS FENTON, Clerk to the Guardians.

283, Tooley-street, S.E., 22nd September, 1914.

The Royal Infirmary, Hull.—Senior HOUSE SURGEON wanted. The Hospital contains 125 surgical beds. There are in addition a Resident House Physician, Assistant House Surgeon, and two Casualty House Surgeons. Candidates must be fully qualified, registered, and unmarried, and preference will be given to such as have previously held a similar appointment. The salary is £150 per annum, with board and furnished apartments. The selected candidate will be required to take up duties 22nd October, enter into an agreement to remain not less than two years, and to give or receive three months' notice to terminate his engagement. Applications, stating age, qualifications, and previous experience, with copies of testimonials, to be sent addressed "Chairman, House Committee."

BENJAMIN BROOKS, Secretary.

The Royal Infirmary, Hull.—Wanted, ASSISTANT HOUSE SURGEON. Must be fully qualified, willing to hold office for not less than twelve months, and shall give and receive three months' notice to terminate engagement. His duties will be chiefly in the wards and Out-patient Department, where an exceptionally varied experience may be obtained, patients being drawn from a sea-going community as well as from a manufacturing and agricultural district. He will also have charge of beds in the Ophthalmic wards.

Salary at the rate of £100 per annum, with board and lodging.

Applications, with copies of testimonials, to be sent in, addressed Chairman, House Committee, at once.

BENJAMIN BROOKS, Secretary.

Hull Royal Infirmary.—The Appointing Committee are prepared to elect an HONORARY SURGEON to the Institution.

Applicants must possess the Fellowship of the Royal College of Surgeons in England, or Edinburgh, or Ireland, or have been an Hon. Assistant Surgeon of this Infirmary for five years.

Honorary Surgeons are appointed for a period not exceeding twenty years, or until attaining sixty years of age, and may not hold any paid appointment to any other Charitable Medical Institution or to a Workhouse.

Applicants are prohibited from personally canvassing, but may send copies of their applications and testimonials to the members of the Appointing Committee.

Applications, addressed "The Chairman, Committee of Management," must be received at the Board Room of the Institution not later than 10 o'clock A.M. on Wednesday, 7th October, 1914.

By order.

Board Room, 24th Sept., 1914. BENJAMIN BROOKS, Secretary.

Derby County Asylum, Mickleover, Derby.—Wanted, JUNIOR ASSISTANT MEDICAL OFFICER (Male). Salary commencing at £200, with board, lodging, and washing. Applications to the Medical Superintendent.

Royal Dental Hospital, Leicester-square, W.C.—There is a vacancy for a HOUSE ANÆSTHETIST. Attendance three afternoons a week. Applications, with copies of testimonials and stating age, to be sent in not later than Saturday, Oct. 3rd, 1914, to the Secretary, from whom particulars may be obtained.

Nottingham General Hospital.— Wanted, an ASSISTANT HOUSE PHYSICIAN (lady or gentleman), who will be appointed for six months and be eligible for reappointment for one similar term. Salary at the rate of £100 per annum, with board, residence, and laundry in the hospital.

Applications, stating age, with testimonials, to be addressed to the Secretary. By order.

E. M. KEELY, Secretary.

Nottingham General Hospital.— Wanted, an ASSISTANT HOUSE SURGEON (lady or gentleman) who will be appointed for six months and be eligible for reappointment for one similar term. Salary at the rate of £100 per annum, with board, residence, and laundry in the hospital.

Applications, stating age, with testimonials, to be addressed to the Secretary. By order,

E. M. KEELY, Secretary.

Bradford Royal Infirmary.—Male HOUSE SURGEON wanted at once.

Candidates must be single, duly qualified, and registered. Salary £100 per annum, with board, residence, and washing. There are 210 beds and five Resident Officers.

Applications, stating age, qualifications, and previous experience, with copies of recent testimonials, to be received by the undersigned not later than Tuesday, September 29th, 1914.

Notice will be sent to selected candidates.

J. J. BARRON, Secretary-Superintendent.

Bradford Royal Infirmary.—Resident SURGICAL OFFICER (with previous hospital experience) wanted to supervise the work of the three House Surgeons and be generally responsible for the Surgical work of the Infirmary. Candidates must be single and legally qualified. Salary £150, with board and residence. There are 210 beds and five Resident Officers. Applications, stating age, qualifications, and previous experience, with copies of recent testimonials, to be received by the undersigned not later than Tuesday, Oct. 6th, 1914.

Notice will be sent to selected candidates.

J. J. BARRON, Secretary-Superintendent.

St. Mary's Hospitals for Women and CHILDREN, Manchester.—HOUSE SURGEON for the Children's Department to assist in the Obstetrical and Gynæcological Departments as required. Also a HOUSE SURGEON for the Obstetrical and Gynæcological Departments to assist as required in the Children's Department. The appointment in each case is for a period of three or six months, with an honorarium at the rate of £70 per annum, with board and residence. Applications, with copies of testimonials (not more than three in number), to be sent to the undersigned on or before the 5th October Form of application will be supplied.

By order. R. RATCLIFFE, Secretary.

Metropolitan Hospital, Kingsland-road, N.E. (Patron: His Majesty The King).—There is a vacancy for the post of ASSISTANT HOUSE SURGEON.

The appointment is tenable from the present date to the period expiring on 31st January, 1915. Salary at the rate of £40 a year, with full board and washing. The candidate must possess a registered Medical and Surgical qualification of the United Kingdom.

The candidate must not call on members of the staff.

Applications, with copies of testimonials and a certificate of ability to administer anæsthetics from a teacher of a recognised school, should be sent to J. C. BUCHANAN, Secretary and House Governor.

Belgrave Hospital for Children, Clapham-road, S.W.—HOUSE SURGEON (Male). This appointment is now vacant. Applicants must be fully qualified and registered. The appointment is for six months, with board, residence, and washing provided. Salary at the rate of £75 per annum.

HOUSE PHYSICIAN (Male). This appointment will be vacant on 1st October next. Applicants must be fully qualified and registered. The appointment is for six months, with board, residence, &c., provided. Salary at the rate of £75 per annum.

Applications, with copies of testimonials, to be forwarded as soon as possible to the undersigned, from whom further particulars may be obtained. THOMAS CLAPHAM, Secretary.

Belgrave Hospital for Children (Incorporated), Clapham-road, S.W.—ASSISTANT PHYSICIAN. The Committee of Management invite applications for the above appointment. Candidates must be Graduates in Medicine of an English University and Fellows or Members of the Royal College of Physicians, London. Applications, with copies of testimonials, must be delivered to the undersigned by Saturday, October 10th, 1914, from whom further information may be obtained.

By order.

THOMAS CLAPHAM, Secretary.

Corporation of Manchester.—Monsall FEVER HOSPITAL.—Appointment of THIRD and FOURTH MEDICAL ASSISTANTS at £150 per annum each, with board, lodgings, and washing. Candidates must be fully qualified, registered Medical Practitioners. The gentlemen appointed will be required to devote the whole of their time to the duties of the office and to act under the Medical Superintendent.

The Hospital contains about 500 beds, and the diseases treated are scarlet fever, diphtheria, enteric fever, puerperal fever, and erysipelas. Preference will be given to candidates who have held a responsible resident appointment at a general hospital. Some knowledge of Bacteriology is essential.

Applications, stating age and experience (both Medical and Surgical), with copies of three recent testimonials, and endorsed "Appointment of Third and Fourth Medical Assistants," should be addressed to the Chairman of the Sanitary Committee, Public Health Office, Civic Buildings, 1, Mount-street, Manchester, and sent in not later than Saturday, the 10th day of October, 1914.

THOMAS HUDSON, Town Clerk.

West Ham Union.—Third Assistant (RESIDENT MALE) MEDICAL OFFICER.—The Guardians invite applications for the appointment of Third Assistant (Resident Male) Medical Officer at their Infirmary, Whipps Cross-road, Leytonstone, at a salary of £180 per annum, rising by annual increments of £10 to a maximum of £200 per annum, with the usual residential allowances.

The successful candidate will be required, should occasion arise, to act at any of the other institutions under the control of the Board.

Further particulars as to the appointment may be obtained upon application to the Medical Superintendent at the Infirmary.

Forms upon which application must be made can be obtained at my office, or will be forwarded upon receipt of a stamped, addressed foolscap envelope, and be returned not later than 10 A.M. on Thursday, the 15th proximo. By order of the Board.

THOMAS SMITH, Clerk.

Board Room, Union-road, Leytonstone, N.E., 22nd September, 1914.

West Ham Union.—Fourth Assistant (LADY) MEDICAL OFFICER.—The Guardians invite applications for the appointment of Fourth Assistant (Lady) Medical Officer at their Infirmary, Whipps Cross-road, Leytonstone, N.E., at a salary of £160 per annum, rising by annual increments of £10 to a maximum of £180 per annum, with the usual residential allowances.

Further particulars may be obtained upon application to the Medical Superintendent at the Infirmary.

The successful candidate will be required, should occasion arise, to act at any of the other institutions under the control of the Board.

Forms, upon which application must be made, can be obtained at my office, or will be forwarded upon receipt of a stamped, addressed foolscap envelope, and must be returned not later than 10 A.M. on Thursday, the 1st proximo.

Canvassing the Guardians, either directly or indirectly, is prohibited, and will disqualify. By order of the Board.

THOMAS SMITH, Clerk.

Board Room, Union-road, Leytonstone, N.E.,
15th September, 1914.

Parish of St. Marylebone.—Appoint-ment of TEMPORARY SECOND ASSISTANT MEDICAL OFFICER, to take the place of the Medical Officer called up to the Colours.—Required, a Temporary Second Assistant Medical Officer (Resident, Male) at the Infirmary, Rackham-street, Notting Hill, W.

Salary £200 per annum, with furnished apartments, rations, and washing. Candidates must be unmarried and not more than thirty years of age, and must be doubly qualified and registered. The appointment will be subject to a month's notice on either side.

The appointment, salary, and emoluments will be subject to the approval of the Local Government Board.

Applications, to be made in own handwriting, stating age, qualifications, and experience, accompanied by copies of not less than three recent testimonials, to be forwarded to the undersigned as soon as possible. Personal canvassing will disqualify any candidate.

Candidates are asked to apply in the first instance to the Medical Superintendent of the Infirmary, from whom all information may be obtained. By order.

HENRY T. DUDMAN, Clerk to the Board of Guardians.

Guardians' Offices, Northumberland-street, W., 23rd September, 1914.

Parish of St. Marylebone.—Appoint-ment of THIRD ASSISTANT MEDICAL OFFICER (Clinical Assistant) (Resident, Male).—Required, a Third Assistant Medical Officer at the Infirmary, Rackham-street, Notting Hill, W. Candidates must be unmarried and not more than thirty years of age, and must be doubly qualified and registered. Salary at the rate of £180 per annum, with furnished apartments, rations, and washing. The appointment is for six months only, subject to a month's notice on either side. The Guardians reserve to themselves the option of continuing the appointment for a further six months.

The appointment, salary, and emoluments will be subject to the approval of the Local Government Board and to the provisions of the Poor-law Officers' Superannuation Act, 1896.

Applications, to be made in own handwriting, stating age, qualifications, and experience, accompanied by copies of not less than three recent testimonials, to be forwarded to the undersigned as soon as possible. Applications to be made on a printed form to be obtained from me. Personal canvassing will disqualify any candidate.

Candidates are asked to apply in the first instance to the Medical Superintendent of the Infirmary, from whom all information may be obtained. If the interview is satisfactory the forms of application will be forwarded to the candidates. By order.

HENRY T. DUDMAN, Clerk to the Board of Guardians.

Guardians' Offices, Northumberland-st., W., 23rd September, 1914.

Oxford Eye Hospital. — Wanted, HOUSE SURGEON, fully qualified and registered. Salary at the rate of £100 per annum, with board, residence, and washing. Applications, with testimonials, to be sent at once to the Secretary, Oxford Eye Hospital, Oxford.

City of Norwich. — Wanted, an ASSISTANT MEDICAL OFFICER OF HEALTH. Candidates must possess a Diploma in Public Health and have a competent knowledge of the Bacteriological determination of Enteric, Diphtheria, and V.D.; knowledge of Small-pox a recommendation. The gentleman selected will be provided with rooms, board, &c., at the Isolation Hospital, and be required to act as R.M.O. He will be appointed an Assistant S.M.O. and given occasional opportunity to carry out Medical Inspection of Children in Schools, but his principal duties will be the administrative and hospital treatment of infectious diseases and their bacteriology.

Salary £240 per annum.

Apply, stating age, qualifications, experience, and when at liberty, with copies of two recent testimonials, to Dr. PATTIN, M.O.H., Municipal Buildings, Norwich, on or before Wednesday, September 30th.

City of Westminster Union.—The Guardians require an ASSISTANT MEDICAL OFFICER at their Infirmary, Colindale-avenue, Hendon, N.W.

Remuneration £160 per annum, rising £10 yearly to £180 per annum, with board, residence, and washing.

Particulars of the duties may be obtained upon personal application to the Medical Superintendent at the Infirmary, or forms of application may be obtained upon forwarding to me a stamped, addressed envelope.

Applications must be sent to the undersigned not later than Saturday, the 17th October, 1914. W. J. LICKLEY, Clerk.

Guardians Offices, Princes-row, Buckingham Palace-road, S.W.
22nd September, 1914.

City of Westminster Union.—The Guardians require a SECOND ASSISTANT MEDICAL OFFICER for the Infirmary in the Fulham-road, S.W. Remuneration £160 per annum, rising £10 yearly to £180 per annum, with board, residence, and washing.

Particulars of the duties may be obtained upon personal application to the Medical Superintendent any day between 12 and 1.30 P.M., or forms of application may be obtained upon forwarding to him a stamped, addressed envelope.

Applications to be made to the Medical Superintendent at the Infirmary before Thursday, the 8th October.

15th September, 1914.

City of Westminster Union.—The Guardians require a THIRD ASSISTANT MEDICAL OFFICER for the Infirmary in the Fulham-road, S.W. Remuneration £140 per annum, rising £10 yearly to £160 per annum, with board, residence, and washing.

Particulars of the duties may be obtained upon personal application to the Medical Superintendent any day between 12 and 1.30 P.M., or forms of application may be obtained upon forwarding to him a stamped, addressed envelope.

Application to be made to the Medical Superintendent at the Infirmary, on or before Thursday, the 8th October.

15th September, 1914.

Wolverhampton and Staffordshire GENERAL HOSPITAL.—A HOUSE SURGEON required. Salary at the rate of £125 per annum, with board, furnished rooms, and laundry provided.

Candidates must be qualified and registered. The appointment is for six months, commencing September 11th, 1914.

Applications, with copies of testimonials, to be received immediately.

The Hospital contains 137 surgical beds, of which forty will be in charge of the candidate appointed.

Forms of application and further particulars may be obtained on application to the undersigned.

Wolverhampton. W. H. HARPER, House Governor and Secretary.

Wolverhampton and Staffordshire GENERAL HOSPITAL.—A vacancy occurs for a RESIDENT MEDICAL OFFICER. Candidates must be registered under the Medical Acts.

The appointment is for six months, with a salary at the rate of £125 per annum, with board, furnished rooms, and laundry provided.

Duties to commence forthwith.

Applications, with copies of testimonials, to be received immediately.

A fully equipped Bacteriological Department has been recently added in which the Resident Medical Officer will assist the Pathologist.

The Hospital contains 209 beds of which 72 are medical.

Wolverhampton. W. H. HARPER,
House Governor and Secretary.

Wolverhampton and Staffordshire GENERAL HOSPITAL.—PATHOLOGIST.—Owing to the resignation of Dr. William Boyd, on his appointment as Professor of Pathology to the University of Winnipeg, the post of Pathologist and Bacteriologist to this Hospital is now vacant.

Salary £200 per annum, percentage of outside fees, together with the opportunity of private consultation work. There is a wide and growing field for work in the area the Hospital serves, and the opening is an exceptional one.

Applications, with copies of testimonials, should reach the undersigned on or before October 5th, 1914.

W. H. HARPER, House Governor and Secretary.

Wolverhampton, September 22nd, 1914.

Leicester Royal Infirmary (300 beds). —RESIDENT HOUSE SURGEONS and ASSISTANT HOUSE SURGEONS wanted. Applications to House Governor and Secretary.

Wanted, Three Resident Medical OFFICERS. Salary, with board, lodging, and laundry, at the rate of £40 per annum. Apply, Medical Superintendent, ROYAL INFIRMARY, Dundee.

District Infirmary and Children's HOSPITAL, Ashton-under-Lyne (110 beds, mainly surgical).—Wanted, SENIOR HOUSE SURGEON. Applicants must have had previous hospital experience. Salary £120, and fees. Board, residence, and laundry provided. Applications, stating age and enclosing copies of recent testimonials, to be sent at once to the Honorary Secretary, Leonard Bottomley, Esq., M.A., LL D., 120, Stamford-street, Ashton under-Lyne. FRANK OLIVER, Secretary-Superintendent.

September 23rd, 1914.

Cardiff and County Public Health LABORATORY. — Appointment of BACTERIOLOGIST.—The Joint Laboratory Committee of the Cardiff City Council and the Glamorgan County Council is desirous of engaging a competent Bacteriologist, who will work in their Laboratory at Cardiff under the direction of the Medical Officers of Health for the City of Cardiff and County of Glamorgan respectively, who are the Directors of the Laboratory.

The person appointed will be required to undertake all branches of Diagnostic Bacteriology, the Bacteriological Examination of Water, Air, Soil, Sewage, Sewage and other Effluents, Milk and other Foods or Food Materials, Diseased Tissues, Pathological Substances, Specimens for the purpose of Diagnosis, &c., and other examinations of a like nature as the Committee or Directors may order from time to time.

He shall also, if required, undertake such teaching work as the Committee may from time to time direct.

He will be required to devote the whole of his time to the duties of his appointment under the Joint Committee, and will not be entitled to hold any other appointment or undertake any other professional work without the express written permission of the Committee.

Salary £200 by £10 to £250 a year.

No pension is attached to the appointment, and all fees received by the person appointed, either for work done in the Laboratory or for teaching work, or for giving expert evidence in Court, or otherwise in any professional capacity, shall be paid over to and considered to be the property of the Committee.

The appointment will be terminable by one month's notice on either side.

Applications, stating age, qualifications, and previous experience, accompanied by copies of not more than three recent testimonials, are to be received by the undersigned not later than 10 A.M. on Thursday, 8th Oct., 1914.

Personal canvassing, direct or indirect, will be a disqualification.

W. E. R. ALLEN, Clerk of the Joint Committee.

Glamorgan County Hall, Cardiff, 23rd Sept., 1914.

NOTICE.

National Insurance Act.—Sanatorium Benefit.

The Proprietors of THE LANCET cannot guarantee that the appointments here advertised carry in all particulars the conditions required by the Representative Meeting of the British Medical Association at Liverpool on July 22nd, 1912.

Durham County Council.—Assistant TUBERCULOSIS MEDICAL OFFICER.—The County Health Committee will shortly appoint an Assistant Tuberculosis Medical Officer at a salary of £350 per annum, rising by annual increments of £25 to £400 per annum, with reasonable travelling expenses in addition.

The gentleman appointed must be a registered medical practitioner over twenty-five years of age, and must devote the whole of his time to the duties of the office. He must have held a house appointment for at least six months in a general hospital, and have had special practical experience in the treatment of Tuberculosis in sanatoria and otherwise. The possession of a Diploma or Degree in Public Health and practical experience of bacteriological laboratory work will be deemed an additional qualification for the post.

The officer appointed will, subject to the control of the Tuberculosis Medical Officer, have charge of the Tuberculosis Dispensaries and the general arrangements for the provision of tuberculosis treatment in the administrative county otherwise than in sanatoria. He will also, as required, attend meetings of the County and District Insurance Committees.

He will be attached to the County Health Department, and will be required to work under the administrative control of the County Medical Officer of Health.

The gentleman appointed will be required to reside at a centre to be fixed by the County Health Committee, and the appointment may be determined by three months' notice on either side.

Applications, endorsed "Assistant Tuberculosis Medical Officer," with copies of not more than three recent testimonials, must be received on or before the 5th October, 1914, by the County Medical Officer, Shire Hall, Durham, from whom forms of application can be obtained.

Canvassing is prohibited.

HAROLD JEVONS, Clerk of the County Council.

Shire Hall, Durham, 15th September, 1914.

County Borough of Great Yarmouth. —ASSISTANT MEDICAL OFFICER OF HEALTH. — The Council invites applications from duly qualified practitioners for the post of Assistant Medical Officer of Health. Commencing salary £250 per annum.

The gentleman appointed will be primarily engaged in carrying out, under the direction of the Medical Officer of Health, the Medical Inspection of School Children under the Education (Administrative Provisions) Act, 1907. In addition he will be required to perform such other (Public Health) duties as the Medical Officer of Health may direct.

Preference will be given to candidates possessing a Diploma in Public Health, and who have had special experience in Children's Diseases.

Applications, giving particulars of age, qualifications, and experience, and accompanied by copies of not more than three recent testimonials, to be sent to the undersigned not later than 3rd October next, enclosed in a sealed envelope endorsed "Assistant Medical Officer."

Canvassing will disqualify. By order.
W. EDGAR STEPHENS, Town Clerk.
Town Clerk's Office, Town Hall, Great Yarmouth,
23rd September, 1914.

Durham County Council. — The County Education Committee propose to appoint an ASSISTANT SCHOOL MEDICAL OFFICER (Woman), to act under the County Medical Officer in connexion with the inspection of children attending elementary schools, and such other duties as may from time to time be required by the Education Committee.

The commencing salary will be £300 per annum, rising by annual increments of £10 to a maximum of £350 per annum, with reasonable travelling and out-of-pocket expenses in addition, and the successful candidate will be required to devote her whole time to the duties of the office and to reside in or near the district to which she may be attached, at a place to be approved by the County Education Committee.

In making the appointment preference will be given to the candidate who has—

(1) Enjoyed special opportunities for the study of diseases in children;
(2) Had some definite experience in School Hygiene; and
(3) Had adequate training in State Medicine, or holds a Diploma in Public Health.

The appointment will be subject to three calendar months' notice on either side, to expire on the last day of any calendar month. Applications endorsed "Assistant School Medical Officer," accompanied by copies of not more than three testimonials, must be sent not later than first post on Monday, the 5th October, 1914, to the undersigned, from whom forms of application (to be completed in candidate's own handwriting) can be obtained.

Canvassing, either directly or indirectly, is prohibited, and may disqualify. A. J. DAWSON, Clerk to the Education Committee.
Shire Hall, Durham, 22nd September, 1914.

Several Sea Appointments now vacant. Surgeons with families or friends going abroad will find an immense saving by obtaining their passages through MOORE & CO. All passages booked free of charge. Surgeons as medical officers to ships or for the outward voyage only to the Colonies are obtained through MOORE & CO. the recognised agents to all shipping firms. Established 1840.—Apply to MOORE & CO., Medical Agents, Wholesale Druggists, 125, Houndsditch, E.C. Telegrams: Filicique, London. Telephone: No. 1235 Avenue.

Ship's Surgeon. — Messrs. Elder Dempster and Co., Limited, have a few vacancies for Surgeons in their West African Service. Steamers call Madeira, Canary Islands, and West African ports. Pay £15 per month. Length of voyage varies from six to ten weeks, according to particular route.—Apply, Medical Superintendent, Messrs. Elder Dempster and Co., Limited, Colonial House, Liverpool.

Locums and Assistants will find work on applying to Lee & Martin, 93, Hall-road, Handsworth, Birmingham. Telegrams: "Locum, Birmingham."

Wanted, an Assistant, in-doors £200, or equivalent out-doors, mixed general Practice, Hospital in place, near Bristol.—Address, Z., Ferris & Co., Ltd., Bristol.

In-door Assistant required. Small Country Town. Purely Agricultural district. Visit, dispense, Midwifery. Duties light. Salary, full particulars, No. 183, THE LANCET Office, 423, Strand, W.C.

India.—Assistant Medical Officer wanted at once for Tea Estates in very healthy district. Engagement for three years. Salary £600 first year. Applicant should not be over thirty years of age.—Apply, General Manager, the Scholastic, Clerical, and Medical Association, 22, Craven-street, W.C.

Doctor. — Wanted immediately for Singapore, qualified unmarried man as ASSISTANT, view Partnership, old-established Practice, and must be a good man. Commencing salary £420; three years' agreement; passage paid. Half-pay during voyage out.—Further particulars, apply Durant, Radford & Co., Billiter Buildings, London, E.C.

Locum Tenens.—No fee to Principals. —Mr. PERCIVAL TURNER has a large staff of trustworthy Gentlemen acting as Locum Tenentes, and will be happy to send them as required at short notice on application.—Address, 4, Adam street, Adelphi, London, W.C. Telegrams "Epsomian, London" Telephone: 3399 Central.

Locum Tenens supplied by the Scholastic, Clerical, and Medical Association, Limited, 22, Craven-street, Trafalgar-square, W.C. No Locum Tenens is recommended unless personally known or until direct inquiries have been made as to his character and competence.—Telegraphic Address: "Triform," London. Telephone: No. 1854 Gerrard.

Locum Tenens provided.

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ARNOLD & SONS,
(Surgical Instrument Manufacturers),
TRANSFER DEPT.,
6, GILTSPUR STREET, LONDON, E.C.,
(OPPOSITE ST. BARTHOLOMEW'S HOSPITAL).
Telegrams: "Instruments, London." Telephone: 5240 City.

Temporary Work for some months wanted by young married Graduate, ex-H.S., &c. At present in charge of Mission Hospital abroad, but delayed at home indefinitely owing to the war.—Address, Doctor, 7, Grange-road, Cambridge.

L.R.C.P., M.R.C.S., age 43, good appearance, desires to act as LOCUM in London. Would take charge of West End Practice.—Address, No. 175, THE LANCET Office, 423, Strand, W.C.

Elderly Man (64) requires light EMPLOYMENT. No cycling or nightwork.—Address, No. 178, THE LANCET Office, 423, Strand, W.C.

Medical Man, experienced, having afternoons free, is willing to ASSIST another in W.C. or N.W. district.—Address, stating terms, to No. 181, THE LANCET Office, 423, Strand, W.C.

Assistantship (In- or Out-door) required for part or whole time by a doubly qualified gentleman, in London or Suburb. Well recommended. Reliable. Abstainer. Age forty-five.—Address, No. 182, THE LANCET Office, 423, Strand, W.C.

Dispenser and Bookkeeper (Lady), Hall qual., requires Post with Doctor or Institute in or near S.E. district.—Address, No. 180, THE LANCET Office, 423, Strand, W.C.

Salary no object.—Dispenser (qualified) Secretary seeks post to Doctor. Fluent French. Experienced. Assist books. Cultured artistic tastes. Would go abroad; has travelled.—Miss X., 30, Howitt-road, Belsize Park, Hampstead.

No salary.—Lady desirous of qualifying as Dispenser will give services as Secretary (knowledge typewriting and insurance work) in exchange for practice in dispensing. —G. Epworth, 4, Misken-road, Dartford.

Midwife-Dispenser required by Doctor. Small Country Town. Age, experience, salary in-doors, photo, full particulars to No. 184, THE LANCET Office, 423, Strand, W.C.

Good-class Practice wanted in educational centre, Winchester preferred but not essential.—Apply, Dr. D. M. Macdonald, Waveney, Leven, Fife.

Wanted by a highly qualified and well-known medical man recently retired from active work, a PARTNERSHIP (or small Practice) in good-class residential district easy reach of town. Sussex, Surrey, or N. London. Small panel only—none preferred. Would take charge of a practice whilst owner is on military duties.—Address, No. 185, THE LANCET Office, 423, Strand, W.C.

South - Western County. — Partner wanted for a good-class Town and Country Practice which is likely to increase in the near future. Share for disposal is now worth £600 a year. Expenses are light. Premium one and a half years' purchase, payable on very easy terms.—Apply, Peacock & Hadley, 19, Craven-street, Strand, W.C. (Particulars of PRACTICES and other PARTNERSHIPS will be sent to applicants stating their requirements.

SPECIAL NOTICE.

Mr. Herbert Needes' Offices have been REMOVED to 199, PICCADILLY, W.
Phone: Regent 4838.

War Notice.—Messrs. Arnold & Sons have made special arrangements which will enable Members of the Profession who are serving as Officers at the front or whose Practices are affected by the War to transfer all their obligations, business or domestic; they are also willing to undertake and supervise all matters appertaining thereto, such as Payment of Rents, Premiums, School Fees, Allowances to Dependents, &c., and the efficient conduct of the Practices during their absence.—Address, in confidence, Arnold & Sons, Transfer Department, 6, Giltspur-street, London, E.C.

To Purchasers.—Do not buy any Practice or Partnership without an investigation into books and other inquiries by an expert specially competent to conduct the same. Thirty-six years' personal attention to such inquiries has given Mr. PERCIVAL TURNER an unique ability to advise in all cases. Terms and full particulars free on application to 4, Adam-street, Strand, London, W.C. Telephone: 3399 Central. Telegrams: Epsomian, London.

For Disposal, Practices or Partner-SHIPS.—Messrs. ARNOLD & SONS, Surgical Instrument Manufacturers, have been instructed to privately dispose of a large number of really good Practices and Partnerships. Gentlemen are requested to state their requirements and amount of capital available. No charge to purchasers.—Address, Arnold & Sons, Transfer Department, 6, Giltspur-street, London, E.C. (opposite St. Bartholomew's Hospital).

Near Manchester (Residential District.)—Old-established PRACTICE for Sale, owner retiring. Nice detached house with gardens, stables, &c. Original cost £1765. Receipts of practice £325 with great scope. Price for both £1000, part on mortgage.—Manchester Clerical, Medical, and Scholastic Association, Ltd., 8, King-street.

£1100 a year. — Non - Dispensing good-class PRACTICE in Residential Suburb of a Northern Town. Easily worked. No panel or appointments. Fees 3s. 6d. to 21s. Good house and garden. Vendor going to the Front will sell outright or take a suitable Partner.—Apply (No. 5542), care of Mr. Percival Turner, 4, Adam-street, Strand, London, W.C.

Death Vacancy, West London.— General PRACTICE, upwards of £1000 per annum. No panel. Has been £1500. Premium £1000.—London, S.E., Well-established General PRACTICE. Receipts upwards of £1100. Moderate premium on convenient terms. Several good Country Practices. Incumbents mobilised.—Particulars from J. A. Reaside, Watergate House, York Buildings, Adelphi, W.C.

Urgent.—£1500 a year for £1000.— Serious illness compels the sale of a PRACTICE of twenty years' standing in a Hospital Town in Yorkshire. Fees chiefly 2s. to 5s. Panel over £700 a year. Excellent modern house, seven bedrooms, garden, and tennis lawn. Efficient introduction. Part of purchase money can be deferred.—Apply to (5511), care of Mr. Percival Turner, 4, Adam-street, Strand, London, W.C.

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Liverpool—Bronte Street, Russell Street.	,,	2067 Royal.
Birmingham—91-92, Broad Street.	,,	302 Midland.
Manchester—100-120, London Road.	,,	2338 City.
Leeds—9, Park Square	,,	3509 Central.
Cheltenham—Ambrose Street.	,,	112
Gloucester—Ladybellegate Street.	,,	761
Leamington—Windsor Street.	,,	686
Exeter—92, Paris Street.	,,	63 Y Exeter.

For Disposal.—A really good Practice is not always to be had directly, but Mr. Percival Turner (with thirty-five years' personal experience) can generally offer applicants something suitable on being furnished with details of their requirements. Nearly all the best Practices are Sold by him without being advertised.—Full information free of charge on application, personally or by letter, to 4, Adam-street, Adelphi, Strand, W.C.

For Sale (London), non-panel middle-class PRACTICE. £1100-£1200 a year (1st half 1914, £921). Little Midwifery. No Assistant. Well-situated convenient house at £60. Good introduction. Moderate price. — Apply, Herbert Needes, 199, Piccadilly, W.

Wanted, a good-class Practice or PARTNERSHIP producing an income of at least £1500 per annum. Preference would be given to one situated in London or within 100 miles, but any good-class Practice would be considered. Ample capital is available, and the intending purchaser is accustomed to good-class work and a capable surgeon.—Address, No. 186, THE LANCET Office, 423, Strand, W.C.

Ley Clark, House and Consulting Room Agent, 3A, Wimpole-street, W. Nearly a quarter of a century's experience with the medical specialist.
Lists of Houses, Consulting Rooms, and Nursing Homes on application. Tel.: 396 Mayfair.

Consulting Rooms to Let on Ground Floor, with Use of Waiting Room, in Wimpole-street. Excellent light, attendance, &c.—Apply, M.D., 41, Wimpole-street, Cavendish-square, W.

Wanted, Articulated Skeleton in box. Must be in good condition and not less than 5 ft. 6 in. in height. Approval.—Address, No. 179, THE LANCET Office, 423, Strand, W.C.

A Lady residing in South Hampstead would like to hear of a Medical Man who would Hire her 1913 four-seater Rover Car (side screens) from 10 30 to 1 daily. Extremely low terms.—Address, R 435, care of Deacons, 7, Leadenhall-street, E.C.

Received too Late for Classification.

De Gonville Private Nursing and CONVALESCENT HOME. Permanent or Temporary Patients. Dining and Drawing Rooms besides Bedrooms at disposal of patients. Good sit.; near church, sea, and station. Skilful Nursing and every comfort guaranteed.—Apply, terms, &c., Mrs. E. de G. Diamond, 34, Carisbrooke-road, St. Leonards-on-Sea.

St. George's Hospital, S.W. — A vacancy in the office of SURGEON to St. George's Hospital has occurred owing to the resignation of Mr. Jaffrey, and in that of ASSISTANT SURGEON by the resignation of Mr. Fedden.

Candidates for these offices, who must be Fellows of the Royal College of Surgeons of England and registered under the Medical Act of 1858, must send their applications, accompanied by testimonials of recent date, to the Secretary on or before 15th October, 1914, and at the same time send him fifty printed copies of their letter of application and testimonials for distribution among the members of the House Committee.

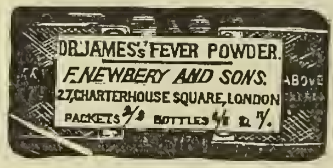
Applications will be considered by the House Committee on 28th October, 1914, at which time candidates are requested to attend to have an interview with the Committee.

The elected candidate will be required to produce a certificate of birth.

Candidates canvassing, directly or indirectly, any member of the Committee will be deemed ineligible for election.

By order.
HENRY WINGROVE, Secretary.
St. George's Hospital House Committee.

PULVIS JACOBI VER., NEWBERY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27 & 28, Charterhouse Square, and 44, Charterhouse Street.
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AËRATED LIME-WATER.

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Terms will be sent on application to the GENERAL MANAGER (Mr. A. V. STOREY), 22, CRAVEN STREET, STRAND, W.C.

FOR SALE.

(1) NORTH-WEST OF ENGLAND.—Old-established PRACTICE in Seaport and Market Town. Receipts year ending July 31st, 1914, £788. Panel 700. Premium £600. Scope for eye work.

(2) SOUTH OF THAMES.—Well-established PRACTICE (chiefly Middle-class) in populous Suburban District. Receipts average £1184 per annum. No panel. Premium 1 year's purchase, or a Share would be sold.

(3) NORTH MIDLANDS.—ASSISTANTSHIP with view to Succession in Middle- and Working-class Practice of over £1200 (mainly panel). No appointments. Premium £800.

(4) DEATH VACANCY.—County Town, North Midlands.—PRACTICE of over £700, including over £470 from National Insurance. Rent £40. Scope.

(5) WEST OF ENGLAND.—PRACTICE of over £260 in small Watering-place. Rent £35 Premium £250.

(6) DEATH VACANCY.—West of London.—Non-panel PRACTICE of over £1000 in Residential Locality. Ample scope.

(7) ESSEX.—PRACTICE in growing Residential District. Receipts 1913 £620. Premium £900.

(8) ESSEX.—Rapidly increasing PRACTICE in Residential Locality, doing at rate of £1000 per annum. Panel 1200. Premium only £650. Exceptional opening for one anxious to save money.

(9) PARTNERSHIP in leading Practice in flourishing Town in the North. Receipts 1913 £3550. No clubs or panel. One-fourth Share at 1½ years' purchase. Graduate preferred.

(10) SEASON PRACTICE in Inland Health Resort. Receipts about £500 per season. Fees up to 2 guineas. Premium £300.

(11) MIDLANDS (near County Town).—Well-established Country PRACTICE in beautiful district. Receipts 1913 over £600. Panel 900 to 1000. Premium £700.

(12) PRIVATE ASYLUM in favourite Southern locality. Established 58 years; 36 years in Vendor's family. Licensed for 16. Capital required £6000, to include freehold, &c.

(13) WEST LONDON.—Non-dispensing PRACTICE. Receipts 1913 £851. Visits 10s. 6d. (some at 5s. and 7s. 6d.). Rent of flat (splendid position) £72. Premium £750.

(14) SOUTH OF ENGLAND.—Bracing Coast Town.—Sound, easily transferable better Middle-class PRACTICE of over £1050 in popular Seaside Resort. Premium 1½ years' purchase. Hospital.

FOR SALE (*continued*).

(15) SOUTH-WEST OF ENGLAND.—Good-class PRACTICE of over £400 per annum in delightful town close to sea. Premium £600. Cottage Hospital.

(16) EASTERN COUNTIES.—Unopposed PRACTICE, averaging over £850 per annum. Station in place.

(17) NORTH MIDLANDS.—Manufacturing Town.—ONE-THIRD SHARE in increasing Practice of over £2100 in rapidly growing district. Price £900, part by instalments.

(18) EASTERN COUNTIES.—PRACTICE of over £800 (including M.O.H. and union appointments) in Country Town. Receipts 1914 (5 months) £622, excluding appointments. Premium 1 year's purchase.

(19) SOUTH-EAST OF ENGLAND.—PRACTICE of over £900 in busy Town. No panel. Expenses light. Premium only £750.

(20) DEATH VACANCY.—Lancashire Town PRACTICE of over £1100. Panel nearly 1300. Excellent introduction can be given.

(21) SOUTH-WEST OF ENGLAND.—Good-class PRACTICE of £400 in attractive Coast Town. Premium £400.

(22) PARTNERSHIP in good Middle-class Non-panel Practice of about £1750 per annum in pleasant outlying Suburb. One-half Share at 1½ years' purchase, part by instalments.

(23) SURREY.—PARTNERSHIP (with Succession) in rapidly increasing Practice. Residential Neighbourhood. Receipts 1913 over £2500. Not much Midwifery. Premium 1½ years' purchase.

(24) CUMBERLAND.—Old-established unopposed Country PRACTICE. Receipts 1913 £708. Small panel. Premium £750.

(25) NORTH LONDON.—Healthy Residential Suburb.—Good Middle-class PRACTICE. Receipts 1913 £533, capable of considerable increase. Premium £500. Hospital appointment.

(26) SOUTH-WEST OF ENGLAND.—Attractive Coast Town.—PARTNERSHIP in old-established Practice of £1900. One-third Share 1¾ years' purchase. Up-to-date Hospital.

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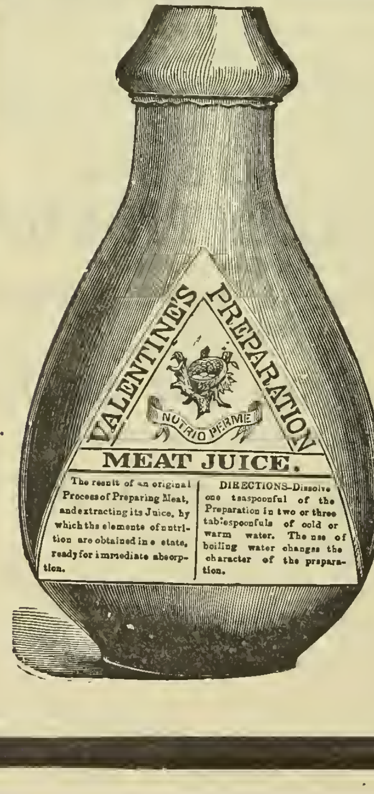
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